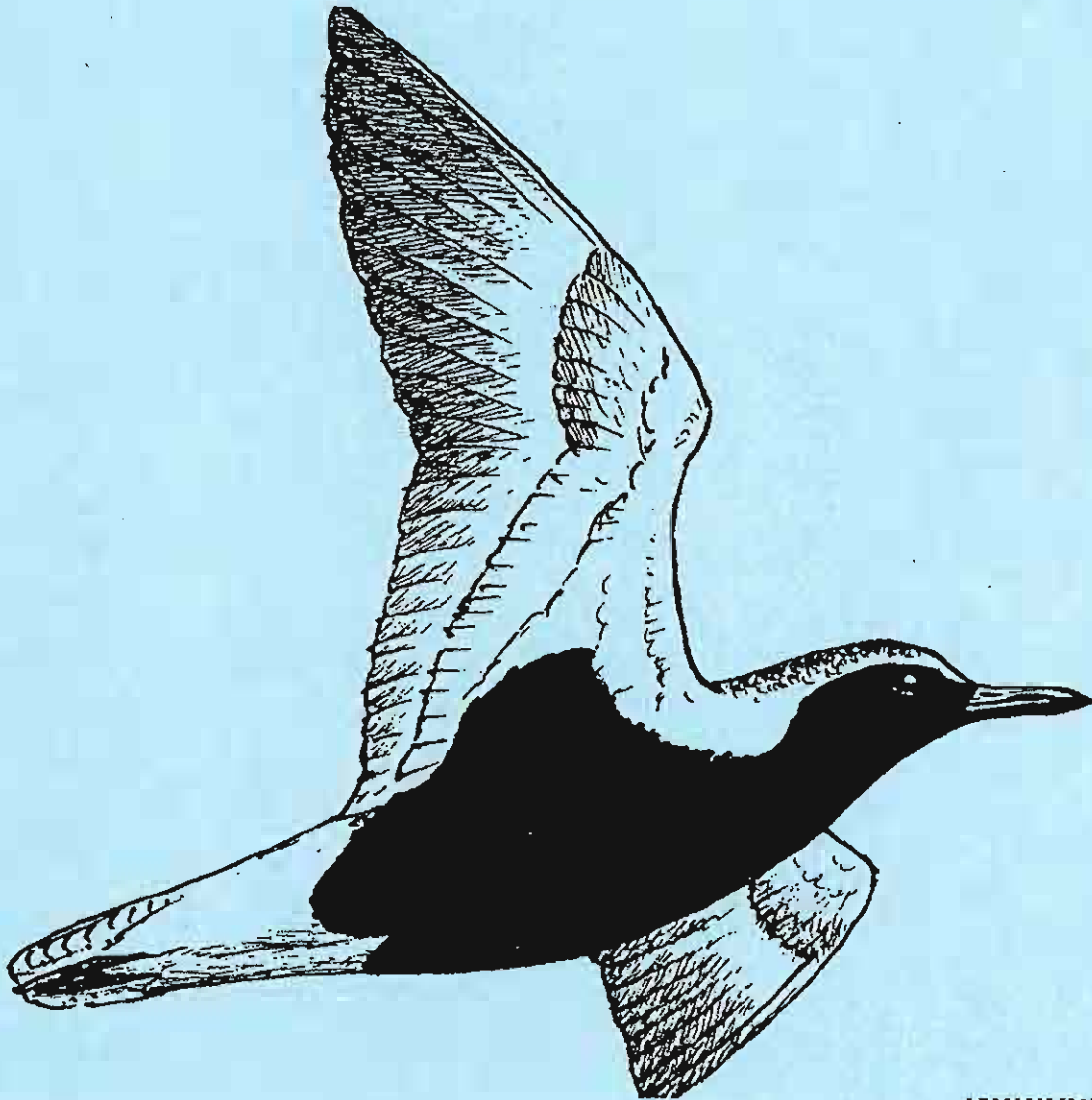


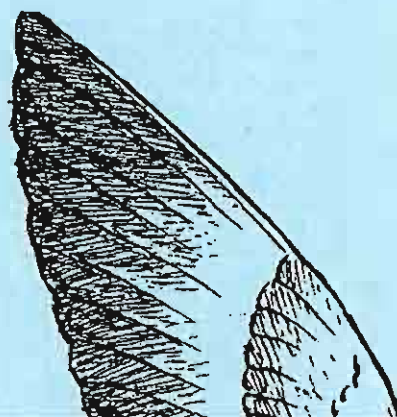
# VWSG BULLETIN

JOURNAL OF THE VICTORIAN WADER STUDY GROUP

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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.

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**VWSG WEB SITE [www.vicnet.net.au/~vwsq](http://www.vicnet.net.au/~vwsq)**

# Summary of VWSG Activities – July 2004 to July 2005

Clive Minton

## Introduction

As each "bird year" begins (August 1st) we look back on the achievements of the previous twelve months and eagerly and excitedly look forward to what the future will bring. Will we have good catching success? Will the weather be kind to us? Will the waders and terns have a good breeding season? What amazing flag sightings and recoveries will be reported? This Bulletin details results for the 2004 calendar year and the first half of 2005.

Each year the fieldwork requires a huge commitment of time and effort by the members of the Group, all volunteers. In 2004 we actually banded waders and terns on 80 days; a similar rate has continued this year with 40 banding days in the first half. Given that the average team is at least 15 people, and that a typical fieldwork day is at least eight hours, we are putting in around 10,000 person hours of fieldwork per year. Imagine paying for that at commercial rates!

To be added to the above totals are the time spent on other wader activities such as counting (population monitoring) and survey work (e.g. the periodic census of breeding Hooded Plovers and Pied Oystercatchers). On top of all this there is also the "behind the scenes" paperwork associated with storing our data, analysing it and converting it into scientific papers and other articles. Over and above this too there is the work associated with manufacturing and maintaining our equipment, and tasks such as making leg flags. All in all a huge volunteer effort goes annually into VWSG activities.

VWSG members put in this effort partly because they enjoy the work - and it is vital that we continue to enjoy what we do - and partly because they care about waders and their conservation. Members recognise that knowledge in the form of scientifically collected data is the basis of all conservation (recognising the need, identifying the means, and convincing others of the necessity). This annual Bulletin is a record of what has happened during the last year. It is prepared for the benefit of the members and others who assist the Group in a whole variety of ways. It inevitably contains much tabular matter but as far as possible the digestion of this is aided by text explanations. This initial summary section is intended to point out the highlights for those who may not have the time to delve into the full details.

## Banding

The wader catch total for 2004 (6334) was close to the average of the last 26 years (7258). The total for the first half-year was actually the lowest ever (1288), but this was partly because of the extremely high catching success (5000 birds in four days) at the end of December in the previous year. Most importantly the quality of the catches in 2004 was excellent, with particularly good numbers of Sharp-tailed Sandpiper (459), Ruddy Turnstone (306), Bar-tailed Godwit (276), Red Knot (230), Red-necked Avocet (56) and Great Knot (26). 111 Sooty Oystercatchers greatly exceeded the minimum annual target (50) but the 89 Pied Oystercatchers were below the target (150). The Sharp-tailed Sandpiper total was particularly high for the second consecutive year, following another extremely successful breeding season. In contrast the Group struggled to catch Curlew Sandpipers because of the now greatly reduced population of this species, with only 65 caught in the 2004 calendar year.

Another pleasing feature of the 2004 figures was the 1224 retraps of birds banded previously. This is close to the average annual rate of 20% of total birds caught. These retraps are the basis for survival rate calculations, as well as being a measure of the return rates of the various species to the location where they were originally banded.

The first half of 2005 has also been a successful period for fieldwork. 5003 waders have been banded in the first six months in spite of many key members of the VWSG being away for a month (in February/early March) participating in the Australasian Wader Studies Group Wader and Tern Banding Expedition in north west Australia.

One of the ongoing objectives of VWSG fieldwork is the systematic collection of comprehensive biometric and moult data on each age group of each species in each month of the year. The first two tables in this Bulletin are updated each year to show sample sizes which have been achieved to date. In 2004 they were particularly augmented by

- a) the first ever Bar-tailed Godwit sample in August (191)
- b) a doubling of the Ruddy Turnstone sample for September (from 33 to 69)
- c) the first significant sample of Sooty Oystercatchers in August (going from 19 to 55)
- d) the September Red-necked Avocet sample being doubled (from 29 to 62)

### **Recoveries and Controls**

It is always pleasing to catch a bird which has been banded by others elsewhere (known as a "control"). The last year has seen three particularly exciting examples. In January 2005 we caught our first Chinese banded wader in Victoria. It was a Red-necked Stint which had been banded in the north west of the Yellow Sea only five months previously. The catching of a New Zealand banded Curlew Sandpiper was also a surprise as only a handful have been banded in that country. But most exciting of all, and most scientifically valuable, was the recapture in June 2005 in Nooramunga National Park (Corner Inlet) of a Russian banded Red Knot. This bird had been banded as a chick in July 2004 in Chukotka, in far, far north east Siberia. This is the first direct proof, from banding and flagging, of the breeding grounds of the Red Knot population that spends the non-breeding season in eastern Australia and New Zealand, the *rogersi* subspecies. It was also exciting to learn that one of the parents of this bird, which had been banded at the same time last year, was seen back at a nest again in the same location in June/July this year! This particular record is not listed in the "recoveries" section of the Bulletin as we don't yet have precise details of the banding location.

Perhaps the most notable recovery of the year was a distance record breaking Pied Oystercatcher which moved 1269 kilometres to northern New South Wales in August 2004 and has remained there ever since. Oystercatchers used to be thought of as being extremely sedentary in Australia but our long-term study now has lots of evidence that movements of a few hundred kilometres are quite common. A Sanderling recovery in the Philippines and five overseas recoveries of Red Knot (two in China) are three of the more exciting long distance movements. Within Australia, a Victorian banded Red-necked Stint in Carnarvon in Western Australia and another seen at the Tanami Mine in the Northern Territory are remarkable because in both cases the metal band number was read with a telescope on the live bird in the field.

### **Flag sightings**

The flagging program, commenced in Victoria in 1990, has been an astounding success. During the past year a further 932 overseas sightings and 264 sightings in Australia away from the flagging areas have been received. This brings the total number of sightings now reported, spread over 17 species, to 3695 overseas and 1666 in Australia. Nearly half the total of flag sightings relates to Bar-tailed Godwits and Red Knot which have moved to New Zealand. The movements information derived from flagging now greatly exceeds that generated by recoveries/controls on almost all species.

The highlight of the flag sightings reported during the past year was another 54 Bar-tailed Godwit from Alaska. One of these was on the breeding grounds, much further east on the north coast of Alaska than any other previous report. The bird was seen at Deadhorse, near Prudhoe Bay, which, at a longitude of 149 degrees west, is 13,032 kilometres from Victoria. This is the second longest movement of any wader marked in Victoria. The record is held by

a Curlew Sandpiper caught at its nest in north west Siberia, 13,069 kilometres from its banding location at Werribee Sewage Farm.

Other notable sightings reported in the last year include our first overseas Common Greenshank, a Red-necked Stint on the breeding grounds in Chukotka, a Black-tailed Godwit in NSW (notable because we have had more flag sightings on this species than the total number we have flagged) and a large number of Great Knot sightings considering how few have been flagged. We also had the first distant flag sightings of Banded Stilts and yet another long distance inland movement of Red-necked Avocet.

The flag sightings emanating from the VWSG's banding activities in the south east of South Australia are listed separately in this Bulletin. They have proportionately generated even more information than the birds flagged in Victoria, probably because the yellow over orange dual flag combination used there is even more visible in the field than the Victorian single orange flag code. The most incredible results have come from only 11 Bar-tailed Godwits flagged in South Australia, with most sightings relating to eight birds flagged there in late November 2004. There have now been 33 individual bird sightings. The full story is detailed in a separate article in this Bulletin ("From Little Things..."). Other interesting recent reports emanating from waders flagged in South Australia include a Curlew Sandpiper in Thailand, another in Indonesia and no less than 54 Sanderling in Japan. Overall there have now been 184 overseas sightings and 294 within Australia from 3655 waders orange/yellow flagged in South Australia.

### **Engraved Flags**

These have been used on Pied and Sooty Oystercatchers in Corner Inlet in Victoria for the last three years. During the last twelve months the use of engraved flags has been extended gradually to other Oystercatcher banding locations. Results to date indicate that engraved flags are rather more difficult to read under field conditions than the multiple colour band combinations used previously. Engraved flags have the advantages that they are much easier to put on the bird, that they do not fade or become brittle over time and that they are less likely to be caught up in stray fishing line etc.

Since November 2004 engraved flags have also been used on Ruddy Turnstones caught in Victoria (at Flinders) and in the south east of South Australia (various locations). This species was chosen for evaluation of the benefits of flags on migratory waders because the chances of re-sighting these birds and reading the engraved flag combination in the field were thought to be greater than for other species visiting south eastern Australia. Initial results in South Australia have shown that with much dedicated effort and perseverance (by Maureen Christie and her team), a high proportion of the engraved flagged birds can be re-sighted.

Whilst the prime purpose of the move to engraved flags was to obtain live re-sighting information for survival rate calculations, a side bonus has been that a number have been observed on birds during migratory stopovers in Asia. One of the Turnstones with an engraved flag from Victoria was seen (twice) in Taiwan on northward migration in 2005 and one of the South Australian birds was seen in Hong Kong (China).

### **Breeding Success**

The primary objective of the banding program in the summer months is to catch adequate samples of a range of species in order to obtain an estimate of breeding success in the previous Arctic summer via the percentage of juvenile birds in the samples caught. This requires intensive targeted fieldwork and sometimes repeated attempts on particular species when obtaining suitable samples proves difficult. In the 2004-05 season it was Curlew Sandpipers, which proved elusive and it required 13 catches to obtain the rather miserable total of 156 birds. To our amazement Sharp-tailed Sandpipers had a second consecutive exceedingly good breeding year. In contrast Red-necked Stints had one of their worst years. The net result of these is that Sharp-tailed Sandpiper populations are recovering from the

decline of recent years, while Red-necked Stint populations are falling back to normal levels after a period of very good breeding years in the late 1990s and early 2000s.

Analyses are currently in progress, or awaiting publication, relating the "% juvenile" measures of breeding success to various conditions (snow melt dates, temperatures, predator numbers) on the Arctic breeding grounds.

### **Terns**

It is not widely realised that the VWSG spends a great deal of effort each year in monitoring breeding populations of terns in Victoria, in banding the chicks of local breeders and adults of migrants from the Northern Hemisphere, and in tern breeding habitat management. In calendar year 2004 the VWSG banded 4996 terns, not a long way short of its 6333 wader total. The most amazing result of the year was the increase in number of breeding pairs of Crested Terns, to 5420 pairs at the three colonies monitored annually. This growth, from less than 1000 pairs in the mid-1980s, has stemmed from the active management by the VWSG of their breeding habitat on Mud Islands and the protection afforded by the Phillip Island Nature Park to the new colony, which formed at The Nobbies in the mid-1990s by the excess birds from Mud Islands.

Another feature of the past year was the largest ever colony of Fairy Terns (90 pairs) nesting in Corner Inlet and the unprecedented arrival of 20 pairs of Little Terns breeding with them. Unfortunately the inevitable complete breeding failure occurred as a result of one of the storm driven tides which occur occasionally in summer.

On the positive side, the recovery of a 23 year old Caspian Tern was a record longevity for this species in Australia. Also of particular note are three migratory Little Terns which were found breeding in Japan.

### **Analysis and Publications**

Considerable progress was made during the year in analyzing VWSG data, generally in conjunction with AWSG data from north west Australia. A range of papers was prepared and a number have already been published, while others have now been accepted for future publication. The work schedule included in the last VWSG Bulletin is not repeated this year. However a future Bulletin will include a comprehensive list of all papers which have been published in which VWSG data has been incorporated.

The task of analysing and preparing information for publication is being undertaken by a number of different people within the Group, and by others outside it. If anyone who is not currently involved wishes to assist in this process they are strongly encouraged to put their hand up!

### **Equipment**

Paul Buckhorn and Rod McFarlane have done a wonderful job in maintaining the Group's equipment in excellent condition during the year. The new trailer is now working extremely well after a few small teething problems were ironed out. The hardware is in better condition than it has ever been. Two new radios have been purchased and several of the firing cables and cable winders have been renewed. New, electronic, firing boxes have been made (thanks to Alan Williams). All this leads to improved efficiency in our field operations.

### **Finances**

The Group's financial situation remains in a satisfactory position. However this is only because of generous financial donations which have been received throughout the year. The most generous of these has been a donation from the late Donald MacMillan, who requested in his will that donations should be made to the VWSG in lieu of the purchase of flowers for his funeral. The resulting \$2035 has been used to replace worn out equipment. Other generous financial contributions came from a number of other individuals in the Group, from

the Department of Sustainability and Environment and from Parks Victoria French Island (who kindly purchased some electric fuses for use in cannon nets).

A generous grant was also received from Coast Action/Coast Care to enable us to undertake the analysis and publication of count and banding data from Corner Inlet.

### **Membership and Committee**

We were extremely sad that long time members of the VWSG Donald MacMillan and Stuart Sarrailhe died during the year. They had both input significantly to our field activities, especially making themselves available when a team was needed at short notice for weekday activities. We hope that their wives, Meg and Liz, will continue to actively participate in VWSG activities in the future.

Membership remained fairly constant throughout the year, with a few new arrivals replacing those who have moved away from Victoria or ceased to be actively involved with the Group. However, we are an ageing team. It is now almost proving easier to get together the mid-week geriatric team than an adequate team at the weekend! While there are quite a number of younger generation females in our membership and fieldwork teams, there seems to be a dearth of young males. What do they do for their leisure activities these days?

It was pleasing that at the 2004 Annual General Meeting two of the younger generation were elected to the VWSG Committee. Welcome Birgita Hansen and Inka Veltheim.

### **Acknowledgements**

As always one could fill a book with the names of people and organizations who have at one time or another assisted the VWSG. They all know who they are and we all appreciate their kindness and help, provided in such a variety of ways.

Although it is difficult to single out people/organisations for special mention I would like to particularly thank

- a) landowners who continue to so generously allow us to operate on, or traverse, their land
- b) Parks Victoria and Phillip Island Nature Park who critically assist our activities at a number of locations by providing boat transport for people and equipment
- c) other organizations. In particular the Department of Environment and Heritage in Canberra who provide financial support for a person to operate the flag sighting database and for someone to assist me in all aspects of communication/data analysis and the preparation of papers. We also gratefully thank the Australian Bird and Bat Banding Scheme and State Government departments who have provided permits for our fieldwork activities
- d) Rosemary Davidson, who so generously makes her house at Yanakie available to the Group during fieldwork activities in Corner Inlet/Nooramunga National Park. This greatly assists us attract a satisfactory team and enormously enhances the enjoyment of our visits.
- e) all the VWSG members who so diligently participated in fieldwork and other activities throughout the year. It is these efforts which have produced the results detailed in this Bulletin.

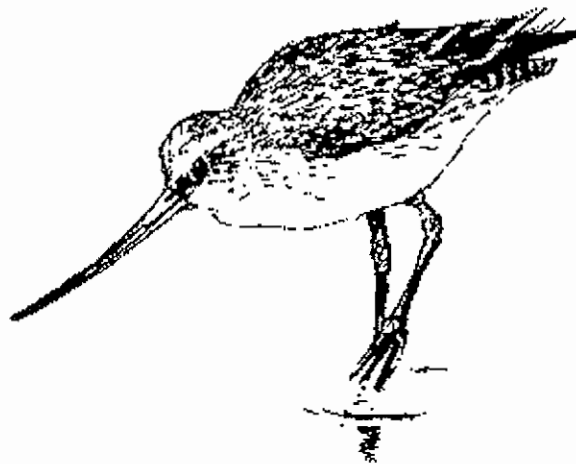
Clive Minton



## Wader Banding Totals – VWSG 2004

Species	New	Retrap	Total
Bar-tailed Godwit	256	20	276
Common Greenshank	24	0	24
Ruddy Turnstone	157	149	306
Great Knot	20	6	26
Red Knot	174	56	230
Sanderling	142	44	186
Red-necked Stint	3609	807	4416
Sharp-tailed Sandpiper	423	36	459
Curlew Sandpiper	51	14	65
Pied Oystercatcher	49	40	89
Sooty Oystercatcher	66	45	111
Black-winged Stilt	14	0	14
Banded Stilt	1	0	1
Red-necked Avocet	56	0	56
Grey Plover	2	5	7
Red-capped Plover	6	0	6
Double-banded Plover	44	2	46
Black-fronted Plover	1	0	1
Hooded Plover	2	0	2
Red-kneed Dotterel	1	0	1
Masked Lapwing	12	0	12
<b>21 Species</b>	<b>5110</b>	<b>1224</b>	<b>6334</b>

Table prepared by Helen Vaughan & Clive Minton



## VWSG Wader Catches 1975 to 31 December 2004

<b>Species</b>	<b>New</b>	<b>Retrap</b>	<b>Total</b>
Latham's Snipe	347	14	361
Black-tailed Godwit	3	0	3
Bar-tailed Godwit	3275	350	3625
Short-billed Dowitcher	1	0	1
Whimbrel	24	0	24
Eastern Curlew	796	62	858
Marsh Sandpiper	2	0	2
Common Greenshank	498	60	558
Terek Sandpiper	33	1	34
Grey-tailed Tattler	38	3	41
Ruddy Turnstone	2575	878	3453
Great Knot	613	79	692
Red Knot	4102	533	4635
Sanderling	2813	1039	3852
Little Stint	7	0	7
Red-necked Stint	97805	27304	125109
Long-toed Stint	1	0	1
Pectoral Sandpiper	2	0	2
Sharp-tailed Sandpiper	7899	341	8240
Curlew Sandpiper	23905	4632	28537
Cox's Sandpiper	1	0	1
Broad-billed Sandpiper	5	0	5
Pied Oystercatcher	2130	1155	3285
Sooty Oystercatcher	704	191	895
Black-winged Stilt	38	0	38
Banded Stilt	152	0	152
Red-necked Avocet	368	5	373
Pacific Golden Plover	236	24	260
Grey Plover	146	23	169
Red-capped Plover	637	181	818
Double-banded Plover	3560	993	4553
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	172	3	175
<b>37 Species</b>	<b>153255</b>	<b>37901</b>	<b>191156</b>

Table prepared by Helen Vaughan & Clive Minton

## VWSG Annual Wader Catch Totals

Calendar Year	New	Retrap	Total
1975	9	0	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
<b>2004</b>	<b>5110</b>	<b>1224</b>	<b>6334</b>
<b>Totals to end 2004</b>	<b>153255</b>	<b>37901</b>	<b>191156</b>
Average annual total for '79-04 = 7258*			

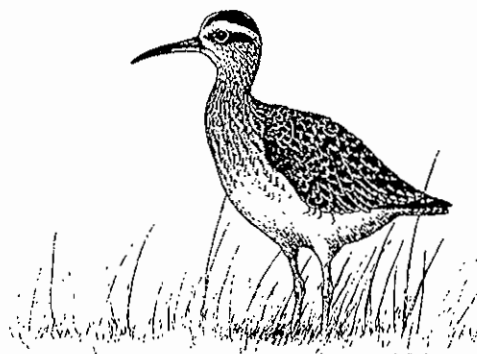
Table prepared by Helen Vaughan & Clive Minton

\* The average printed in the previous VWSG Bulletin was incorrect.

## VWSG 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

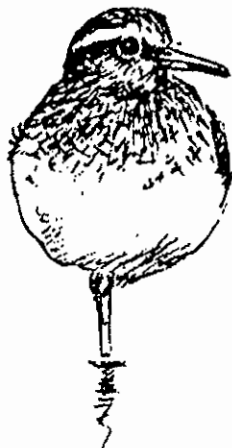
Table prepared by Helen Vaughan & Clive Minton



## Location of Waders Caught in Victoria and South Australia

	To Dec. 2003	2004	Total
<b>Victoria</b>			
Werribee	57058	933	57991
Western Port/Flinders Island	47875	1158	49033
Queenscliff/Swan Bay	27902	974	28876
Anderson Inlet (Inverloch)	20496	1732	22228
Corner Inlet	20075	933	21008
Sandy Point/Shallow Inlet	1543	44	1587
Laverton	955	1	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
<b>South Australia</b>			
Canunda/ Carpenter Rocks/ Brown Bay/ Beachport	7202	559	7761
<b>Total</b>	<b>184912</b>	<b>6334</b>	<b>191246</b>

Table prepared by Helen Vaughan & Clive Minton



### Waders Leg Flagged in Victoria (orange)

Species	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Latham's Snipe	0	0	0	0	40	0	110	56	70	0	2	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	3
Bar-tailed Godwit	0	1	157	6	64	0	43	173	16	84	388	324	196	80	208	256	1996
Whimbrel	0	0	0	0	16	0	0	0	0	2	0	2	0	1	0	0	21
Eastern Curlew	0	0	8	0	73	88	87	4	37	35	91	27	18	18	38	0	524
Marsh Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Common Greenshank	0	0	21	21	51	0	1	109	131	19	0	0	0	1	41	24	419
Terek Sandpiper	0	0	2	2	2	2	0	0	0	0	0	1	0	1	0	0	10
Grey-tailed Tattler	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	0	5
*Ruddy Turnstone	0	99	188	37	35	1	194	129	194	372	75	54	34	22	20	154	1608
Great Knot	0	0	2	0	4	4	3	36	31	21	21	53	38	78	3	20	310
Red Knot	0	0	302	26	88	1	52	59	295	289	175	334	377	681	54	176	2909
*Sanderling	0	0	163	0	191	1	47	328	148	342	51	118	36	37	26	140	1628
Little Stint	0	0	0	1	0	0	0	0	0	0	1	0	1	0	2	0	5
Red-necked Stint	0	799	1259	2516	2282	1661	1384	3065	1434	3224	4215	6038	2570	5792	5839	3489	45567
Pectoral Sandpiper	0	0	0	0	0	0	0	0	1	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	3794
Curlew Sandpiper	146	462	367	1255	808	839	469	753	270	633	770	1162	417	373	517	51	9292
Cox's Sandpiper	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Broad-billed Sandpiper	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	3
Black-winged Stilt	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	14	20
Banded Stilt	0	0	0	0	0	0	0	0	0	0	0	151	0	0	0	1	152
Red-necked Avocet	0	0	0	0	5	0	0	0	27	0	0	46	0	6	0	56	140
Pacific Golden Plover	0	10	10	1	0	0	0	6	0	10	13	0	14	0	0	0	64
Grey Plover	0	0	0	1	0	0	6	0	22	0	0	21	0	24	1	2	77
Red-capped Plover	0	0	0	0	0	0	19	0	29	3	10	2	2	12	4	6	87
Double-banded Plover	0	0	0	0	0	0	8	0	0	40	24	98	3	90	19	46	328
Lesser Sand Plover	0	0	0	14	6	8	9	13	0	4	1	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	16
Black-fronted Dotterel	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
Red-kneed Dotterel	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	3
Masked Lapwing	0	0	0	0	0	0	1	0	4	0	0	2	5	4	1	12	29
<b>32 Species</b>	<b>146</b>	<b>1375</b>	<b>2729</b>	<b>3992</b>	<b>3739</b>	<b>2656</b>	<b>2475</b>	<b>4881</b>	<b>2867</b>	<b>5554</b>	<b>6053</b>	<b>8538</b>	<b>3735</b>	<b>7895</b>	<b>7844</b>	<b>4870</b>	<b>69349</b>

\*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.

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

<b>Species</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>Total</b>
Latham's Snipe	0	0	4	0	0	0	4
Grey-tailed Tattler	0	1	0	0	0	0	1
Bar-tailed Godwit	0	0	0	3	0	138	11
Ruddy Turnstone	234	226	73	193	76	77	940
Red Knot	0	0	0	0	0	1	1
Sanderling	63	420	2	315	328	95	1205
Red-necked Stint	126	383	22	319	163	73	1108
Sharp-tailed Sandpiper	0	2	0	27	7	2	109
Curlew Sandpiper	24	11	0	190	13	0	240
Pacific Golden Plover	0	2	0	0	1	0	3
Red-capped Plover	0	0	1	7	5	0	13
Double-banded Plover	0	0	4	5	1	0	10
Black-fronted Plover	0	0	0	3	0	0	3
Hooded Plover	0	0	0	0	1	0	1
Masked Plover	0	0	0	0	4	2	6
<b>Total</b>	<b>447</b>	<b>1045</b>	<b>106</b>	<b>1062</b>	<b>599</b>	<b>396</b>	<b>3655</b>

Table prepared by Helen Vaughan & Clive Minton

**VWSG FIELDWORK PROGRAM**
**January to December 2005**

DATE	PLACE AND OBJECTIVES	HIGH TIDE	
Sun 2 Jan	<b>Yallock Creek</b> - Small waders	06.10	2.74
Mon 3 Jan	<b>Stockyard Point</b> - Curlew Sandpiper	0639	2.69
Thurs 6 Jan	<b>Barrallier Island</b> - Curlew Sandpiper	0814	2.51
Fri 7 Jan	<b>Corner Inlet</b> - Caspian, Crested tern chicks	1448	0.48
Fri 14 Jan to Sun 16 Jan	<b>Queenscliff &amp; Swan Bay</b> Small waders & Bar-tailed Godwit Tide times at Port Phillip Heads. 2 hours later in Swan Bay	1534' 0435 1630 0517	1.33 1.54 1.35 1.52
Wed 19 Jan To Sun 23 Jan	<b>Corner Inlet</b> Large & small waders	0726; 0757 0828; 0901 0943	2.47; 2.40 2.33; 2.25 2.15
Wed 26 Jan to Thurs 27 Jan	<b>Gippsland Lakes</b> Little & Common Terns	n/a	
Fri 28 Jan	<b>Sandy Point</b> - Sanderling	1451	1.15
Sat 12 Feb	<b>Stockyard Point</b> - Curlew Sandpiper	1643	2.69
Sat 19 Feb	<b>Werribee</b> - Sharp-tailed Sandpiper & Curlew Sandpiper	1036	0.80
Mon 7 Mar	<b>Werribee</b> - Pied Oystercatcher	1047	0.81
Sun 13 Mar	<b>Queenscliff</b> - Pied Oystercatcher	1528"	1.48
Mon 14 Mar To Thur 17 Mar	<b>South Australia</b> Sanderling & Turnstone	1501; 1532 1605; 1640	1.0; 1.0 1.0; 0.9
Tues 12 April	<b>Hastings</b> - Pied Oystercatcher	1603	3.01
Mon 25 April	<b>Fairhaven</b> - Pied Oystercatcher	1357	2.70
Mon 23 May	<b>Rhyll</b> - Pied Oystercatcher	1224	2.61
Sat 28 May	<b>Roussac Point</b> - Pied & Sooty Oystercatcher	16.06	2.61
Sat 11 June	<b>Barry Beach</b> - Pied & Sooty Oystercatcher	15.51	2.42
Wed 22 to Sun 26 June	<b>Corner Inlet</b> Oystercatchers & overwintering grey waders	11.43 to 15.42	2.34 to 2.57
Sat 9 July	<b>Long Island, Hastings</b> - Pied Oystercatcher	15.16	2.83
Sat 23 & Sun 24 July	<b>Lyons Downs, Yanakie &amp; other Corner Inlet</b> - Oystercatchers	13.21 14.22	2.36 2.42
Sun 7 August	<b>Stockyard Point</b> - Pied Oystercatchers	14.49	2.70
Sat 10 Sept	<b>AGM at Clive &amp; Pat Minton's house</b> 10am Equipment maintenance 4pm AGM 5.30pm BBQ 7pm Talks & slides	10am – 10pm	
Sun 18 Sept	<b>Yallock Creek</b> Newly returned Red-necked Stint	12.35	2.56
Sat 22 & Sun 23 Oct	<b>Queenscliff</b> - Bar-tailed Godwit, Red Knot, Grey Plover & Greenshank	14.48 03.52; 15.25	1.35 1.56; 1.32
Sun 6 & Mon 7 Nov	<b>Queenscliff</b> - Bar-tailed Godwit, Red Knot, Grey Plover & Greenshank	03.46; 15.27 04.28	1.57; 1.28 1.55
Wed 23 Nov	<b>Inverloch</b> - Red-necked Stint	05.37	1.40
Sat 10 Dec	<b>Yallock Creek</b> Red-necked Stint & Curlew Sandpiper	08.06	2.68
Wed 21 Dec	<b>Corner Inlet</b> - Caspian & Crested Tern chicks	na	
Thurs 22 Dec	<b>Sandy Point</b> - Sanderling	16.59	1.16
Fri 23 Dec	<b>Flinders</b> - Ruddy Turnstone	05.44	1.37
Tues 27 to Thurs 29 Dec	<b>Werribee</b> Small waders	10.57 11.36; 12.26	0.82 08.0; 0.78



## Recoveries of Waders Banded in Victoria

Clive Minton, Rosalind Jessop and Peter Collins

Each year we list the recoveries of VWSG banded birds that have been reported through the Australian banding office since the last VWSG Bulletin. The list also includes birds banded elsewhere which we have caught in Victoria.

These days the flag sighting reports greatly outnumber the recoveries, by a factor of about 20. But recoveries are extremely important because the individual bird is identified, usually by its metal band number, and hence its exact date of banding and, even more importantly, its age when banded are known. The list includes all live birds that have moved significantly away from their banding area – generally defined as interstate or overseas – and any bird reported dead, even when close to where it was originally banded.

The highlight of this year's recoveries / controls is the first capture of a Chinese banded wader in Victoria – a Red-necked Stint. Also unusual is the recapture of a New Zealand banded Curlew Sandpiper. There was a particularly good crop of Red Knot and Red-necked Stint recoveries this year too. As always, the list is dominated by the surprisingly mobile Pied Oystercatchers.

The age codes at banding are 1 = juvenile or first year, 2 = second year, 2+ = second year or older, 3 = third year, 3+ = third year or older.

### Bar-tailed Godwit

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
072-82450	2	22/08/2004	Duck Point, Yanakie	13/12/2004	Totara Ave, Golden Bay, South Island, NZ	2258 E
072-64797	2+	27/01/2000	Queenscliff	15/12/2004	Rabbit Island, Tasman Bay, South Is, NZ	2449 E

These two Bar-tailed Godwit recoveries follow the well established pattern of moving from Australia to New Zealand. The bird from Yanakie was particularly pleasing as quite a few of the birds in the excellent catch of immatures which we made there on 22<sup>nd</sup> August 2004 showed significant weight gains which we postulated were to facilitate a trans Tasman crossing in September. Sure enough this happened as the bird was recaptured by the New Zealand Wader Study Group in South Island on 13<sup>th</sup> December. They caught the second bird, from Queenscliff, only two days later. Unusually this had been banded as a "second year or older" in mid-summer (27<sup>th</sup> January). Most birds that move to New Zealand after spending extended time in Australia are birds which are just over one year old.

## Ruddy Turnstone

Band	Age	Date Banded	Location Banded	Engraved Flag Resighted	Location Resighted	KM Moved
051-60537 (Orange 4J)	2+	12/11/1997	West Head, Flinders	28/04/2005	Han-Pao, Changhua County, Taiwan (China)	7411 NW
"	"	"	"	11/05/2005	"	"

These two sightings of the same bird on northward migration through Taiwan (China) were facilitated by the engraved flag which is now used on Turnstones banded (or retrapped) in Victoria and South Australia. The code on the flag was read with a telescope, and photographed, by one of the members of the extremely keen and active Taiwan Wader Study Group. The bird had originally been banded at Flinders in November 1997 and it had been recaptured there several times, the last date being on 15 December 2004. It is interesting that the bird made a migratory stopover of at least 13 days in Taiwan.

## Red Knot

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
052-24068	1	02/04/2002	Barry Beach Corner Inlet	02/10/2004	Miranda, Firth Of Thames, New Zealand	2534 E
052-23910	1	18/06/2003	Manns Beach Corner Inlet	02/10/2004	Miranda, Firth Of Thames, New Zealand	2495 E
052-02713	3+	09/10/1999	Rhyll, Phillip Island	02/10/2004	Miranda, Firth Of Thames, New Zealand	2628 E
051-60507	2+	18/10/1997	NW Swan Bay, Queenscliff	06/05/2005	Chongming Dao, Shanghai, China	8095 N
052-22850	1	20/01/2002	Barrallier Island Western Port	06/05/2005	Chongming Dao, Shanghai, China	8121 N

The two birds captured in China, on the same day, during northward migration are particularly pleasing as two Australian wader banders were working with Zhang Kejia at Chongming Dao at that time. A Victorian banded Red Knot was also captured there in April 2004, and had been banded in the same catch at Barrallier Island as one of these birds.

It was amazing that three Red Knot banded in Victoria were caught together at Miranda in New Zealand on 2<sup>nd</sup> October. Two had been banded in their first year in Australia and were showing a typical movement into the New Zealand population for later years. The third bird was probably a passage migrant when banded as an adult on 9<sup>th</sup> October at Rhyll.

## Red-necked Stint

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
036-10936	2+	29/11/2003	Inverloch	12/06/2004 (found dead)	Sandy Beach Near Inverloch Vic	<2 S
036-08677	1	05/01/2003	Yallock Creek	22/08/2004 (recaptured)	Wetlands Haixing County Hebei Province, China	9017 N
036-00571	1	12/06/2002	Barry Beach Corner Inlet	20/09/2004 (read in field)	Carnarvon SF WA	3429 W
036-11037	1	17/01/2004	N.W. Swan Bay, Queenscliff	19/11/2004 (found dead)	North West Corner Swan Bay Queenscliff Vic	0
035-81504	2+	10/03/2001	Werribee SF	29/01/2005 (found dead)	Werribee SF (North Spit) Vic	<2
101-07358	1	23/01/2005	Manns Beach Corner Inlet	06/03/2005 (read in field)	Tanami Mine, 650km NW of Alice Springs Northern Territory	2652 NW
035-37981	1	13/10/1999	Mandorah Marsh, Sandfire WA	02/01/2005 (recaptured)	Yallock Creek Near Kooweerup Vic	3024 SE
B324335	1	20/08/2004	Wetlands Haixing County, Hebei Province, China	06/01/2005 (recaptured)	Barrallier Island, Western Port Vic	9017 S

The capture of a Chinese banded Red-necked Stint at Barrallier Island was especially pleasing as it was the first Chinese banded bird to be recaptured in Victoria. It had been banded as a juvenile on its southward migration in the Yellow Sea only four and a half months previously. Interestingly, on the same day the Chinese banders caught a VWSG Red-necked Stint banded not far from Barrallier, at Yallock Creek.

Three of the other recoveries illustrate the wide spread of migration routes which Red-necked Stint have in Australia. Two of these records, the one at Carnarvon and the one at the Tanami mine, were the result of a keen ornithologist patiently managing to read the numbers on the metal band with a telescope, having originally been alerted to its presence by the orange flag. The Tanami record was particularly unexpected as it was of a bird banded as a juvenile only six weeks previously in Corner Inlet. It was making an early move from Victoria to probable "wintering grounds" (austral) in NWt Australia.

## Curlew Sandpiper

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
041-92132	1	21/01/1996	Manns Beach Corner Inlet	14/02/2005	Roebuck Bay Broome WA	3298 NW
B86384 + White flag	2+	01/03/2003	Karaka - Sth Manakau Harbour, New Zealand	19/02/2005	Yallock Creek Kooweerup Vic	2576 W

Less than 20 Curlew Sandpipers have ever been banded in New Zealand, so it was especially pleasing to recapture one in Victoria. Having spent at least one summer in New Zealand it appears that this bird changed its non-breeding location to Australia in a subsequent year. This is the reverse of what Red Knot and Bar-tailed Godwit do. But it is rather different in that it is another of the growing list of examples of birds which occur in fringe non-breeding areas and ultimately move to more mainstream parts of the range.

The Curlew Sandpiper caught on 14<sup>th</sup> February at Broome would appear to have also changed its non-breeding area, by an even larger amount.

## Pied Oystercatcher

BAND	Age	Date Banded	Location Banded	Date Recovered	Status	Location Recovered	State	KM Moved
10115502	3+	16/05/1999	Barry Beach, Corner Inlet	14/05/2004	seen	Lakes Entrance	VIC	168E
10096888	3+	10/06/1990	Barry Beach, Corner Inlet	05/11/2004	seen	Carpenter Rocks	SA	529W
10122045	3+	21/12/2003	Barry Beach, Corner Inlet	18/01/2005	seen	Albifrons Island	VIC	146NE
10122081	3+	21/12/2003	Barry Beach, Corner Inlet	18/01/2005	seen	Albifrons Island	VIC	146NE
10122083	2	21/12/2003	Barry Beach, Corner Inlet	18/01/2005	seen	Albifrons Island	VIC	146NE
10107484	2	22/07/2001	Barry Beach, Corner Inlet	24/01/2005	seen	Merimbula	NSW	369ENE
10103956	3	13/08/1994	Barry Beach, Corner Inlet	12/03/2005	seen	Wingan Inlet	VIC	293NE
10096837	3+	06/08/1989	Barry Beach, Corner Inlet	11/05/2005	seen	Pelican Point	SA	527W
10103544	2	06/06/1992	Barry Beach, Corner Inlet	00/02/2004	seen	Fitzmaurice Bay, King Is.	TAS	261SW
10121212	3	13/05/2002	Fairhaven, French Island	24/01/2005	seen	Merimbula	NSW	540NE
10121927	2+	03/05/2003	Fairhaven, French Island	13/06/2005	Dead	French Island NP	VIC	<2SE
10121216	3	13/05/2002	Fairhaven, French Island	05/08/2004 to 18/02/2005	seen	North Tuross Beach, Tathra, Merimbula	NSW	554NE
10121932	3+	03/05/2003	Fairhaven, French Island	14&24/11/2004	seen	Livingstones Bay	SA	328W
10121920	3+	03/05/2003	Fairhaven, French Island	27/03/2005, 18/06/2005	seen	Port Fairy, Rutledge Cutting	VIC	159W
10104718	3+	03/06/1996	Long Island, Western Port	06/11/2004	seen	7 K N Beachport	SA	373W
10107358	3+	09/04/2001	Long Island, Western Port	24/06/2005	seen	Perkins Island	TAS	276S
10107315	3+	07/03/2001	Manns Beach, Corner Inlet	30/07/2004	seen	Mallacoota	VIC	284ENE
10121193	1	27/04/2002	Rhyll, Phillip Island	25/09/2004	Dead	Summerland Beach, Phillip Island	VIC	17W
10121241	2	25/05/2002	Roussac Point, Corner Inlet	19/10/2004	seen	Lake Brou Beach	NSW	451NE

10107390	3+	26/05/2001	Roussac Point, Corner Inlet	23/10/2004	seen	Tathra	NSW	400NE
10115943	1	20/06/2000	Roussac Point, Corner Inlet	06/11/2004	seen	7 K N Beachport	SA	567W
10121249	3	25/05/2002	Roussac Point, Corner Inlet	09/11/2004	seen	29 KM S Murray Mouth	SA	690W
10122019	3+	19/06/2003	Roussac Point, Corner Inlet	18/02/2005	seen	Merimbula	NSW	403NE
10115115	3+	24/07/1997	Roussac Point, Corner Inlet	00/07/2004	Dead	Lakes Entrance, 3KM West	VIC	179NE
10122002	3	19/06/2003	Roussac Point, Corner Inlet	09/10/2004, 18/12/2004, 22/12/2004	seen	Narrawallee Inlet	NSW	541NE
10122055	3+	02/08/2003	Roussac Point, Corner Inlet	09/10/2004, 24/01/2005	seen	Tathra, Merimbula	NSW	403NE
10107397	3+	26/05/2001	Roussac Point, Corner Inlet	20/10/2004, 24/01/2005	seen	Tathra, Merimbula	NSW	403NE
10115960	3+	16/07/2000	Stockyard Point, Western Port	03/07/2004	seen	Merimbula	NSW	420NE
10085094	2+	08/02/1988	Stockyard Point, Western Port	09/11/2004	seen	17K S Murray Mouth	SA	670W
10096814	2+	05/08/1999	Stockyard Point, Western Port	09/11/2004	seen	52 KM S Murray Mouth	SA	618W
10103993	2	11/09/1994	Stockyard Point, Western Port	14/11/2004	seen	D'Estrees Bay, Kangaroo Is.	SA	747W
10104654	2	18/05/1996	Stockyard Point, Western Port	14/11/2004	seen	Cape Douglas	SA	433W
10121167	3+	14/04/2002	Stockyard Point, Western Port	07/12/2004	seen	Port Fairy	VIC	283W
10107349	2	08/04/2001	Stockyard Point, Western Port	24/12/2004	seen	Green Point	SA	407W
10104634	3+	18/05/1996	Stockyard Point, Western Port	27/03/2005	seen	Port Fairy, Rutledge Cutting	VIC	272W
10104647	2+	18/05/1996	Stockyard Point, Western Port	03/04/2005	seen	Eurobodalla NP, Narooma	NSW	467NE
10121163	3+	14/04/2002	Stockyard Point, Western Port	18/06/2005	seen	Port Fairy, Merri River	VIC	272W
10115540	1	28/06/1999	Stockyard Point, Western Port	07/02/2004 to 23/06/2005	seen	Bucks Bay, Pt MacDonnell, Livingstones Bay, Pelican Point, Blackfellow Caves	SA	439W
10104632	3+	18/05/1996	Stockyard Point, Western Port	07/08/2004, 27/03/2005, 15&21/06/2005	seen	Griffiths Is & around Pt Fairy	VIC	272W
10121176	3+	14/04/2002	Stockyard Point, Western Port	08/06/2004 to 11/01/2005	seen	Gerloff Bay, Pt MacDonnell, Pelican Point Green Point, Picannie Ponds	SA	493W
10107343	3+	08/04/2001	Stockyard Point, Western Port	10, 19, 26/11/2003, 12, 18/12/2003	seen	Port Fairy	VIC	272W
10121154	3+	14/04/2002	Stockyard Point, Western Port	14/08/2003, 11/05/2005	seen	Port Fairy	VIC	272W
10122064	3	13/09/2003	Stockyard Point, Western Port	15/08/2004, 17/11/2004	seen	Broadwater, Grafton	NSW	1269NE
10160003	1	26/02/2000	Stockyard Point, Western Port	22/08/2004 to 04/04/2005	seen	Stony Point, 8 Mile Creek, Riddock Bay	SA	493W
10107339	2	08/04/2001	Stockyard Point, Western Port	22/08/2004 to 22/06/2005	seen	Port MacDonnell	SA	493W
10104643	3+	18/05/1996	Stockyard Point, Western Port	22/08/2004, 02/11/2004	seen	Brown Bay	SA	481W
10122075	4+	13/09/2003	Stockyard Point, Western Port	27/03/2005, 18/06/2005	seen	Port Fairy, Rutledge Cutting, Merri River	VIC	272W
10104621	3+	30/09/1995	The Gurdies, Western Port	13/08/2004	seen	North Tuross Beach	NSW	479NE
10099432	2	29/09/1992	The Gurdies, Western Port	27/03/2005	seen	Port Fairy, Rutledge Cutting	VIC	288W
10104837	3	03/08/1996	The Gurdies, Western Port	03/04/2005	seen	Glenselg Estuary, Nelson	VIC	400W

10099572	1	03/05/1992	Werribee SF	07/08/2004	seen	Griffiths Is, Pt Fairy	VIC	205W
10096871	2+	06/05/1990	Werribee SF	14/11/2004	seen	Cape Douglas	SA	343W
10096873	1	06/05/1990	Werribee SF	14/11/2004	seen	Cape Douglas	SA	343W
10099577	1	03/05/1992	Werribee SF	11/01/2004 To 28/06/2005	seen	Port Fairy & Killarney Beach	VIC	204W

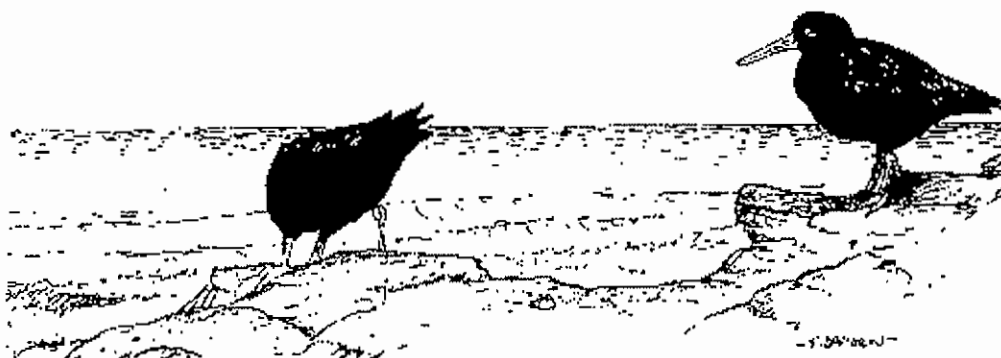
Pied Oystercatchers are far from resident. Movements along the coast as far west as the Murray River mouth, and eastwards and northwards as far as Botany Bay are regularly reported. The active band of wader (and tern) watchers in the southern half of NSW, at Port Fairy in Victoria and South Australia are particularly prolific at finding our individually colour-marked birds.

The movement to Broadwater on the northern NSW coast is a record (1269km). The bird is apparently still present there (August 2005) but has not yet taken up a breeding territory or selected a mate even though it is now four years old.

### Sooty Oystercatcher

BAND	Age	Date Banded	Location Banded	Date Recovered	Status	Location Recovered	State	KM Moved
10103567	3+	15/01/1993	Queenscliff	20/01/2005	seen	Rabbit Island	VIC	174E
10103691	2+	09/07/1994	Altona foreshore	08/03/2005, 06/04/2005	seen	Port Fairy	VIC	234W
10104810	2	05/07/1996	Roussac Point, Corner Inlet	14/04/2005	retrap	West Head, Flinders	VIC	105W
10107317	1	12/03/2001	West Head, Flinders	31/07/2004	retrap	Manns Beach	VIC	154E
10121273	3	12/06/2002	Lyons Downs, Yanakie	11/05/2005	seen	Pelican Point	SA	518W
10121285	3	12/06/2002	Lyons Downs, Yanakie	03/07/2004	seen	Perkins Island	TAS	242S

The movements of Sooty Oystercatchers are less well known than that those of Pied Oystercatchers. Their use of rocky offshore areas may mean that they are reported less often than Pied Oystercatchers.



## Recoveries of Waders Banded in South Australia

Clive Minton, Rosalind Jessop, Peter Collins, Maureen Christie and Iain Stewart

Recoveries of waders banded on the south east coast of SA continue to trickle in and add to the knowledge on migratory movements building up from the sightings of leg-flagged birds.

The list below gives details of four recoveries of four different species. These include our first ever recovery of a Sanderling in the Philippines. Even more surprising was the sighting of the only Red Knot which had ever been leg-flagged in SA and which therefore could be individually identified.

### Ruddy Turnstone

Band	Age	Date Banded	Location Banded	Engraved Flag Resighted	Location Resighted	KM Moved
052-38720 (Orange C2 over Yellow)	2+	22/11/2004	Brown Bay	10/05/2005	Mai Po Marshes, Hong Kong (China)	7097 NW

Ruddy Turnstone seem to have a fairly narrow northward migration route through Taiwan (China) and the southern parts of the Chinese coast, including Hong Kong. This bird was recognised via its engraved leg flag.

### Red Knot

Band	Age	Date Banded	Location Banded	Date Seen	Location Seen	KM Moved
061-89447	1	27/04/2004	Carpenter Rocks	23/06/2004	Lake Victoria, Near Point Lonsdale Vic	370 E

This first-year bird moved from Carpenter Rocks in South Australia to Queenscliff in just two months. Red Knot are uncommon on that part of the South Australian coast. This would appear to be a bird moving towards a more conventional location.

### Sanderling

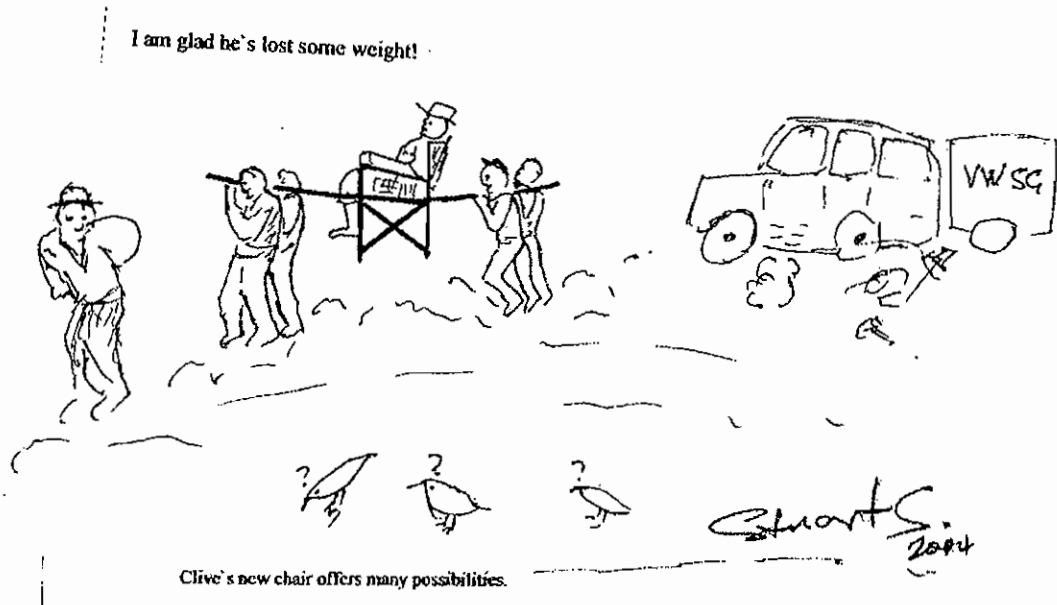
Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
041-96407	2+	25/02/1997	Port MacDonnell	09/09/2004 (found dead)	Times Beach, Davao City, Philippines	5260 NW

This recovery of a bird on southward migration in the Philippines is a first. Most Sanderling use Japan as their principal staging area on southward migration

## Curlew Sandpiper

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
041-95678	3+	09/11/1996	Carpenter Rocks	22/08/2004	Wetlands Haixing County, Hebei Province, China	8835 NW

This Curlew Sandpiper was caught by Chinese banders on the western side of the Yellow Sea during its southward migration. On the same day, they also caught a Victorian-banded Red-necked Stint, and one of the Red-necked Stints, which they banded that day was subsequently recaptured in Vic. The 22nd Aug. 2004 was certainly a red letter day for them!





# Sightings of Waders Leg Flagged in Victoria

## Report Number 12

**Clive Minton, Roz Jessop, Peter Collins, Alice Ewing and Heather Gibbs**

Each year we put together a list of sightings of waders colour leg flagged in Victoria. This is to enable members of the VWSG and those who have searched for and reported leg flags to see the results that are emerging from their efforts. Comments under each species are intended to highlight especially interesting records and also to put the sightings into a context of what was previously known about movements of each species.

This year, for the first time, summary tables are included at the end of the listing. These show a summary, by species/country, of flag sightings reported during the last year (Table 1) and also the cumulative sightings reported since leg flagging was first introduced into Victoria in 1990 (Table 2). There is also a table showing how the number of leg flag sightings made each year has grown over this 15 year period (Table 3).

During the past year a record number of flag sightings have been reported. 932 were birds seen overseas and this added 30% to the previous total of overseas flag sightings. A further 264 were birds seen elsewhere in Australia away from the Victorian coastal flagging sites. Red Knot and Bar-tailed Godwit again topped the lists mainly because of the huge sighting efforts in New Zealand where many of the Victorian birds move. But the list also contains, for the second consecutive year, a good number of Sharp-tailed Sandpiper sightings – a reflection of the high population levels and numbers flagged during the last two summers. A welcome addition to the list was our first overseas sighting of a flagged Common Greenshank.

Overall there have now been 3695 overseas sightings of waders flagged in Victoria, involving 17 species. An additional eight species are involved in the 1666 total flag sightings that have now been accrued within Australia. New Zealand still leads the way as the country in which most Victorian flagged birds are seen (2109 sightings). Each year a collated list of flag sightings are received for the Mai Po Marshes in Hong Kong (China) and the total reports from there over the years have now reached 590. There have been big increases in recent years in the numbers of our birds seen in mainland China and in Taiwan (China). And an amazing 183 Bar-tailed Godwit sightings have now been reported in Alaska. The number of flag sightings in Indonesia and Mongolia, though small in total number still, also grew markedly in the last year.

The pattern of the build up of flag sighting reports over the years is influenced by the increasing numbers of birds leg flagged in Victoria (in the early years only a proportion of the birds caught were flagged). But it is also a reflection of the growing awareness of flagging throughout the Flyway and the greater search effort which now takes place. Although Table 3 suggests some levelling out of the number of flag sighting reports is now occurring it may well be that we shall reach 1000 for the first time in 2005.

Overall 69349 waders have now been orange-flagged in Victoria, of 32 different species (see table on page 10).

The Department of Environment and Heritage Australia have again kindly provided funding, through AWSG, during the past year for the processing of leg flag sightings into a National Database. This involves two to three days work per week on average throughout the year. It enables all flag sighting data to be captured and put on permanent record and for prompt

responses to those who have seen flagged birds and also those who put the flags on. The task grew beyond the capability of being handled by volunteer effort several years ago and DEH is greatly thanked for enabling flag data collection and management to now be dealt with efficiently and effectively. During the past year the leg flag database work has been handled by Alice Ewing and Heather Gibbs.

Below are listed all flag sighting reports which have been received during the last year, i.e. all flag sightings reported since those published in Report Number 11 in the July 2004 VWSG Bulletin (Number 27). It would be appreciated if this detailed information is not used by other researchers without first contacting the VWSG, as several analyses leading to scientific publications are already in train. Note that in the list of sightings under each species, information is given in the following order: date seen / number of flagged birds / location seen / observer(s). The records are in date order within country, except that for China, records are ordered separately for the mainland and for the islands of Taiwan and Hong Kong. This is to maintain clarity and comparability with earlier flag sighting lists.

## Black-tailed Godwit

### Australian

8/12/2004	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
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This species has been the most productive of all flagged by the VWSG. Four flag sightings, two from overseas and two from NW Australia, emanated from the first two Black-tailed Godwits flagged in 1996 and 1997. The above flag sighting follows a third Black-tailed Godwit being flagged, at Swan Island, Queenscliff in January 2003. It almost certainly relates to this bird and follows the same pattern as some of the earlier ones of a bird reverting to spending its non-breeding season in a more conventional Black-tailed Godwit area in Australia. Victoria is on the fringe of the normal distribution of this species and clearly some birds which occur here subsequently change their non-breeding location in a later year.

## Bar-tailed Godwit

### Australian

19/09/2004	1	Fishermans Island, Moreton Bay, QLD	Ivell & Jim Whyte et al
22/09/2004	4	Mathieson Homestead, near Hervey Bay, QLD	John Knight
1/10/2004	1	Boonooroo, near Maryborough, QLD	Dez Wells
1/10/2004	3	Boonooroo, near Maryborough, QLD	Dez Wells
3/10/2004	1	Toorbul, near Bribie Island, QLD	Dez Wells, David Edwards, & David Milton
4/10/2004	1	Merimbula Lake, NSW	Barbara Jones Far South Coast Birdwatchers
4/10/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
5/10/2004	2	Manly Boat Harbour, Moreton Bay, QLD	Dave Houghton
6/10/2004	2	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
15/10/2004	1	Amity Spit, North Stradbroke Island, QLD	Martin Waugh
16/10/2004	2	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Hunter Bird Observers Club
29/11/2004	1	Bush Point, south Roebuck Bay, near Broome, WA	Chris Hassell & Adrian Boyle
12/12/2004	1	Five Islets, Robbins Island, north-western, Tas	Richard Ashby & Mark Brakey
17/01/2005	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
18/01/2005	1	Fullerton Cove Beach, Hunter River, NSW	Jenny Spencer
13/03/2005	1	Toorbul, near Bribie Island, QLD	Des Wells

### Overseas

mid to late June 2004	1	milepost 376, about 100 miles south of Deadhorse (Prudhoe Bay), USA	(unknown)
21/08/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors

21/08/2004	5	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
22/08/2004	2	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
22/08/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
24/08/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
24/08/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
24/08/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
25/08/2004	2	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
25/08/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
4/09/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
5/09/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
6/09/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen & Sarah Connors
7/09/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
8/09/2004	1	Yukon-Kuskokwim Delta, Alaska, USA	Phil Battley & Martin Green
8/09/2004	2	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
9/09/2004	2	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
9/09/2004	2	Yukon-Kuskokwim Delta, Alaska, USA	Phil Battley & Martin Green
9/09/2004	2	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
10/09/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
10/09/2004	1	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen & Sarah Connors
11/09/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen & Sarah Connors
12/09/2004	3	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Heather Swensen
12/09/2004	4	Tern Mountain, Village of Chefornak, Yukon Delta, USA	Sarah Connors
15/05/2005	1	St. Paul, Pribilof Islands, Alaska, USA	Gavin Bieber
28/04/2002	1	Gan-No-Su, Higashi-Ku, Fukuoka-Shi, Japan	Masataka Hanada
29/04/2002	1	Wajiro Tidal Flat, Fukuoka, Kyushu, Japan	(unknown)
19/05/2002	1	Tori-No-Umi, Wafari, Miyagi, Japan	Hitoshi SUGINOME
16/04/2003	1	Kourasu Beach, Kourasu.Mie, Japan	Tatsuya KOBAYASHI
11/04/2004	1	Kasari-cho, Oshima-gun, Anami-Oshima, Kagoshima, Japan	TORIGAI Hisahiro
16/05/2004	1	Nakdong Estuary, near Busan, Korea	Chungrok Park, Wetlands & Birds Korea
2/04/2005	1	Ersari, near Hongsung, Korea	Kim Hyun-tae
7/04/2005	1	Ersari, near Hongsung, Korea	Lee Hae-soon
7/04/2005	1	Ersari, near Hongsung, Korea	Lee Hae-soon
8/04/2005	2	Ersari, near Hongsung, Korea	Jo Jung-jang
13/04/2005	1	Ersari, near Hongsung, Korea	Kim Shin-hwan
13/04/2005	3	Ersari, near Hongsung, Korea	Kim Hyun-tae
15/04/2005	1	Ersari, near Hongsung, Korea	Kim Hyun-tae
15/04/2005	1	Ersari, near Hongsung, Korea	Kim Hyun-tae
16/04/2005	1	Yeongjong Island, Incheon, Korea	John Roberts
16/04/2005	1	Ersari, near Hongsung, Korea	Kim Shin-hwan
16/04/2005	1	Ersari, near Hongsung, Korea	Lee Koang-koo
17/04/2005	1	Mokpo city in south-west Korea, Korea	Ko Kyeng-nam
17/04/2005	2	Geum River Estuary, Chungham Province, Korea	Nial Moores, Peter Nebel, Jake Maclennan
18/04/2005	1	Ersari, near Hongsung, Korea	Lee Hae-soon
20/04/2005	1	Hongsung, Korea	Jo Jung-jang
24/04/2005	1	Mokpo city in south-west Korea, Korea	Park Suk-kyoo
26/04/2005	2	Ersari, near Hongsung, Korea	In-sook Ji
26/04/2005	1	Ersari, near Hongsung, Korea	In-sook Ji
26/04/2005	1	Mokpo city in south-west Korea, Korea	Park Suk-kyoo
2/05/2005	3	Asan Bay, Korea	Lee Ki-hak
4/05/2005	1	Ersari, near Hongsung, Korea	Kim Hyun-tae
3/04/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Mr BAI Qing Quan
24/04/2005	2	Rudong County, Jiangsu, China (mainland)	Cao Lei, Xu Qiang, Ken Gosbell & Mark Barter
30/04/2005	1	Zhuanghe City, Liaoning, China (mainland)	Cao Lei, Xu Qiang, K Gosbell M Barter

12/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Cao Lei, Wang Tao & Zhang Keja
12/05/2005	2	Yalu Jiang National Nature Reserve, China (mainland)	Cao Lei, Wang Tao & Zhang Keja
13/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Cao Lei & Wang Tao
13/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Cao Lei & Wang Tao
24/07/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Nigel Milius
10/09/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Nigel Milius
1/11/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Tony Wilson
13/11/2003	3	Nelson Haven, South Island, New Zealand	David Melville
27/03/2004	1	Golden Bay, Taupota Point, South Island, New Zealand	Peter Field
7/05/2004	1	Miranda, Firth of Thames, South Auckland, New Zealand	Nigel Milius
9/06/2004	1	Miranda, Firth of Thames, South Auckland, New Zealand	Nigel Milius
21/06/2004	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
4/09/2004	1	Big Sand Island, Kaipara Harbour, North Island, New Zealand	Gillian Vaughan & Tony Habraken
24/09/2004	1	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Derek Onley
26/09/2004	2	Karaka, Manukau Harbour, South Auckland, New Zealand	Gillian Vaughan & Ian Southey
26/09/2004	1	Papakanui Spit, Kaipara Harbour, Auckland, New Zealand	Gwen Pulham
27/09/2004	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook, Henk Heinekamp & David Melville
1/10/2004	1	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Gwen Pulham & Gordon Goreby
6/10/2004	2	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Derek Onley
7/10/2004	1	Pakawau, Golden Bay, South Island, New Zealand	Chris Petyt
9/10/2004	3	Kiwi Esplanade, Manukau Harbour, New Zealand	Ted Wnorowski
11/10/2004	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville & Willie Cook
16/10/2004	1	Karaka, Manukau Harbour, South Auckland, New Zealand	David Lawrie et al.
17/10/2004	1	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Ted Wnorowski
17/10/2004	1	Ohiwa Harbour, Bay of Plenty, North Island, New Zealand	Bill Plunket
18/10/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
22/10/2004	1	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Derek Onley
27/10/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
27/10/2004	1	Tauranga Harbour, North Island, New Zealand	Phil Battley
27/10/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
28/10/2004	1	Manawatu Estuary, Manawatu, North Island, New Zealand	Roger Slack
29/10/2004	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	David Melville
31/10/2004	2	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Derek Onley
7/11/2004	1	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Derek Onley
11/11/2004	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook, & Don Cooper
12/11/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
12/11/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
13/11/2004	3	Nelson Haven, South Island, New Zealand	David Melville
13/11/2004	2	Walker Island, Kaipara Harbour, New Zealand	Ted Wnorowski
13/11/2004	2	Totara Ave, Golden Bay, South Island, New Zealand	Rob Schuckard, & Henk Heinekamp
14/11/2004	2	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Ted Wnorowski
14/11/2004	1	Waikawa Harbour, South Island, New Zealand	Richard Schofield
14/11/2004	2	Karaka, Manukau Harbour, South Auckland, New Zealand	David Lawrie
16/11/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
16/11/2004	1	Nelson Haven, South Island, New Zealand	Peter Field

19/11/2004	1	Nelson Haven, South Island, New Zealand	David Melville
25/11/2004	2	Nelson Haven, South Island, New Zealand	Peter Field
26/11/2004	3	Nelson Haven, South Island, New Zealand	Peter Field
30/11/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
9/12/2004	1	Te Whanga Lagoon, Waitangi, Chatham Island, New Zealand	Colin Miskelly (Dept. of Conservation)
10/12/2004	2	Nelson Haven, South Island, New Zealand	Peter Field
13/12/2004	1	Miranda, Firth of Thames, South Auckland, New Zealand	N. Fitzgerald
17/12/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
17/12/2004	2	Nelson Haven, South Island, New Zealand	Peter Field
20/12/2004	3	Manawatu Estuary, Manawatu, North Island, New Zealand	Sav Saville
23/12/2004	1	Bellis Is, Waimea Inlet, near Nelson, New Zealand	David Melville
27/12/2004	2	Parengarenga Harbour, Far North Cape, North Island, New Zealand	Ray Pierce
28/12/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
28/12/2004	1	Nelson Haven, South Island, New Zealand	Peter Field
28/12/2004	1	Motueka Sandspit, near Nelson, New Zealand	Colin Miskelly (Dept. of Conservation)
1/01/2005	2	Nelson Haven, South Island, New Zealand	David Melville
2/01/2005	1	Motueka Sandspit, near Nelson, New Zealand	David Melville
3/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Gillian Vaughan & Ian Southey
3/01/2005	1	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	David Melville
3/01/2005	1	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Gwen Pulham & R. Clough
3/01/2005	3	Kiwi Esplanade, Manukau Harbour, New Zealand	Gwen Pulham & R. Clough
3/01/2005	2	Pakawau, Golden Bay, South Island, New Zealand	David Melville
3/01/2005	1	Pakawau, Golden Bay, South Island, New Zealand	Chris Petyt
4/01/2005	2	Ohiwa Harbour, Bay of Plenty, North Island, New Zealand	Tim Barnard
11/01/2005	3	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
11/01/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
11/01/2005	1	Riverton, Southland, E of Invercargill, South Island, New Zealand	Ian Southley
11/01/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker, Sheila Patch & Bev Alexander
13/01/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
13/01/2005	2	Bird Island, Kaipara Harbour, North Island, New Zealand	Rob Schuckard & Gordon Gorbey
14/01/2005	6	Nelson Haven, South Island, New Zealand	Peter Field
15/01/2005	2	Karaka, Manukau Harbour, South Auckland, New Zealand	Gillian Vaughan
16/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Tony Crocker
25/01/2005	1	Pakawau, Golden Bay, South Island, New Zealand	Chris Petyt
25/01/2005	2	Nelson Haven, South Island, New Zealand	David Melville
27/01/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
28/01/2005	3	Nelson Haven, South Island, New Zealand	Peter Field
29/01/2005	2	Nelson Haven, South Island, New Zealand	David Melville
30/01/2005	1	Ohiwa Harbour, Bay of Plenty, North Island, New Zealand	T. Barnard
1/02/2005	1	Bellis Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook
3/02/2005	1	Invercargill, New Zealand	Phil Battley & Sue Moore
3/02/2005	1	Invercargill, New Zealand	Phil Battley & Sue Moore
3/02/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
from 4-5/02/2005	1	Awarua Bay, Southland, New Zealand	David Melville
6/02/2005	2	Miranda Firth of Thames, New Zealand	Tony Habraken
7/02/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	David Melville & Rob Schuckard
7/02/2005	1	Clifton Beach, Whitford, Auckland, North Island, NZ	Tony Habraken & K. Bond

7/02/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Rob Schuckard & David Melville
7/02/2005	2	Hoopers Inlet (bay), near Dunedin, South Island, New Zealand	Rob Schuckard
7/02/2005	1	Blueskin Bay, 20km north of Dunedin, South Island, New Zealand	Rob Schuckard
8/02/2005	1	Awarua Bay, near Invercargill, South Island, New Zealand	Phil Battley & Sue Moore
8/02/2005	1	Awarua Bay, Southland, New Zealand	Phil Battley & Sue Moore
9/02/2005	1	Wainui Inlet, Golden Bay, South Island, New Zealand	Chris Petyt
12/02/2005	2	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
13/02/2005	1	Mullet Creek, Farewell Spit, South Island, New Zealand	Willie Cook & Dick Veitch
13/02/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
17/02/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
19/02/2005	1	Hoopers Inlet (bay), near Dunedin, South Island, New Zealand	Derek Onley
21/02/2005	2	Nelson Haven, South Island, New Zealand	David Melville
22/02/2005	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville
23/02/2005	1	Motueka Sandspit, near Nelson, New Zealand	David Melville
24/02/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
25/02/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
28/02/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
5/03/2005	2	Bay of Plenty, North Island, New Zealand	Pam Agnew
5/03/2005	1	Hoopers Inlet (bay), near Dunedin, South Island, New Zealand	Derek Onley
6/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
8/03/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
8/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Sheila Petch, Filipe Moniz, Jan Walker & Bev Alexander
9/03/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
9/03/2005	1	Clifton Beach, Whitford, Auckland, North Island, New Zealand	Tony Habraken & K. Bond
10/03/2005	1	Motueka Sandspit, near Nelson, New Zealand	Rob Schuckard
11/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
11/03/2005	2	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Ohiwa Harbour, Bay of Plenty, North Island, New Zealand	J & B Groom
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
13/03/2005	2	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard
13/03/2005	2	Motueka Sandspit, near Nelson, New Zealand	David Melville
13/03/2005	2	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Steve Wood
14/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
14/03/2005	1	Totara Ave, Golden Bay, South Island, New Zealand	David Melville
15/03/2005	1	Nelson Haven, South Island, New Zealand	Rob Schuckard
15/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker & others
15/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
16/03/2005	2	Nelson Haven, South Island, New Zealand	David Melville
17/03/2005	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook, Don Cooper, Julia Melville & David Melville
18/03/2005	1	Pakawau, Golden Bay, South Island, New Zealand	Rob Schuckard
19/03/2005	1	Nelson Haven, South Island, New Zealand	David Melville
19/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Willie Cook
20/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Willie Cook & Henk Heinekamp

21/03/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
22/03/2005	2	Nelson Haven, South Island, New Zealand	David Melville
22/03/2005	2	Nelson Haven, South Island, New Zealand	Peter Field
24/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
26/03/2005	2	Parengarenga Harbour, Far North Cape, North Island, New Zealand	Tony Habraken et al.
26/03/2005	3	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Gillian Vaughan et al.
27/03/2005	1	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Adrian Riegen
27/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
27/03/2005	1	Walker Island, Rangaunu Harbour, Far North, New Zealand	Tony Habraken & Chris Matthews
31/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
2/04/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
2/04/2005	2	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
7/04/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
9/04/2005	3	Karaka, Manukau Harbour, South Auckland, New Zealand	T. Habraken, G. Eller & K. Bond
10/04/2005	1	Papakanui Spit, Kaipara Harbour, Auckland, New Zealand	Gwen Pulham et al
11/04/2005	1	Motueka Sandspit, near Nelson, New Zealand	David Melville
11/04/2005	1	Clifton Beach, Whitford, Auckland, North Island, New Zealand	B. Keeley & M. Foreham
24/04/2005	1	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
30/04/2005	1	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
4/05/2005	1	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Ted Wnorowski
8/05/2005	1	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
23/05/2005	1	New Brighton Spit, Christchurch, New Zealand	Colin Reid
24/05/2005	1	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
25/06/2005	3	Walker Island, Kaipara Harbour, New Zealand	Adrian Riegen

In the past year a massive 322 overseas sightings and 24 sightings in Australia were reported. The overseas records were again dominated by the large number of birds that had moved to New Zealand (225). But another 54 were reported from Alaska. The majority of these were in southwest Alaska in late August and early September 2004 as birds gathered prior to their 11000 km trans-Pacific non-stop migration to the northern coast of Australia and New Zealand. One sighting also occurred of a bird on northward migration to Alaska which had stopped off at the Pribilof Islands in mid May. But best of all was the sighting of a Bar-tailed Godwit on its nesting territory close to the north coast of Alaska near Deadhorse, Prudhoe Bay. This is far further east in Alaska than any previous Bar-tailed Godwit from Australia has been reported – at a longitude of 149deg W, some 13032 km northeast of Victoria. This is the second greatest distance moved by any marked wader, of any species, from Victoria (the record is 13069 km northwest, for a Curlew Sandpiper).

There was also an increased number of reports of flagged Bar-tailed Godwits in Korea, mostly obtained from two excellent websites maintained by a Korean photographer and a Korean ornithologist. These records further emphasize the extreme importance of the west coast of Korea, part of the Yellow Sea, as a migratory stopover for waders from Australia en route to/from their arctic breeding grounds. If the threatened completion of the sea wall at Saemangeum goes ahead then there are likely to be serious adverse affects on Australian waders, including those that visit Victoria.

Bar-tailed Godwit sightings within Australia partly reflect arrivals on southward migration in Queensland and passage down the east coast of the continent towards Victoria. However the list also contains some birds which appear to have moved their non-breeding area from Victoria to Queensland, NSW, Tasmania and even the north coast of Western Australia.

## Eastern Curlew

### Australian

24/07/2004	1	Manly Boat Harbour, Moreton Bay, QLD	Sandra Harding & David Milton
25/07/2004	1	Port of Brisbane, QLD	David Edwards, Jim & Ivell Whyte
27/08/2004	1	Mathieson Homestead, near Hervey Bay, QLD	John Knight
4/10/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
5/10/2004	1	Mathieson Homestead, near Hervey Bay, QLD	John Knight

### Overseas

16/03/2002	1	Sone Estuary & Tidal Flat, Kitakyushu, Fukuoke, Japan	Masafumi Takeshita
3/04/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Mr BAI Qing Quan
13/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Wang Tao

Fewer Eastern Curlew have been flagged in recent years compared to the early to mid 1990s when particular emphasis was given to this species. A total of 524 have been flagged over the years, and with the Eastern Curlew being a long-lived species, it may not be surprising therefore that flag sightings continue to be reported, including three from overseas. These came from western Japan and the Chinese part of the Yellow Sea, in the relatively narrow migration corridor used by the Eastern Curlew moving between Australia and their breeding grounds in south eastern Siberia.

The five records in Qld/NSW illustrate the typical coastal migration route used by Eastern Curlew on their southward return journey to Victoria. Note that two of the sightings, in different parts of Moreton Bay, occurred in late July. These could well have been early birds returning from the breeding grounds as the first of these usually reach Victoria before the end of July.

## Common Greenshank

### Overseas

26/04/2005	1	Pei-Men, Tainan County, Taiwan ( China)	Chung-Yu Chiang
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This is the first flag sighting of a Greenshank reported away from the flagging areas. This is amazing considering 419 have been flagged and that the average flag sighting rate for Victorian waders overall is about 2%. It is also surprising because a Greenshank is a fairly obvious bird in the field and wading around in the water it usually still shows its tibia, on which the flag is placed. It may just be that this low reporting rate is because the habitats in Asia through which Greenshank migrate are not those well visited and watched by ornithologists and bird watchers.

## Terek Sandpiper

### Overseas

10/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Wang Tao & Yuan Xiao
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This sighting is the first from mainland China. Previous overseas sightings are one from Hong Kong (China) and three from Korea.

## Ruddy Turnstone

### Australian

24/09/2004	1	Penrhyn Inlet in Botany Bay, NSW	Rod Gardner
19/03/2005	1	Lord Howe Island, NSW	Mike Newman
25/04/2005	1	Blackfellows Caves 6kmse Carpenters Rock, SA	Maureen Christie & Lorraine Moore
26/07/2005	1	Beaches, Crab Ck Rd, Roebuck Bay, Broome, WA	Stuart Young



## Overseas

10/08/2003	1	Yoshino River Estuary, Tokushima, Japan	Tadashi Kasai
1/08/2004	1	Saemangeum, Korea	Thomas Heinicke, Jurgen Steudtner, & Nial Moores
2/08/2004	1	Saemangeum, Korea	Thomas Heinicke, Jurgen Steudtner, & Nial Moores
26/04/2005	1	Ersari, near Hongsung, Korea	Kyeng-sook Kwan
22/08/2004	1	Cheng-Hsi-Li, Tainan City, Taiwan (China)	Kun-Hsien Hsu
29/04/2005	1	Wang-Kung, ChangHwa County, Taiwan (China)	Yueh-Ying Shih
3/05/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Chung-Yu Chiang
4/05/2005	1	HsinHsing, ChangHwa County, Taiwan (China)	Chung-Yu Chiang
27/02/2005	1	Clark's Bay, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
12/03/2005	1	Kaikoura, South Island, New Zealand	Nick Allen
13/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard

This is another nice crop of flag sightings, all from areas where there have been previous records of Victorian flagged birds. Taiwan is clearly an important migratory stopover area and sightings from there are helped by the birds roosting on a concrete wall in fishponds where their flags can be readily observed. The now well documented "southward migration" of some Turnstones through Victoria on their way to their non-breeding areas in New Zealand is illustrated by three further sightings there.

The report on Lord Howe Island is the third. The timing of the reports is such that all could have been birds on migration to/from Victoria. But it is also possible that a Victorian flagged bird has permanently changed its non-breeding area to Lord Howe Island.

## Great Knot

### Australian

12/07/2003	1	80 Mile Beach, WA	Chris Hassell & Adrian Boyle
18/09/2004	1	Toorbul, near Bribie Island, QLD	Dez Wells
16/10/2004	1	Toorbul, near Bribie Island, QLD	Judy Caughley, & Barb Dickson
5/11/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Tom Clarke
14/11/2004	1	Fishermans Island, Moreton Bay, QLD	David Edwards et al
15/01/2005	1	Buffalo Creek Beach, Darwin, NT	Arthur & Sheryl Keates
12/02/2005	1	between Lee Pt. & Buffalo Ck. Beach, Darwin, NT	Arthur & Sheryl Keates & Stephen Garnett

### Overseas

26/04/2005	1	Ersari, near Hongsung, Korea	In-sook Ji
13/05/2005	3	Yalu Jiang National Nature Reserve, China (mainland)	Cao Lei & Wang Tao
5/04/2004	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
6/04/2004	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
8/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader

Although only 310 Great Knot have been flagged in Victoria there have been an amazing 24 overseas sightings reported and 68 elsewhere in Australia. This corresponds to a "resighting rate" of close to 30%. It is not clear why this species should produce such a large number of flag reports. The overseas reports came from the usual areas of Hong Kong (China) and mainland China, and Korea – the same areas most frequented by Great Knots from north-western Australia. The sightings within Australia mostly relate to birds that have probably changed their non-breeding location away from Victoria. Most surprising of these was one which was seen at 80 Mile Beach in NW Australia on 12<sup>th</sup> July. However since the timing indicates this would have been an immature bird it could possibly have been a bird which had moved north from Victoria for its "winter holidays", and was intending to return again afterwards.

## Red Knot

### Australian

1/10/2003	1	Tuross Estuary, NSW	john liney
5/09/2004	2	Dykes in Kooragang Island, Newcastle, NSW	Allan Richardson
9/09/2004	2	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer & Ann Lindsey
16/09/2004	3	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer & Ann Lindsey
22/09/2004	1	Mathieson Homestead, near Hervey Bay, QLD	John Knight
3/10/2004	3	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
4/10/2004	2	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
6/10/2004	2	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer
6/10/2004	1	Penrhyn Inlet in Botany Bay, NSW	Rod Gardner
6/10/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Jenny Spencer
9/10/2004	1	Penrhyn Inlet in Botany Bay, NSW	Phil Straw et al.
9/10/2004	2	Brou Lake, north of Narooma, NSW	Mike Crowley
9/10/2004	2	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer
10/10/2004	1	Shoalhaven Rivermouth, Shoalhaven Heads, NSW	Graham Barwell
12/10/2004	1	Penrhyn Inlet in Botany Bay, NSW	Mark Whittaker
16/10/2004	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Hunter Bird Observers Club
16/10/2004	2	Penrhyn Inlet in Botany Bay, NSW	Tun-Pin Ong
22/10/2004	1	Penrhyn Road Estuary, Botany Bay, NSW	Rod Gardner
13/11/2004	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Hunter Bird Observers Club
15/11/2004	1	Boat Harbour, Carnarvon, WA	Les George
15/11/2004	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer & Ann Lindsey
25/11/2004	1	80 Mile Beach, WA	Chris Hassell
1/12/2004	2	Broome, WA	Chris Hassell & Adrian Boyle
12/12/2004	2	Five Islets, Robbins Island, north-western, Tas	Richard Ashby & Mark Brakey
12/12/2004	3	Bird Point, Robbins Island, north-western, Tas	R. & C. Donaghey, F. Spruzen, & P. Porteus
15/01/2005	1	Buffalo Creek Beach, Darwin, NT	Arthur & Sheryl Keates
13/02/2005	1	between Lee Pt. & Buffalo Ck. Beach, Darwin, NT	Catherine McFadden

### Overseas

14/08/2004	1	Moroshechnaya Estuary, west central Kamchatka, Russia	John Geale & Ken Gosbell
16/08/2004	1	Moroshechnaya Estuary, west central Kamchatka, Russia	Yuri Gerasimov & Steve Kendall
12/04/2002	1	Gan-No-Su, Higashi-Ku, Fukuoka-Shi, Japan	Kazuhisa Oue
14/04/2002	1	Otome Beach, Usa-shi, Oita, Japan	Hiroshi TANAKA
14/04/2002	1	Wajiro Tidal Flat, Fukuoka, Kyushu, Japan	(unknown)
21/04/2002	1	Wajiro Tidal Flat, Fukuoka, Kyushu, Japan	Masataka Hanada
2/08/2004	1	Saemangeum, Korea	Thomas Heinicke, Jurgen Steudtner, & Nial Moores
2/05/2004	1	south of Tianjin Haibin Yuchang, Tianjin, China (mainland)	Paul Holt
4/05/2004	5	Zuidong, near Tanshang, Heibei Province, China (mainland)	Yang Hong Yan
21/05/2004	1	Zuidong, near Tanshang, Heibei Province, China (mainland)	Yang Hong Yan
14/04/2005	1	Chongming Island, Shanghai, China (mainland)	Adrian Boyle
14/04/2004	1	Fang-Yuan, Changhua County, Taiwan (China)	Chia-Yang Tsai
6/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
10/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Chih-Wei Yeh
11/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
12/04/2005	2	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
25/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
26/04/2005	1	Pa-Chang Estuary, Tainan County, Taiwan (China)	Chung-Yu Chiang
24/02/1997	1	Houhora Harbour, far North, North Island, New Zealand	R. Pearce
19/07/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Tony Habraken
21/10/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Bruce Keeley
10/12/2003	1	Miranda, Firth of Thames, South Auckland, New Zealand	Tony Wilson

18/09/2004	3	Parengarenga Harbour, Far North Cape, North Island, New Zealand	Tony Habraken et al.
19/09/2004	1	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
25/09/2004	1	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
26/09/2004	7	Karaka, Manukau Harbour, South Auckland, New Zealand	Gillian Vaughan & Ian Southey
1/10/2004	3	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Gwen Pulham & Gordon Goreby
2/10/2004	2	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
6/10/2004	1	Manawatu Estuary, Manawatu, North Island, New Zealand	John Geale
7/10/2004	2	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
9/10/2004	1	Kiwi Esplanade, Manukau Harbour, New Zealand	Ted Wnorowski
11/10/2004	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville & Willie Cook
13/10/2004	2	Big Sand Island, Kaipara Harbour, North Island, New Zealand	Phil Battley
16/10/2004	2	Karaka, Manukau Harbour, South Auckland, New Zealand	David Lawrie et al.
17/10/2004	2	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
18/10/2004	4	Big Sand Island, Kaipara Harbour, North Island, New Zealand	Gavin Grant et al.
29/10/2004	2	Manawatu Estuary, Manawatu, North Island, New Zealand	Sav Saville
7/11/2004	2	Whitford, Auckland, North Island, New Zealand	Will Perry
9/11/2004	3	Kiwi Esplanade, Manukau Harbour, New Zealand	Phil Battley
11/11/2004	4	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook, & Don Cooper
13/11/2004	2	Waikiri Creek, Kaipara, New Zealand	T. Moore
13/11/2004	1	Papakanui Spit, Kaipara Harbour, Auckland, New Zealand	Gillian Vaughan
13/11/2004	1	Walker Island, Kaipara Harbour, New Zealand	Ted Wnorowski
14/11/2004	4	Karaka, Manukau Harbour, South Auckland, New Zealand	David Lawrie
14/11/2004	11	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Ted Wnorowski
14/11/2004	4	Mullet Creek, Farewell Spit, South Island, New Zealand	Willie Cook, & Steve Wood
14/11/2004	3	Mullet Creek, Farewell Spit, South Island, New Zealand	Willie Cook, & Steve Wood
14/11/2004	15	Bush End Point, Farewell Spit, South Island, New Zealand	Willie Cook, & Rob Schuckard
14/11/2004	2	Bush End Point, Farewell Spit, South Island, New Zealand	Willie Cook, & Rob Schuckard
19/11/2004	3	Miranda, Firth of Thames, South Auckland, New Zealand	John Geale
21/11/2004	1	Miranda, Firth of Thames, South Auckland, New Zealand	David Lawrie
27/11/2004	2	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
29/11/2004	1	Clifton Beach, Whitford, Auckland, North Island, New Zealand	Bruce Keeley
9/12/2004	1	Te Whanga Lagoon, Waitangi, Chatham Island, New Zealand	Colin Miskelly (Dept. of Conservation)
14/12/2004	2	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Gwen Pulham, Gordon Gorbey, John Simmons
19/12/2004	1	Maketu Bay of Plenty, North Island, New Zealand	Tim Barnard
19/12/2004	1	Little Waihi, Bay of Plenty, North Island, New Zealand	Tim Barnard
20/12/2004	3	Manawatu Estuary, Manawatu, North Island, New Zealand	Sav Saville
26/12/2004	4	Manawatu Estuary, Manawatu, North Island, New Zealand	Sav Saville
27/12/2004	5	Parengarenga Harbour, Far North Cape, North Island, New Zealand	Ray Pierce
28/12/2004	1	Motueka Sandspit, near Nelson, New Zealand	Colin Miskelly (Dept. of Conservation)
2/01/2005	1	Little Waihi, Bay of Plenty, North Island, New Zealand	Tim Barnard
2/01/2005	1	Motueka Sandspit, near Nelson, New Zealand	David Melville
3/01/2005	10	Kiwi Esplanade, Manukau Harbour, New Zealand	Gwen Pulham & R. Clough
3/01/2005	3	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Gwen Pulham & R. Clough
3/01/2005	2	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	David Melville
4/01/2005	1	Mangere Sewage Ponds, Manukau Harbour, New Zealand	Roger McNeill
5/01/2005	15	Jordan's Farm, SE Kaipara Harbour, Auckland, New Zealand	Gwen Pulham & Simon Chamberlin
11/01/2005	8	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
13/01/2005	4	Bird Island, Kaipara Harbour, North Island, New Zealand	Rob Schuckard & Gordon Gorbey
15/01/2005	7	Karaka, Manukau Harbour, South Auckland, New Zealand	Gillian Vaughan

30/01/2005	1	Manawatu Estuary, Manawatu, North Island, New Zealand	Ian Saville
1/02/2005	2	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville
2/02/2005	3	Kiwi Esplanade, Manukau Harbour, New Zealand	Mike Wilcox
6/02/2005	7	Miranda Firth of Thames, New Zealand	Tony Habraken
7/02/2005	11	Clifton Bay, Auckland, New Zealand	Tony Habraken & K. Bond
8/02/2005	4	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook
8/02/2005	3	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville
8/02/2005	1	Awarua Bay, Southland, New Zealand	Phil Battley & Sue Moore
8/02/2005	1	Awarua Bay, near Invercargill, South Island, New Zealand	Phil Battley & Sue Moore
12/02/2005	1	Jordan's Farm, SE Kaipara Harbour, Auckland, New Zealand	Adrian Riegen
13/02/2005	1	Rabbit Island, Waimea Inlet, near Nelson, New Zealand	David Melville
13/02/2005	1	Jordan's Farm, SE Kaipara Harbour, Auckland, New Zealand	Tony Habraken
13/02/2005	4	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
19/02/2005	5	Clark's Bay, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
22/02/2005	3	Bells Is, Waimea Inlet, near Nelson, New Zealand	David Melville
23/02/2005	2	Motueka Sandspit, near Nelson, New Zealand	David Melville
27/02/2005	16	Clark's Bay, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
4/03/2005	1	Waimea Inlet, Mapua Estuary, Nelson, New Zealand	David Melville
5/03/2005	1	Bay of Plenty, North Island, New Zealand	Pam Agnew
6/03/2005	2	Miranda Firth of Thames, New Zealand	Will Perry & Adrian Riegen
8/03/2005	1	Maketu Bay of Plenty, North Island, New Zealand	T. Barnard
9/03/2005	13	Clifton Bay, Auckland, New Zealand	Tony Habraken & K. Bond
10/03/2005	1	Motueka Sandspit, near Nelson, New Zealand	Rob Schuckard
11/03/2005	10	Kaipara Harbour, New Zealand	G. Puiham & J. Simmons
11/03/2005	1	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
11/03/2005	1	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	1	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
12/03/2005	8	Karaka, Manukau Harbour, South Auckland, New Zealand	D. Lawrie, I. Southey & T. Habraken
13/03/2005	1	Motueka Sandspit, near Nelson, New Zealand	David Melville
13/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard
13/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard
13/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard
13/03/2005	3	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	Steve Wood
13/03/2005	3	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook
14/03/2005	1	Farewell Spit, Gobi, near Nelson, South Island, New Zealand	David Melville
17/03/2005	3	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook, Don Cooper, Julia Melville & David Melville
18/03/2005	3	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
19/03/2005	2	Farewell Spit, Bushend Point, South Island, New Zealand	Rob Schuckard
19/03/2005	3	Farewell Spit, Bushend Point, South Island, New Zealand	Willie Cook
19/03/2005	2	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
20/03/2005	2	Farewell Spit, Stockyard, South Island, New Zealand	Don Cooper
20/03/2005	1	Little Waihi, Bay of Plenty, North Island, New Zealand	T. Barnard
26/03/2005	9	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Gillian Vaughan et al.
27/03/2005	5	Walker Island, Rangaunu Harbour, Far North, New Zealand	Tony Habraken & Chris Matthews

27/03/2005	3	Kowhai Beach - Hohoura, Far North, New Zealand	Tony Habraken
27/03/2005	1	Tapora Wildlife Refuge, South Kaipara Harbour, New Zealand	Adrian Riegen
27/03/2005	3	Rangaunu Harbour, Far North, North Island, New Zealand	Tony Habraken
2/04/2005	5	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
9/04/2005	3	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
24/04/2005	5	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
30/04/2005	3	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
8/05/2005	1	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
24/05/2005	11	Karaka, Manukau Harbour, South Auckland, New Zealand	Tony Habraken
7/06/2005	2	Karaka, Manukau Harbour, South Auckland, New Zealand	Ian Southley

With 379 overseas flag-sighting reports and another 42 coming from within Australia the Red Knot heads the list for the past year. Even more than for Bar-tailed Godwit, the flag reports are dominated by sightings in New Zealand. The massive total of 356 there reflects in part the success the VWSG has had in recent years in catching Red Knot, particularly immatures in the winter months – these being the birds which move to New Zealand in later years and make it their permanent non-breeding area. The high number of sightings is also the result of the highly skilled and enthusiastic team of wader watchers/flag sighters in New Zealand.

Other overseas sightings were also important with the eight in mainland China, eight in Taiwan (China) and one in Korea, doubling the previous totals of flagged Red Knot in these countries. The four reported from Japan were the first for that country. Even more pleasing were the sightings in Kamchatka in eastern Siberia. Ken Gosbell, the AWSG secretary/treasurer, was a member of the expedition that sighted these birds. They are the strongest flagging/banding indication yet that the *rogersi* subspecies of the Red Knot which forms the main population in eastern Australia and New Zealand probably comes from the breeding areas in Chukotka, to the north of Kamchatka.

The wide range of sightings of flagged Red Knot within Australia – all states except SA and ACT – indicates how flexible the movements of this species can be. As in most other species a number of flag sightings indicate birds that have probably changed their non-breeding area away from Victoria. Others however indicate migration routes within Australia of birds on passage to/from Victoria. Perhaps the most surprising of all of these was the sighting of a bird on 15<sup>th</sup> November at Carnarvon in the far northwest of WA.

## Sanderling

### Australian

12/12/2004	4	Discovery Bay, Vic	Martin Schulz
12/12/2004	1	Bird Point, Robbins Island, northwestern, Tas	R. & C. Donaghey, F. Spruzen, & P. Porteus
18/02/2005	1	Iron Prince Point, near Cape Howe, Vic	Martin Schulz
19/02/2005	1	Nadgee Lake beach, N of Cape Howe, NSW	Martin Schulz
14/03/2005	4	Picaninne Ponds Beach, Picaninne NP, SA	Clive Minton, Australasian Wader Studies Group
29/03/2005	2	Brown Bay, 15km E of Port MacDonnell, SA	Maureen Christie
22/04/2005	1	Stony Point, Port MacDonnell, SA	Maureen Christie & Lorraine Moore
16/05/2005	1	Nene Valley, SA	Maureen Christie & Lorraine Moore

### Overseas

6/08/2002	1	Surigane-beach, Shirako, Chiba, Japan, Japan	Kazuyuki Kuwabara
12/08/2002	1	Kujyukuri beach, Sousa-gun, Chiba, Japan, Japan	Toshikazu Saito
14/08/2002	1	Shinkawa Estuary, Otaru, Hokkaido, Japan	Shinroku Shibuya
24/08/2002	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Kenzo Tomiya
31/08/2002	2	Nemoto-beach, Shirahama, Chiba, Japan, Japan	kenichiro Fujita
8/08/2004	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Masamichi Ito
1/09/2004	2	Hasaki Town, Kashima-gun, Ibaraki, Chiba, Japan	Tsutomu Nakata

5/09/2004	1	Nakdong Estuary, near Busan, Korea	Chungrok Park, Wetlands & Birds Korea
21/05/2004	1	Zuidong, near Tanshang, Hebei Province, China (mainland)	Yang Hong Yan
14/05/2005	1	Zuidong, near Tanshang, Hebei Province, China (mainland)	Cao Lei
24/04/2005	1	Mai Po Marshes, Hong Kong (China)	Cheung Mok Jose Alberto
5/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung

Japan, as usual, is the dominant location from which most overseas sightings of Sanderling were reported. Most of these relate to southward migration. The fact that the two sightings in Hong Kong (China) and two in mainland China were birds on northward migration suggests that the northward migration route may be rather further to the west than that used on southward migration.

The sightings within Australia mostly relate to birds that have changed their non-breeding location. Sanderlings have been found to move between different regions of the coast more frequently than any other migratory wader species that visits Australia.

## Red-necked Stint

### Australian

12/03/2004	1	Gerloff Bay, Carpenter Rocks, SA	Lorraine Moore
8/05/2004	1	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie
26/05/2004	2	Brown Bay, 15km E of Port MacDonnell, SA	Maureen Christie & Ian Mitchener
5/06/2004	1	French Point, Brown Bay, Port MacDonnell, SA	Maureen Christie
5/06/2004	1	Danger Point, Brown Bay, near Port MacDonnell, SA	Maureen Christie
7/06/2004	2	Lake Eliza, southeast of Robe, SA	Maureen Christie & Sue Black
5/07/2004	1	Paranki Lagoon (Lake Nadzab), near Kingston, SA	Maureen Christie
5/07/2004	1	Paranki Lagoon (Lake Nadzab), near Kingston, SA	Maureen Christie
13/07/2004	1	Lauderdale Mud Flats, near Hobart, Tas	Doug Watkins, Wetlands International - Oceania
4/09/2004	1	Nightcliff Rocks, Darwin, NT	Arthur & Sheryl Keates
10/09/2004	1	Manly Boat Harbour, Moreton Bay, QLD	Colin Reid
10/09/2004	1	Lake Wollumboola, near Culburra, NSW	Joy Pegler
14/09/2004	2	Livingstones, near Carpenter Rocks, SA	Maureen Christie
17/09/2004	1	Coral Bay, WA	Chris Drysdale
19/09/2004	1	Lake Illawarra Entrance, Wollongong, NSW	Chris Brandis
23/09/2004	1	Manly Boat Harbour, Moreton Bay, QLD	Dave Houghton
25/09/2004	2	Pelican Point, near Carpenter Rocks, SA	Maureen Christie
26/09/2004	1	Eagles Roost, Roebuck Bay, Broome, SA	Chris Hassell
30/09/2004	1	Kidney Bean Clay Pan, near Broome, WA	Tim Gale & Lisa Collins
30/09/2004	1	Karumba Point, Gulf of Carpentaria, QLD	Christopher Timewell
1/10/2004	2	Paranki Lagoon (Lake Nadzab), near Kingston, SA	Maureen Christie
10/10/2004	1	Lauderdale Beach, Ralphs Bay, Hobart, Tas	Naoko Takeuchi
10/10/2004	1	Shoalhaven Rivermouth, Shoalhaven Heads, NSW	Graham Barwell
16/10/2004	2	Pelican Point, near Carpenter Rocks, SA	Maureen Christie
18/10/2004	1	Shipwreck Point, Perkins Island, Tas	Peter & Hazel Britton
28/10/2004	1	Nene Valley, SA	Maureen Christie
2/11/2004	1	Quarry Beach, Broome, WA	Tim Gale & Lisa Collins
21/11/2004	1	Pelican Point, near Carpenter Rocks, SA	Maureen Christie
1/12/2004	2	Broome, WA	Chris Hassell & Adrian Boyle
2/12/2004	1	80 Mile Beach, WA	Adrian Boyle et al
15/12/2004	1	Shipwreck Point, Perkins Island, Tas	Peter & Hazel Britton
30/12/2004	1	Lake George, near Beachport, SA	Maureen Christie
6/01/2005	1	Manly Harbour, Moreton Bay, near Brisbane, QLD	Robert & Lorelle Black
22/01/2005	1	Manly Harbour, Moreton Bay, near Brisbane, QLD	Sandra Harding, David Milton, Barry & Joanna Morgan

30/01/2005	1	Windang Beach, NSW	Graham Barwell
1/02/2005	2	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie
5/02/2005	1	Needles, The Coorong, SA	Inka Veltheim & David Close
5/02/2005	1	Policeman Point, The Coorong, SA	Birgita Hansen & Alice Ewing
5/02/2005	2	Hack Point, The Coorong, SA	Ken Gosbell & Ros Jessop
6/02/2005	2	Needles, The Coorong, SA	Ken Gosbell & Birgita Hansen
6/02/2005	2	Murray River Mouth, Coorong, SA	Ros Jessop & Peter Collins
10/02/2005	1	Shipwreck Point, Perkins Island, Tas	Jim Hunter, Peter Atkinson, Alastair Richardson & John Hunter
26/02/2005	1	Panka Point, The Coorong, SA	Margaret Dadd, Coorong Nature Tours
6/03/2005	1	Tanami Mine, 650km NW of Alice Springs, NT	Roger Potts
14/03/2005	1	Site 9, 7 Mile Road, North Coorong, SA	Margaret Dadd, Coorong Nature Tours
15/03/2005	2	Coorong National Park, SA	Margaret & David Dadd
19/03/2005	3	Lake Martin, 40km N of Colac, Vic	Chris Doughty
24/03/2005	1	Penrice Salfields, SA	John Seymour
25/03/2005	1	Penrice Salfields, SA	John Seymour
27/03/2005	1	Lake Ranfurly, near Mildura, VIC	Chris Doughty
29/03/2005	1	Coorong National Park, SA	Margaret & David Dadd
3/04/2005	1	Kanidal Beach, 12km west of Eyre BO, WA	Eyre Bird Observatory (volunteer caretaker)
4/04/2005	2	Kanidal Beach, 12km west of Eyre BO, WA	Eyre Bird Observatory (volunteer caretaker)
5/04/2005	1	Kanidal Beach, 12km west of Eyre BO, WA	Eyre Bird Observatory (volunteer caretaker)
5/04/2005	1	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie
9/04/2005	1	Martins Tank Lake, Yalgorup National Park, WA	Bill Russell
12/04/2005	1	Quarry Beach, Broome, WA	Mark Swann, Kimberley Birdwatching
16/04/2005	1	Brown Bay, 15km E of Port MacDonnell, SA	Nhill Bird Observers Club & Maureen Christie
20/04/2005	1	Lake Champion, 55km East of Broome, WA	Mark Swann, Kimberley Birdwatching
24/04/2005	1	Black Point Reef, east coast of Yorke Peninsula, SA	Margie Tiller
25/04/2005	2	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie & Lorraine Moore
25/04/2005	1	Pelican Point, near Carpenter Rocks, SA	Maureen Christie & Lorraine Moore
25/04/2005	1	Black Point Reef, east coast of Yorke Peninsula, SA	Margie Tiller
26/04/2005	3	Nairns (Coodanup), near Mandurah, WA	Alan Collins
26/04/2005	1	Nene Valley, SA	Maureen Christie
26/04/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Ricki Coughlan
28/04/2005	3	Wader Beach, Roebuck Bay, Broome, WA	Chris Sanderson BBO (assistant warden)
29/04/2005	2	Martins Tank Lake, Yalgorup National Park, WA	Bill Russell
2/05/2005	2	Broome Sewage Works, WA	Mark Swann, Kimberley Birdwatching
11/05/2005	1	Nene Valley, SA	Maureen Christie & Lorraine Moore
14/05/2005	2	Wader Beach, Roebuck Bay, Broome, WA	Helen Macarthur, Sam Bibby & Chris Hassell
15/05/2005	1	Tanami Mine, 650km NW of Alice Springs, NT	Roger Potts
16/05/2005	3	Tanami Mine, 650km NW of Alice Springs, NT	Roger Potts
20/05/2005	4	Wader Beach, Roebuck Bay, Broome, WA	Chris Hassell & various other observers
21/05/2005	2	Wader Beach, Roebuck Bay, Broome, WA	Chris Hassell & various other observers
4/06/2005	1	Quarry Beach, Broome, WA	Belinda Forbes

#### Overseas

9/06/2004	1	Emma Bay, 5km NNE of Provideniya settlement, Chukotsk, Russia	Eugeniy Syroechovski, Jr.
22/07/2004	1	Bayaan Nuur Lake, Mongolia	Mark Thomas
26/07/2004	2	Hun haar Shummar Nuur Lakes ("Three Lakes"), Mongolia	Mark Thomas
31/07/2004	1	An unnamed lake, Mongolia	Mark Thomas
31/07/2004	1	An unnamed lake, Mongolia	Mark Thomas

2/08/2004	1	Galuut Lake, Mongolia	Mark Thomas
3/08/2004	1	Khaichin Tsagaan Lake, Mongolia	Mark Thomas
10/07/2002	1	Yatsu Tidal Flat, Japan	Sei Akutsu
4/08/2002	1	Osaru River, Nagawa town, Date city, Hokkaido, Japan	Morio Shinohara
13/08/2003	1	Rokujo Tidal Flat, Toyohashi, Japan	Naoyuki Takeo
23/05/2004	1	Lake Komuke, Monbetsu, Hokkaido, Japan	Kazuhiro Oodate
19/07/2004	1	Mouth of Kurobe River, Toyama, Japan	Takashi Hayakawa
19/07/2004	1	Mouth of Tama River, Kawasaki, Kanagawa, Japan	Hiroshi Yukawa
9/08/2004	1	Reclaimed ground in Hakata Bay, Fukuoka, Fukuoka, Japan, Japan	Satoru Matsumoto
22/08/2004	1	Tahara, Japan	Hideo Itamil
13/08/2004	1	Yeongjong Island, Incheon, Korea	Thomas Heinicke, & Jurgen Steudtner
29/08/2002	6	Tanggu, Tianjin, China (mainland)	Paul Holt
30/08/2002	3	Tanggu, Tianjin, China (mainland)	Paul Holt
31/08/2002	3	Tanggu, Tianjin, China (mainland)	Paul Holt
10/05/2004	1	Baliqiao, Leting district, Hebei, China (mainland)	Paul Holt
21/05/2004	1	Zuidong, near Tanshang, Hebei Province, China (mainland)	Yang Hong Yan
3/09/2004	5	near Tanggu, Tianjin, China (mainland)	Paul Holt
4/09/2004	6	near Tanggu, Tianjin, China (mainland)	Paul Holt
5/09/2004	4	near Tanggu, Tianjin, China (mainland)	Paul Holt
6/09/2004	6	near Tanggu, Tianjin, China (mainland)	Paul Holt
7/09/2004	1	near Tanggu, Tianjin, China (mainland)	Paul Holt
18/09/2004	3	near Tanggu, Tianjin, China (mainland)	Paul Holt
5/05/2005	2	near Tanggu, Tianjin, China (mainland)	Paul Holt
5/05/2005	1	near Jiao-Jiang estuary, Zhe-Jiang County, China (mainland)	Wang, Xi-Min & Zhu-ying
7/05/2005	1	near Jiao-Jiang estuary, Zhe-Jiang County, China (mainland)	Wang, Xi-Min & Zhu-ying
8/05/2005	1	Beidaihe, Qinhuangdao City, Hebei Province, China (mainland)	Paul Holt
10/05/2005	1	Bi Hai Yu Chang, between Qilihai & Baliqiao, Leting, Hebei, China (mainland)	Paul Holt
14/05/2005	1	Zuidong, near Tanshang, Hebei Province, China (mainland)	Cao Lei
15/05/2005	2	Beipu Salt Works, China (mainland)	Cao Lei & Ken Gosbell
25/04/2004	1	Han-Pao, Changhua County, Taiwan (China)	Chao-Chuo Huang
4/08/2004	1	Szu-Tsao, Tainan city, Taiwan (China)	Cheer
5/08/2004	1	Tai-Hsi, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
5/08/2004	2	HsinHsing, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
8/08/2004	1	Han-Bou, ChangHwa County, Taiwan (China)	Ming-Tsai Hsu
22/08/2004	2	Cheng-Hsi-Li, Tainan City, Taiwan (China)	Kun-Hsien Hsu
2/09/2004	2	Ta-Cheng, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
12/09/2004	1	Chi-Ku, Tainan County, Taiwan (China)	Hsin-Hsuen Li
23/04/2005	1	Ma-Gon, Peng-Hu County, Taiwan (China)	Li-Chao Chou
9/05/2005	1	Tayuan, Taoyuan County, Taiwan (China)	Chung-Yu Chiang
13/05/2005	1	Tai-ping Estuary, Taitung county, Taiwan (China))	Chien-Ming Chu
15/05/2005	1	Wu-Ku, Taipei County, Taiwan (China))	Hsiu-li Lin
15/05/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Yu-Kun Wang
16/05/2005	2	Chinshan, Taipei County, Taiwan (China)	Wen-Yin Huang
21/05/2005	1	Tayuan, Taoyuan County, Taiwan (China)	Kuo-Wei Wu
26/05/2005	2	Tai-Hsi, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
8/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader
15/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader
18/04/2004	2	Mai Po Marshes, Hong Kong (China)	Paul Leader
13/04/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
24/04/2005	1	Mai Po Marshes, Hong Kong (China)	Cheung Mok Jose Alberto
25/04/2005	2	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
30/04/2005	2	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
30/04/2005	1	Mai Po, Hong Kong (China)	John Allcock



5/05/2005	2	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
7/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
8/05/2005	2	Mai Po, Hong Kong (China)	Adrian Boyle
8/05/2005	1	Mai Po, Hong Kong (China)	John Allcock
9/05/2005	4	Mai Po, Hong Kong (China)	Adrian Boyle
10/05/2005	3	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
10/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
10/05/2005	3	Mai Po, Hong Kong (China)	Adrian Boyle
12/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
15/05/2005	2	Mai Po Marshes, Hong Kong (China)	Cheung Mok Jose Alberto
15/05/2005	1	Mai Po Marshes, Hong Kong (China)	Cheung Mok Jose Alberto
23/05/2005	2	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
23/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
27/05/2005	1	Mai Po Marshes, Hong Kong (China)	Neil Fifer
27/05/2005	1	Mai Po Marshes, Hong Kong (China)	Neil Fifer
31/05/2005	1	Mai Po Marshes, Hong Kong (China)	Neil Fifer
31/05/2005	1	Mai Po Marshes, Hong Kong (China)	Neil Fifer
7/06/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
18/05/2004	1	Bruit Island National Park, in the Rajang Delta, 150 km ne of Kuching, Daro District, Sixth Division, Sarawak, Malaysia	Mizutani Akira
11/05/2005	1	Bruit Island National Park, in the Rajang Delta, 150 km ne of Kuching, Daro District, Sixth Division, Sarawak, Malaysia	Mizutani Akira
20/04/2005	2	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo & Anak Burung
22/04/2005	3	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo
23/04/2005	3	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo
24/04/2005	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo
4/05/2005	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo & Anak Burung
8/05/2005	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo
9/01/2005	1	Awarua Bay, Southland, New Zealand	Ian Southley

Another massive list of wonderful leg flag sightings including 149 overseas and a further 105 in Australia.

Compared with previous years there was a big boost in the number of sightings in mainland China (57 compared with 16 in total from all previous years). Paul Holt, who leads bird tours to China each year, reported many of these. He saw flagged birds in May, and especially during late August/early September.

Indonesia also was active in finding flagged Red-necked Stints and reported 11 during the year, compared with a total of only six previously. But the sighting in Russia, on the breeding grounds in Chukotka in the very far north east of Siberia, was the most valuable Red-necked Stint report received during the year. With a previous Red-necked Stint flag sighting on a breeding area in the eastern Taimyr this indicates that the Red-necked Stints which visit Victoria may come from throughout their Arctic breeding range - a massive spread of some 70 degrees of longitude between 110°E and 180°E.

Other valuable overseas sightings of flagged Red-necked stints reported during the year came from Malaysia, Mongolia, Japan (mainly on southward migration), Taiwan (on both northward and southward migration), Hong Kong (China) (northward migration only) and New Zealand (an almost annual occurrence).

Within Australia flag sightings showed the very wide spread of migration routes used by Red-necked Stints, particularly on their northward migration in March/May. Three reports (on one occasion involving three flagged birds together) came from a new location – the Tanami Mine, some 650 km northwest of Alice Springs. The extremely enthusiastic observer was even able to read the metal band number on one bird (see Recoveries List elsewhere in this Bulletin). It had been banded in Corner Inlet only a few weeks previously. Other flag

sightings from within Australia indicate that some birds had changed their non-breeding areas. Other sightings illustrate the greater mobility of birds that occurs in the austral winter when the first year birds remain behind after the adults have departed for their Siberian breeding grounds.

## Sharp-tailed Sandpiper

### Australian

6/02/2005	1	Murray River Mouth, Coorong, SA	Ros Jessop & Peter Collins
24/03/2005	1	Penrice Salfields, SA	John Seymour
25/03/2005	2	Penrice Salfields, SA	John Seymour

### Overseas

31/08/2002	1	Tanggu, Tianjin, China (mainland)	Paul Holt
10/05/2005	1	Yalu Jiang National Nature Reserve, China (mainland)	Wang Tao
12/05/2005	1	Sheyang Saltworks, Yancheng Biosphere Reserve, China (mainland)	Wang Hui
15/05/2005	1	Beipu Salt Works, China (mainland)	Cao Lei
21/04/2005	1	Taiping river mouth, Taitung County, Taiwan (China)	Dr Chu & Ching-Ming
3/05/2005	2	Han-Bou, ChangHwa County, Taiwan (China)	Chung-Yu Chiang
7/05/2005	1	Kang-Nan Coastal Area, Hsin-Chu City, Taiwan (China)	Hsing-Jen Chou
11/05/2005	1	Fu-Bou, ChangHua County, Taiwan (China)	Chung-Yu Chiang
13/05/2005	1	Tai-ping Estuary, Taitung county, Taiwan (China)	Chien-Ming Chu
19/05/2005	1	Lun-Wei, Changhua County, Taiwan, Taiwan (China)	Chia-Yang Tsai

This was another good year for Sharp-tailed Sandpiper flag sighting reports, especially with 11 being overseas (only 15 previously). This is a reflection of the relatively large numbers caught and flagged during the last two summers in Victoria when populations have been high due to extremely good breeding success.

However overall the flag-sighting rate for Sharp-tailed Sandpipers remains low compared with other medium/small sandpipers. Only 26 have been reported overseas from 3794 Sharp-tailed Sandpipers flagged – a rate of 0.7%. The corresponding rate for Curlew Sandpipers is 4.5% and for Red-necked Stints is 1.1%.

## Curlew Sandpiper

### Australian

20/08/2004	1	Roebuck Bay, Broome, WA	Chris Hassell
10/09/2004	1	Pelican Point, near Carpenter Rocks, SA	Maureen Christie
11/09/2004	1	Wide Bay, Lake Moondarra, Mount Isa, QLD	Bob Forsyth
14/09/2004	1	Livingstones, near Carpenter Rocks, SA	Maureen Christie
16/09/2004	2	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Jenny Spencer & Ann Lindsey
20/09/2004	1	Pelican Point, Carnarvon, WA	Les George
27/09/2004	1	Wader Beach, Roebuck Bay, Broome, WA	Chris Hassell
16/10/2004	1	Penrhyn Inlet in Botany Bay, NSW	Mark Husk
16/10/2004	1	Manly Harbour, Moreton Bay, near Brisbane, QLD	Sandra Harding, David Milton, Barry & Joanna Morgan
17/10/2004	1	Penrhyn Inlet in Botany Bay, NSW	Tun-Pin Ong
22/10/2004	1	Penrhyn Road Estuary, Botany Bay, NSW	Rod Gardner
26/10/2004	1	Boat Harbour, Carnarvon, WA	Les George
9/11/2004	1	Lake Macleod, near Carnarvon, WA	Chris Hassell, Les George, & Tony Kirby
10/11/2004	1	Lake Macleod, near Carnarvon, WA	Chris Hassell, Les George, & Tony Kirby
10/11/2004	1	Penrhyn Inlet in Botany Bay, NSW	Ken Gilmore
11/11/2004	3	Lake Macleod, near Carnarvon, WA	Chris Hassell, Les George, & Tony Kirby
14/11/2004	1	Fishermans Island, Moreton Bay, QLD	Andrew Geering et al

15/11/2004	1	Boat Harbour, Carnarvon, WA	Les George
24/11/2004	1	80 Mile Beach, WA	Chris Hassell
25/11/2004	1	80 Mile Beach, WA	Chris Hassell
25/11/2004	1	Lacepede Islands, WA	Adrian Boyle
26/11/2004	1	Richards Point, Roebuck Bay, Broome, WA	Chris Hassell
2/12/2004	1	80 Mile Beach, WA	Adrian Boyle et al
10/12/2004	1	Goolwa Barrage, near Goolwa, SA	Dean Cutten
12/12/2004	1	Penrhyn Inlet in Botany Bay, NSW	Graham Buchan
14/12/2004	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
15/12/2004	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
12/01/2005	1	Shipwreck Point, Perkins Island, Tas	Hazel Britton
1/02/2005	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
5/02/2005	1	Needles, The Coorong, SA	Inka Veltheim & David Close
8/02/2005	2	Beacon 19 boat ramp, Goolwa, SA, SA	Dean Cutten
14/02/2005	1	Kooragang Island area, Newcastle, NSW	Jenny Spencer
8/03/2005	1	Roebuck Bay, Broome, WA	Josh Engel
15/03/2005	1	Danger Pt, Brown Bay, near Port MacDonnell, SA	Clive Minton, Australasian Wader Studies Group
14/05/2005	2	Wader Beach, Roebuck Bay, Broome, WA	Helen Macarthur, Sam Bibby & Chris Hassell
16/05/2005	4	Wader Beach, Roebuck Bay, Broome, WA	Chris Sanderson BBO (assistant warden)
4/06/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Belinda Forbes
15/07/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Chris Sanderson BBO (assistant warden)
26/07/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Stuart Young
28/07/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Michael Tesch

#### Overseas

2/05/2004	1	south of Tianjin Haibin Yuchang, Tianjin, China (mainland)	Paul Holt
22/05/2004	1	Zuidong, near Tanshang, Heibei Province, China (mainland)	Yang Hong Yan
4/05/2004	1	Zuidong, near Tanshang, Heibei Province, China (mainland)	Yang Hong Yan
15/05/2005	1	Beipu Salt Works, China (mainland)	Cao Lei
5/08/2004	1	HsinHsing, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
8/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
25/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
26/04/2005	1	Pei-Men, Tainan County, Taiwan (China)	Chung-Yu Chiang
28/04/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
3/05/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Chung-Yu Chiang
7/05/2005	1	Szu-Tsao, Tainan city, Taiwan (China)	Chung-Yu Chiang
11/05/2005	1	Han-Bou, ChangHwa County, Taiwan (China)	Chung-Yu Chiang
5/04/2004	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
6/04/2004	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
8/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader
14/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader
15/04/2004	1	Mai Po Marshes, Hong Kong (China)	Paul Leader
9/04/2005	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
10/04/2005	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
15/04/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
16/04/2005	1	Mai Po, Hong Kong (China)	John Allcock
18/04/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
28/04/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
30/04/2005	1	Mai Po, Hong Kong (China)	John Allcock
8/05/2005	3	Mai Po, Hong Kong (China)	Adrian Boyle
9/05/2005	1	Mai Po, Hong Kong (China)	Adrian Boyle
16/11/2004	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo
20/11/2004	1	Wonorejo Wetlands, Surabaya, Indonesia	D. Permana Putri, R. Anjarsari, & V. Mahartriasa (Peksia Himbio Unair)
18/12/2004	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo

The total number of Curlew Sandpiper flag sightings reported during the year was relatively low compared with some earlier years. This is a reflection of the current low population of this species and the relatively small number flagged in recent years in Victoria. Most sightings came from the usual areas in Hong Kong, Taiwan and mainland China. But the three sightings in Indonesia were the first from that country. They seem to indicate that a bird has changed its non-breeding area from Victoria to Surabaya – a surprising occurrence.

Quite a few of the sightings within Australia also indicate individual birds that had changed their non-breeding areas away from Victoria. One was as far away as Carnarvon in WA. The sightings also show that some immature birds moved north for the winter, including to Broome (as occurs in most years).

## Pied Oystercatcher

### *Australian*

10/06/2004	1	Wallagoot Lake, Bournda National Park, NSW	via ABBBS
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This is one of eight Pied Oystercatchers that were experimentally leg flagged at Stockyard Point on 16 July 2000. Several others have been seen or recaptured locally since then. This movement into southern NSW is quite typical for Oystercatchers marked in flocks in Victoria.

## Banded Stilt

### *Australian*

5/02/2005	2	Policeman Point, The Coorong, SA	Birgita Hansen & Alice Ewing
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These are the first sightings emanating from the 151 Banded Stilt flagged in a catch at Werribee Sewage Farm in late December 2000. It is not surprising that they should be found in the Coorong, the main non-breeding habitat used by the Banded Stilt population in central/south eastern Australia.

## Red-necked Avocet

### *Australian*

9/04/2004	1	Bendigo Sewerage Farm, VIC	Roger Standen
10/12/2003	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	T. Clarke

The two sightings this year bring to nine the total number of records of Red-necked Avocet that have been reported away from their flagging areas in Port Phillip Bay and Western Port. Most have dispersed inland to northern Victoria and into NSW. The movement to the Hunter estuary near Newcastle is the furthest movement reported so far.

## Double-banded Plover

### *Overseas*

13/12/2003	1	Ashley River Estuary, Christchurch, South Island, New Zealand	Nick Allen
8/02/2005	1	Awarua Bay, Southland, New Zealand	Phil Battley & Sue Moore
7/03/2005	1	Catlins Lake, between Dunedin & Invercargill, South Island, New Zealand	Richard Schofield

Three more movements into the usual breeding areas in the South Island of New Zealand.

## Lesser Sand Plover

### *Australian*

17/10/2004	1	Fishermans Island, Moreton Bay, QLD	Ralph Reeger et al
26/02/2005	2	Fishermans Island, Moreton Bay, QLD	David Edwards et al

These records again appear to relate to birds that have changed their non-breeding area away from Victoria.

## Greater Sand Plover

### *Australian*

23/01/2005	1	Fishermans Island, Moreton Bay, QLD	Peter Rothlisberg et al
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Another example of a bird changing its non-breeding area. This particularly seems to happen in species where Victoria is on the fringe of the main non-breeding area. A proportion of birds that have visited Victoria in one year seem to revert to the main non-breeding area in future years.

**Table 1. All sightings of Victorian-flagged waders processed into the AWSG leg-flag database between 27/06/2004 and 31/07/2005 -- by species and country of sighting**

Species	New Zealand	China (mainland)	China (Hong Kong)	USA	China (Taiwan)	Korea	Japan	Indonesia	Mongolia	Russia	Malaysia	Total Overseas	Australia
Red Knot	356	8			8	1	4			2		379	42
Bar-tailed Godwit	225	9		54		29	5					322	24
Red-necked Stint	1	57	40		21	1	8	11	7	1	2	149	105
Curlw Sandpiper		4	16		8			3				31	48
Sanderling		2	2			1	9					14	15
Ruddy Turnstone	3				4	3	1					11	4
Sharp-tailed Sandpiper		4			7							11	4
Great Knot		3	3			1						7	7
Eastern Curlew		2					1					3	5
Double-banded Plover	3											3	
Common Greenshank					1							1	
Terek Sandpiper		1										1	
Lesser Sand Plover													3
Banded Stilt													2
Red-necked Avocet													2
Black-tailed Godwit													1
Pied Oystercatcher													1
Greater Sand Plover													1
	588	90	61	54	49	36	28	14	7	3	2	932	264

Table 2. All sightings of Victorian-flagged waders in the AWSG leg-flag database as of 31/07/2005 -- by species and country of sighting

Species	New Zealand	Hong Kong (China)	Japan	China (mainland)	Taiwan (China)	USA	Korea	Russia	Mongolia	Indonesia	Malaysia	Brunei	Thailand	Vietnam	Total Overseas	Australia
Red Knot	1531	4	4	13	16		2	2							1572	232
Bar-tailed Godwit	533		48	66		183	72								902	130
Red-necked Stint	30	192	43	73	87		9	30	25	17	4	1	1	2	514	605
Curlew Sandpiper		364	1	11	39			2		3	1			1	422	300
Sanderling		12	99	5	4		3	2		1					126	167
Ruddy Turnstone	8	1	4	1	15		5								34	31
Eastern Curlew			16	4	3		4								27	38
Sharp-tailed Sandpiper		2		5	11		7			1					26	39
Great Knot		4	1	5	5		8				1				24	68
Grey Plover			18	1			1								20	1
Greater Sand Plover		9			1								1		11	14
Double-banded Plover	7														7	1
Terek Sandpiper		1		1			3								5	1
Black-tailed Godwit				1			1								2	3
Lesser Sand Plover		1													1	14
Common Greenshank					1										1	1
Broad-billed Sandpiper					1										1	1
Red-necked Avocet																9
Grey-tailed Tattler																4
Banded Stilt																2
Latham's Snipe																1
Pectoral Sandpiper																1
Pied Oystercatcher																1
Pacific Golden Plover																1
Red-capped Plover																1
<b>Total</b>	<b>2109</b>	<b>590</b>	<b>234</b>	<b>186</b>	<b>183</b>	<b>183</b>	<b>115</b>	<b>36</b>	<b>25</b>	<b>22</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3695</b>	<b>1666</b>

**Table 3. Number of sightings each year of waders flagged in Victoria as of 31/07/2005**

*Note that these totals include overseas sightings and significant movements within Australia*

<b>Year</b>	<b>Number of sightings</b>
1990	5
1991	30
1992	79
1993	171
1994	126
1995	75
1996	110
1997	153
1998	304
1999	335
2000	377
2001	498
2002	686
2003	943
2004	805
2005	664
<b>Total</b>	<b>5361</b>



# Sightings in 2004-05 of Waders Leg Flagged in South Australia

## Report Number 5

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

Leg flagging in South Australia with the orange/yellow flag combination commenced in April 1999. During the last year, since the previous list was published, there have been 155 sightings of these birds away from the flagging locations on the south eastern coasts of SA. 86 of these were overseas and 69 elsewhere in Australia (Table 1). This increased the previous total by almost 50%, from 324 to 479. 184 have been reported overseas and 295 within Australia (Table 2).

There has been a steady build up in flag sighting reports over the six years (Table 3). 3655 waders of 15 different species have now been leg flagged in South Australia, with Sanderling (1205), Red-necked Stint (1108) and Ruddy Turnstone (940) being the major species (Table 4). Catching is undertaken by short (5 day) visits once a year by a team from Victoria, and by Maureen Christie, who lives at Carpenter Rocks in the centre of the SA study area. Her efforts take place throughout the year, and have been most successful in making our South Australian data more comprehensive. Her achievements are especially noteworthy given that she often has a very small cannon netting team.

The lists of flag sightings reported during the last year are detailed below in the same format as the "Sightings of Waders Leg-flagged in Victoria" note which precedes this one. Please refer to the introduction section in that for additional background and explanatory information.

### Bar-tailed Godwit

#### *Australian*

12/12/2004	1	Bird Point, Robbins Island, northwestern, Tas	R. and C. Donaghey, F. Spruzen, and P. Porteus
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#### *Overseas*

29/12/2003	1	Awarua Bay, near Invercargill, South Island, New Zealand	Gillian Vaughan and Ian Southey
24/10/2004	1	Awarua Bay, near Invercargill, South Island, New Zealand	David Melville
1/12/2004	3	Lake Grassmere, southeast of Seddon, South Island, New Zealand	Brent Stephenson
3/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Gillian Vaughan and Ian Southey
9/01/2005	1	Awarua Bay, Southland, New Zealand	Ian Southley
11/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker, Sheila Patch and Bev Alexander
8/02/2005	1	Awarua Bay, Southland, New Zealand	Phil Battley and Sue Moore
8/02/2005	3	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Paul Scofield and Blue Booth
17/02/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
4/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Peter Field
6/03/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
8/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Sheila Petch, Filipe Moniz, Jan Walker and Bev Alexander
9/03/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland and Scott Butcher
12/03/2005	1	Ohiwa Harbour, Bay of Plenty, North Island, New Zealand	J & B Groom
15/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker and others
20/03/2005	1	Little Waihi, Bay of Plenty, North Island, New Zealand	T. Barnard
24/03/2005	1	Nelson Haven, South Island, New Zealand	Peter Field
24/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Andrew Crossland
25/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker and Sheila Petch

1/04/2005	1	Mangawhai Estuary, Auckland, New Zealand	G. Goreby
9/04/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Rob Schuckard
23/05/2005	1	New Brighton Spit, Christchurch, New Zealand	Colin Reid
29/05/2005	2	Avon-Heathcote Estuary, Christchurch, South Island, New Zealand	Jan Walker and others
24/06/2005	1	Bells Is, Waimea Inlet, near Nelson, New Zealand	Willie Cook and Don Cooper

This species is the star of this year's results, which are the basis of a separate article in this VWSG Bulletin ("From little things..."). All the sightings in the above list have come from three birds flagged on 21<sup>st</sup> October 2002, and eight juveniles flagged on 23<sup>rd</sup> November 2004. Clearly all these birds were on passage when banded. Most were on their way to New Zealand, but one went to Tasmania.

## Ruddy Turnstone

### Australian

20/09/2004	1	Price Saltworks, Upper Yorke Peninsula, SA	John Hatch, John Summers, and Jeremy Robertson
12/10/2004	1	Tattler Rocks, Roebuck Bay, Broome, WA	Tim Gale
17/10/2004	1	Roebuck Bay, Broome, WA	Adrian Boyle
28/03/2005	1	King Island, TAS	Mavis Burgess

### Overseas

11/08/2003	1	Yatsu Tidal Flat, Japan	(unknown)
14/05/2005	1	Mokpo city in south-west Korea, Korea	Park Jong-gil
2/04/2004	1	Han-Pao, Changhua County, Taiwan (China)	Chung-Yu Chiang
5/08/2004	1	Han-Bou, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
5/08/2004	1	HsinHsing, ChangHwa County, Taiwan (China)	Taiwan Wader Study Group
22/08/2004	1	Cheng-Hsi-Li, Tainan City, Taiwan (China)	Kun-Hsien Hsu
14/09/2004	1	Fu-Bou, ChangHua County, Taiwan (China)	Chia-Yang Tsai
8/05/2005	1	Mai Po, Hong Kong (China)	Adrian Boyle
9/05/2005	2	Mai Po, Hong Kong (China)	Adrian Boyle
10/05/2005	2	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
11/11/2004	1	Miranda, Firth of Thames, South Auckland, New Zealand	Phil Battley
8/02/2005	1	Fortrose estuary, near Invercargill, South Island, New Zealand	Phil Battley and Sue Moore
13/03/2005	1	Farewell Spit, Stockyard, South Island, New Zealand	Rob Schuckard
27/03/2005	1	Walker Island, Rangaunu Harbour, Far North, New Zealand	Tony Habraken

This year's sightings follow the same pattern as those from previous years. Sightings on northward migration were mainly from Hong Kong (China) and on southward migration mainly from Taiwan (China). There was also a sighting on northward migration in Korea and on southward migration in Japan. Four more sightings in New Zealand reinforce previous information indicating a significant passage of turnstones through south eastern Australia on southward migration to non-breeding areas in both the North and South Islands of New Zealand.

There is also additional evidence that some birds migrating to South Australia use the area of Roebuck Bay, Broome, in NW Australia as a stopover location.

## Sanderling

### Australian

16/10/2004	1	Coconut Well near Broome, WA	Adrian Boyle
16/11/2004	1	Black Rocks, near Barwon Heads, Vic	Peter Fuller
12/12/2004	42	Discovery Bay, Vic	Martin Schulz
19/12/2004	2	Sandy Point, near Wilson's Promontory, VIC	Ros Jessop, Peter Collins
7/01/2005	1	Murray River Mouth, Coorong, SA	Dean Cutten
31/01/2005	2	Murray River Mouth, Coorong, SA	Dean Cutten
6/02/2005	1	Murray River Mouth, Coorong, SA	Ros Jessop and Peter Collins
7/02/2005	3	The Coorong, SA	Ken Gosbell and David Hulett

### Overseas

24/08/2002	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Kenzo Tomiya
4/08/2004	2	Ichinomiya River Estuary, Chosei, Chiba, Japan	Seiji Takashima
8/08/2004	1	Harborland, Tamashima, Kurashiki, Okayama, Japan, Japan	Kenji Nakajima
8/08/2004	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Masamichi Ito
21/08/2004	1	Kitakama Beach, Natori, Miyagi, Japan, Japan	Jun Hosoya
22/08/2004	1	Edohashi beach, Tsu, Mie, Japan, Japan	kouichi Tada
27/08/2004	1	Kusunoki Beach, Kusunoki, Mie, Mie, Japan, Japan	Nobuo Ando
28/08/2004	1	Mouth of Hagawa-Suzuka River, Kusunoki, Mie, Mie Japan, Japan	Kenji Ito
29/08/2004	2	Hamakurosaki, Toyama, Japan	Osamu Saeki
30/08/2004	1	Ebie biech, Shinminato, Japan	toshiko Ohno
19/09/2004	1	Hasaki Town, Kashima-gun, Ibaraki, Chiba, Japan	atsuyuki Genma
20/09/2004	1	Hasaki Town, Kashima-gun, Ibaraki, Chiba, Japan	Zenji Konno
29/08/2003	1	Nakdong Estuary, near Busan, Korea	Chungrok Park, Wetlands & Birds Korea
10/09/2003	1	Nakdong Estuary, near Busan, Korea	Chungrok Park, Wetlands & Birds Korea
25/08/2004	1	Nakdong Estuary, near Busan, Korea	Chungrok Park, Wetlands & Birds Korea
23/08/2003	1	Fu-Pao wetland, Changhua County, Taiwan (China)	Chuan-Cheng Wang
14/05/2005	1	Tayuan, Taoyuan County, Taiwan (China)	Kuo-Wei Wu
30/04/2005	1	Mai Po, Hong Kong (China)	John Allcock
5/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
8/05/2005	3	Mai Po, Hong Kong (China)	Adrian Boyle
9/05/2005	1	Mai Po, Hong Kong (China)	Adrian Boyle

This excellent crop of 25 overseas sightings of Sanderling brings to 79 the total number of overseas sightings of this species. Japan continues to dominate the list with 61 sightings, almost all of which were birds on southward migration. The three sightings in Korea were also all during southward migration. In contrast, the six sightings at Mai Po marshes in Hong Kong (China), and one of the sightings in Taiwan (China), were of birds on northward migration. These are further evidence that in this species the northward and southward migration routes are different.

The majority of the sightings of birds within Australia relate to birds which had dispersed along the coast westwards or eastwards from the banding area. A total of 42 individuals were located on 12/12/2004 when the intrepid Martin Schultz walked the full length of Discovery Bay. There is yet another record from near Broome in NW Australia indicating that, as for many other small/medium sized waders coming to non-breeding areas in south eastern Australia, that area is used as a migratory stopover.

## Red-necked Stint

### Australian

26/11/2003	1	Murray River Mouth, Coorong, SA	Dean Cutten
9/03/2004	2	Tolderol Game Reserve, SA	Terry Dennis
2/12/2004	1	Glenelg River, VIC	Bernice Cohen
21/05/2005	1	Wader Beach, Roebuck Bay, Broome, WA	Chris Hassell and various other observers

### Overseas

29/08/2002	1	Tanggu, Tianjin, China (mainland)	Paul Holt
23/09/2004	1	near Tanggu, Tianjin, China (mainland)	Paul Holt
9/01/2005	1	Cheng-Hsi-Li, Tainan City, Taiwan (China)	Tung-Hui Kuo
15/05/2005	1	Tai-ping Estuary, Taitung county, Taiwan (China)	Chien-Ming Chu
4/05/2005	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo and Anak Burung

A rather small list of flag-sightings for this species, considering the numbers flagged. Records include birds on northward migration through Indonesia and Taiwan (China) and two birds on southward migration on the western side of the Yellow Sea in northern China. The apparent sighting of a SA flagged bird in January is difficult to explain, but the record seems to be genuine. Records within Australia indicate dispersal of a few birds to other locations on the South Australian coast and yet another example of a bird using Roebuck Bay, Broome, in NW Australia as a stopover location.

## Sharp-tailed Sandpiper

### Australian

3/02/2004	1	Forthrops Lagoon, Portland, Vic	Adrian Boyle
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### Overseas

3/05/2004	1	Han-Pao, Changhua County, Taiwan (China)	Taiwan Wader Study Group
4/05/2004	1	Han-Pao, Changhua County, Taiwan (China)	Wen-Yin Hu

The two sightings in Taiwan (which may relate to the same bird) in early May add to our relatively meagre data on this species' migration route.

The ephemeral movements of this species between different habitats / locations in Australia is illustrated by the movement of one bird into western Victoria.

## Curlew Sandpiper

### Australian

20/08/2004	1	Roebuck Bay, Broome, WA	Chris Hassell
20/11/2004	1	North-west corner of Swan Bay, near Queenscliff, VIC	Pete Collins
5/02/2005	1	Needles, The Coorong, SA	Inka Veltheim & David Close
16/05/2005	1	Wader Beach, Roebuck Bay, Broome, WA	BBO Staff
2/06/2005	1	Werribee Sewage Farm, VIC	Peter Fuller

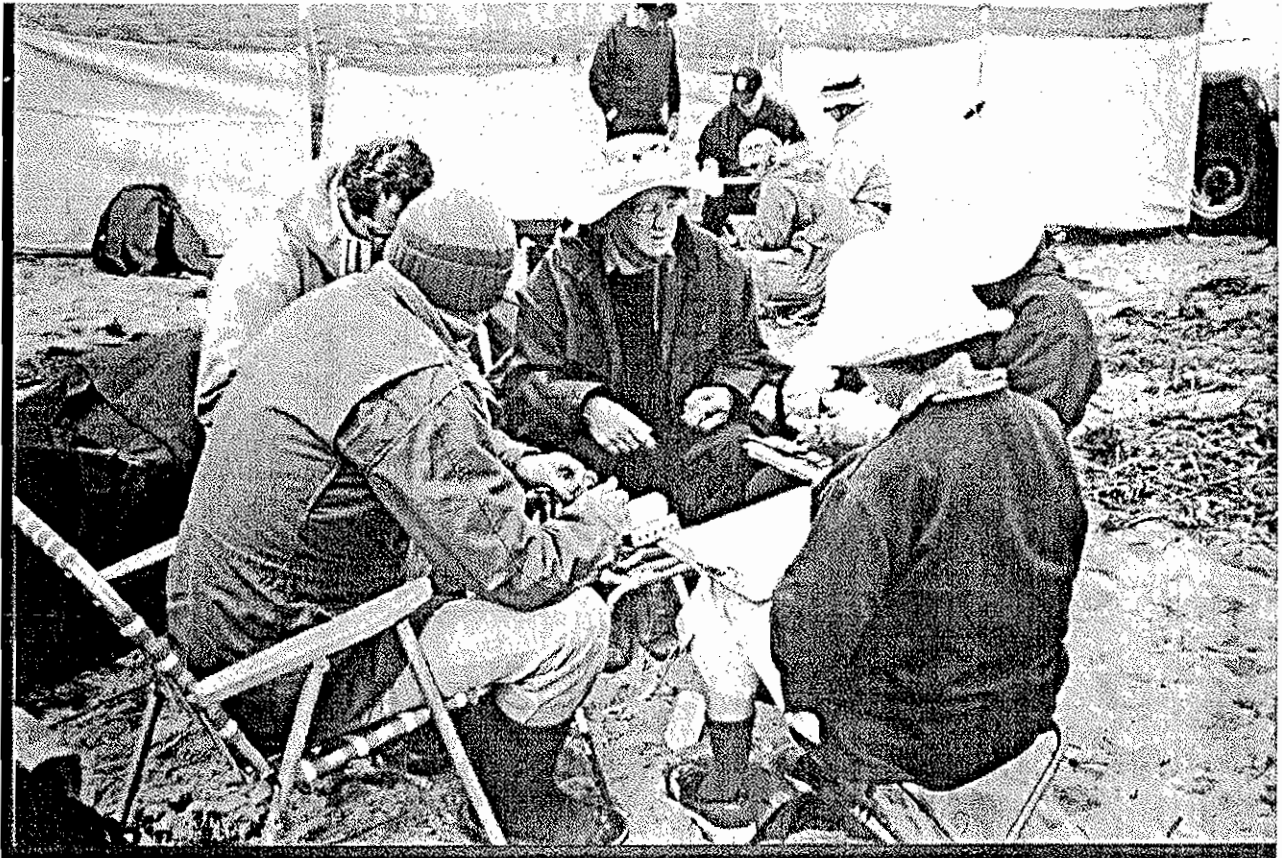
### Overseas

9/04/2005	1	Mai Po Marshes, Hong Kong (China)	Geoff Carey
18/04/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
12/05/2005	1	Mai Po Marshes, Hong Kong (China)	Yu Yat Tung
2/04/2005	1	Khok Kham, Phanthal Norasingh, near Samut Sakhon, Thailand	Mr Pornthep Katsura
16/11/2004	1	Wonorejo Wetlands, Surabaya, Indonesia	Iwan Londo

A nice collection of flag sightings for this species, which has only been caught and flagged in modest numbers in recent years. The sightings in Thailand and Indonesia are firsts for those countries. The late date, 16<sup>th</sup> November, of the sighting in Indonesia may be of a bird which was still on migration, but could also be a possible indication of a surprisingly large change in non-breeding area. It is also noteworthy that the sighting in Thailand was on the relatively early date of

2<sup>nd</sup> April. The three sightings in Hong Kong (China) fit the previously established pattern of a major movement of this species through there in the second half of April and the first part of May.

The sightings in Australia portray a range of different types of movement. The bird seen at Roebuck Bay in August was probably a returning adult on southward migration. However the one there on 16<sup>th</sup> May and the one at Werribee Sewage Farm in Victoria on 1<sup>st</sup> June were both first year birds in non-breeding plumage carrying out their usual, generally northward, winter wanderings. The other two records indicate birds which seem to have changed their non-breeding location.



Processing Yallock Creek (J. Bossel)

Table 1. All sightings of South Australian-flagged waders processed into the AWSG leg-flag database between 27/06/2004 and 31/07/2005 -  
 - by species and country of sighting

Species	New Zealand	Japan	China (Hong Kong)	Taiwan (China)	Korea	China (mainland)	Indonesia	Thailand	Total overseas	Australia
Sanderling		14	6	2	3				25	53
Bar-tailed Godwit	33								33	1
Ruddy Turnstone	4	1	5	5	1				16	4
Red-necked Stint				2		2	1		5	5
Curlew Sandpiper			3				1	1	5	5
Sharp-tailed Sandpiper				2					2	1
<b>Total</b>	<b>37</b>	<b>15</b>	<b>14</b>	<b>11</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>86</b>	<b>69</b>

Table 2. All sightings of South Australian-flagged waders processed into the AWSG leg-flag as of 31/07/2005 -- by species and country of sighting

Species	Japan	New Zealand	China (Hong Kong)	China (Taiwan)	Korea	Russia	Indonesia	China (mainland)	Thailand	Total overseas	Australia
Sanderling	61		6	3	7	2				79	193
Red-necked Stint	2		3	3	2	3	2	2		17	46
Ruddy Turnstone	5	13	6	8	1					33	26
Curlew Sandpiper			14	3			1		1	19	28
Bar-tailed Godwit		33								33	1
Sharp-tailed Sandpiper				3						3	1
<b>Total</b>	<b>68</b>	<b>46</b>	<b>29</b>	<b>20</b>	<b>10</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>184</b>	<b>295</b>

**Table 3. Number of sightings each year of waders flagged in South Australia as of 31/07/2005**

<b>Year</b>	<b>Number of sightings</b>
1995	3
1996	6
1998	38
1999	27
2000	46
2001	52
2002	64
2003	63
2004	117
2005	63
<b>Total</b>	<b>479</b>

Note that these totals include both overseas sightings and significant movements within Australia.

They also include sightings of Sanderling and Ruddy Turnstone (only) flagged before 1999 with an orange flag (only) on the tarsus. Where the flag position was reported, these sightings could be distinguished from those of birds flagged in Victoria, where the orange flag was placed on the tibia.



**Table 4. Waders Leg Flagged by VWGS in South Australia (orange/yellow)**

Species	1999	2000	2001	2002	2003	2004	Total
Latham's Snipe	0	0	4	0	0	0	4
Grey-tailed Tattler	0	1	0	0	0	0	1
Bar-tailed Godwit	0	0	0	3	0	138	11
Ruddy Turnstone	234	226	73	193	76	77	940
Red Knot	0	0	0	0	0	1	1
Sanderling	63	420	2	315	328	95	1205
Red-necked Stint	126	383	22	319	163	73	1108
Sharp-tailed Sandpiper	0	2	0	27	7	2	109
Curlew Sandpiper	24	11	0	190	13	0	240
Pacific Golden Plover	0	2	0	0	1	0	3
Red-capped Plover	0	0	1	7	5	0	13
Double-banded Plover	0	0	4	5	1	0	10
Black-fronted Plover	0	0	0	3	0	0	3
Hooded Plover	0	0	0	0	1	0	1
Masked Lapwing	0	0	0	0	4	2	6
<b>Total</b>	<b>447</b>	<b>1045</b>	<b>106</b>	<b>1062</b>	<b>599</b>	<b>396</b>	<b>3655</b>

Table prepared by Helen Vaughan & Clive Minton

## Tern Recovery Report 2004/05

**Clive Minton, Roz Jessop and Peter Collins**

The VWSG bands some 4-5000 terns each year. These are mostly Crested Tern chicks, but also include modest numbers of Caspian Tern chicks and, in some years, adult Common and Little Terns. These produce a steady flow of recovery reports and listed below are those received during the past year. This list follows that published in the 2004 VWSG Bulletin.

### Caspian Tern

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
091-38657	3+	13/06/1998	Rhyll, Phillip Island	1/11/2003 (injured/died)	Corner Inlet Entrance, Nth Wilsons Prom Vic	106 E
082-43604	1	07/02/1982	Manns Beach, Corner Inlet	22/02/2005 (found dead)	Lawrence NSW	1173 N
091-06239	1	20/12/1987	Manns Beach, Corner Inlet	26/06/2005 (injured/died)	Scarborough Moreton Bay Qld	1403 N

Three wonderful Caspian Tern recoveries this year – wonderful that is in the age of the recovered birds, but not so good in that all three finished up dead. But after a 15 year old bird reported in last year's Bulletin, we now have three more old birds at 14 years, 17.5 years and 23 years. The last of these is by far the oldest ever reported from banding in Australia. These three recoveries also well illustrate the typical migratory range of Caspian Terns banded in Victoria. One was recovered in Victoria, one on the northern NSW coast and one was spending the austral winter in Moreton Bay, Queensland. The coasts of SE Queensland are the most frequently used wintering area by the Caspian Terns which breed in Victoria.

### Crested Tern

**Recoveries of Crested Terns banded as chicks at Mud Islands, Port Phillip Bay, later found dead (or with injuries leading to death).**

Band	Date Banded	Date Recovered	Location Recovered	KM Moved
072-15089	15/12/1990	22/02/2004	Kororoit Creek Rd, Williamstown Vic	59 NW
073-20983	23/12/2003	29/02/2004	Between Table Rock & Watkins Bay Vic	39 N
073-05108	06/12/2001	20/03/2004 (shot)	Poddy Bay Lake Wellington Vic	219 NE
073-20242	26/11/2003	30/07/2004	Ricketts Point, Beaumaris Vic	39 N
073-20655	23/12/2003	05/09/2004	Beaumaris Beach Vic	40 N
073-20830	26/12/2003	04/10/2004	St Kilda West Beach Vic	50 N
073-05564	16/12/2000	01/12/2004	Mud Island Port Phillip Bay Vic	0 N
072-92590	17/11/1999	28/12/2004	Thorny Beach, Phillip Island Vic	45 E
072-85895	20/12/1998	30/12/2004	Queenscliff Beach Vic	7 W
072-04515	16/12/1989	09/01/2005	Clonmel Island, 8 Km S of Port Albert Vic	176 E
072-65464	17/12/1995	04/04/2005	Callala Beach NSW	641 NE
073-05815	16/12/2000	09/04/2005	Black Rock Beach Port Phillip Bay Vic	41 N
073-39001	01/12/2004	06/05/2005	Sandringham Beach Vic	41 N
073-30513	01/12/2004	16/06/2005	Jaw Bone Marine Sanctuary, Williamstown, Vic	48 N
072-85816	20/12/1998	00/00/2004 (band only)	Portland Vic	275 SW

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

Band	Date Banded	Date Recovered	Location Recovered	KM Moved
072-48612	22/12/1994	08/11/2003	Newhaven Phillip Island Vic	20 E
073-27513	18/12/2003	01/02/2004	Ventnor Beach Phillip Island (The Nobbies) Vic	7 N
073-28334	23/12/2004	10/02/2004	Woolami Surf Club & The Pinnacles Vic	21 E
073-06742	19/12/2000	19/02/2005	N Arch Rock, Cape Liptrap Vic	74 SE
073-28331	23/12/2003	28/03/2004	North Shore Beach, Port Macquarie NSW	1061 N
073-26234	18/12/2003	09/04/2004	Dromana Vic	24 NW
073-26873	18/12/2003	15/05/2004	Cape Woolami, Phillip Island, Vic	22 E
073-28779	14/01/2004	24/05/2004	Lakes Entrance Vic	259 NE
073-28250	30/12/2003 (released alive)	31/05/2004	Swansea Channel, Lake Macquarie NSW (found tangled in fishing line)	844 NE
073-26745	18/12/2003	11/06/2004	Bancroft Bay Vic	250 NE
072-98149	30/12/1999	01/07/2004	Newhaven Vic	19 E
073-28211	30/12/2003	15/08/2004	Primrose Sand Beach Tas	531 SE
073-27576	18/12/2003	01/10/2004	Black Rock Beach Port Phillip Bay Vic	62 NW
073-26971	18/12/2003 (captive)	04/10/2004	Chelsea Beach Vic	52 N
072-73262	22/01/1997	02/01/2005	Berry Beach, Phillip Island Vic	7 E
073-4029.	6/12/2004 (seen alive)	23/03/2005	The Bluff, Iluka NSW	1265 N
073-41081	20/12/2004	01/04/2005	100m south of Woolamai Surf Club, Phillip Island Vic	20 E
073-27404	18/12/2003	10/04/2005	Port Campbell Vic	184 W

**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
071-96789	24/12/1988	21/12/2004	Off Manns Beach Corner Inlet Vic	0 N
071-96782	24/12/1988	22/12/2004	Off Manns Beach Corner Inlet Vic	0 N
072-48904	13/01/1995	09/01/2005	Box Bank Island, East of Manns Beach Vic	4 W

**Recoveries of Crested Terns banded elsewhere**

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
072-42140	2+	26/01/1998	Trouser Point, Loch Sport	24/04/2005 (mercy killed)	Between Seaspray And Golden Beach Vic	47 S

These Crested Tern recoveries, mostly from birds banded as chicks at the three main study colonies of Mud Islands, The Nobbies (west end of Phillip Island) and Corner Inlet illustrate the now well established pattern:

- a) A significant number of birds perish in their first year. They do seem to have difficulty adjusting to feeding themselves and they do seem to be rather naïve and frequently get

themselves tangled in fishing line etc.

This year there are slightly more rather older birds recovered, the oldest two being 16 years, with another at 13 years.

- b) Both first year and adult Crested Terns tend to move eastwards along the Victoria coast and northwards up the NSW coast, occasionally into southeast Qld in the autumn for the winter. Westward movements are unusual, and there is only one of significance in the lists above (275km W, from Mud Islands to Portland).
- c) Some adult and first year birds however do remain in Victorian waters for the winter. Some first-year birds which may have been to northern NSW for the winter do come back to the Victorian coast for the summer. However some of these immature birds remain in these northern areas until a later year.

### Little Tern

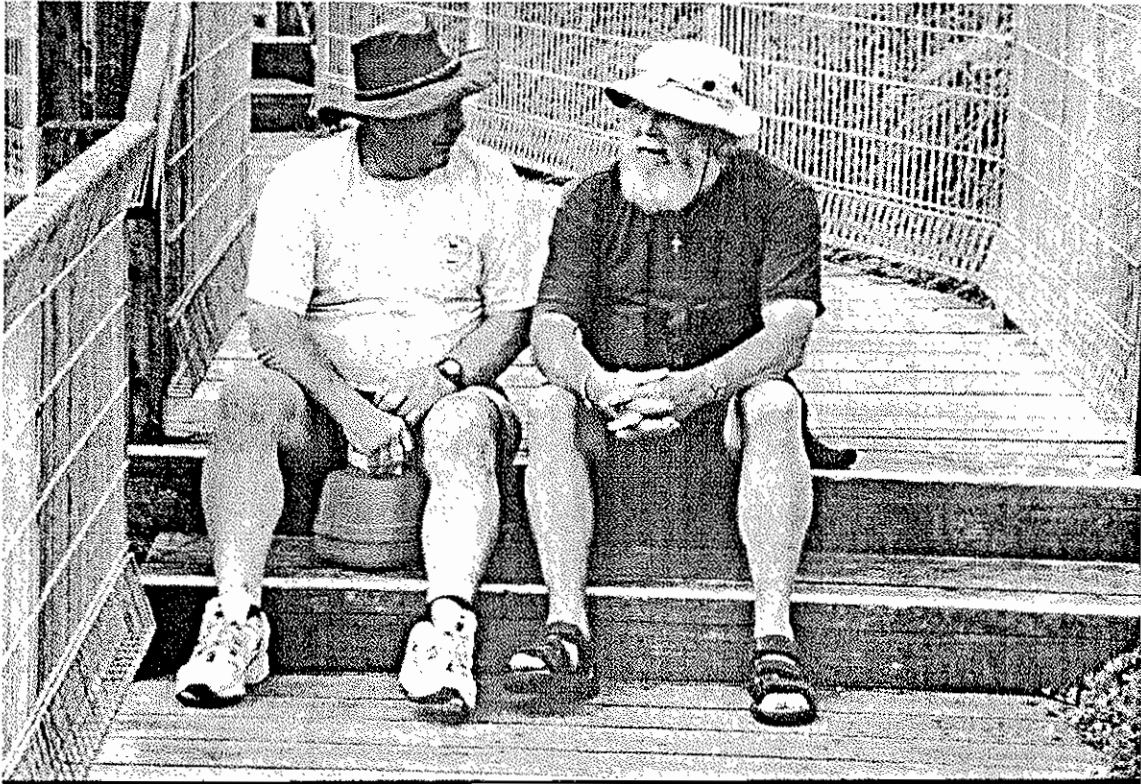
Band	Age	Date Banded	Location Banded	Date Seen	Location Seen	KM Moved
041-61552	2+	25/01/1992	Spermwhale Head/Ocean Grange Area	10/01/2004	Tathra NSW	242 NE
041-96359	1	25/01/1997	Spermwhale Head/Ocean Grange Area	10/01/2004	Tathra NSW	242 NE
042-00605	2+	13/03/1999	Albifrons Is Ocean Grange Lakes NP	31/01/2004	Windang Inlet, Lake Illawarra NSW	469 N
042-15402	2+	30/11/1999	Rigby Island, Lakes Entrance	31/01/2004	Windang Inlet, Lake Illawarra NSW	454 N
041-59281	2+	13/01/1990	Spermwhale Head/Ocean Grange Area	2/02/2004 (found dead)	Windang Is, near Lake Illawarra NSW	472 N

All 5 records listed relate to Little Terns banded in Victoria which were later seen or recaptured at breeding colonies in the southern half of NSW. This is a well-established pattern, mostly deriving from NSW-breeding Little Terns which have been banded during their post breeding season movement into the Gippsland Lakes between late January and mid-March. However, one bird (042-15402) was banded as a breeding adult on the 30<sup>th</sup> November at Rigby Island, near Lakes Entrance, and appears to have genuinely changed its breeding location to Lake Illawarra in a subsequent season.

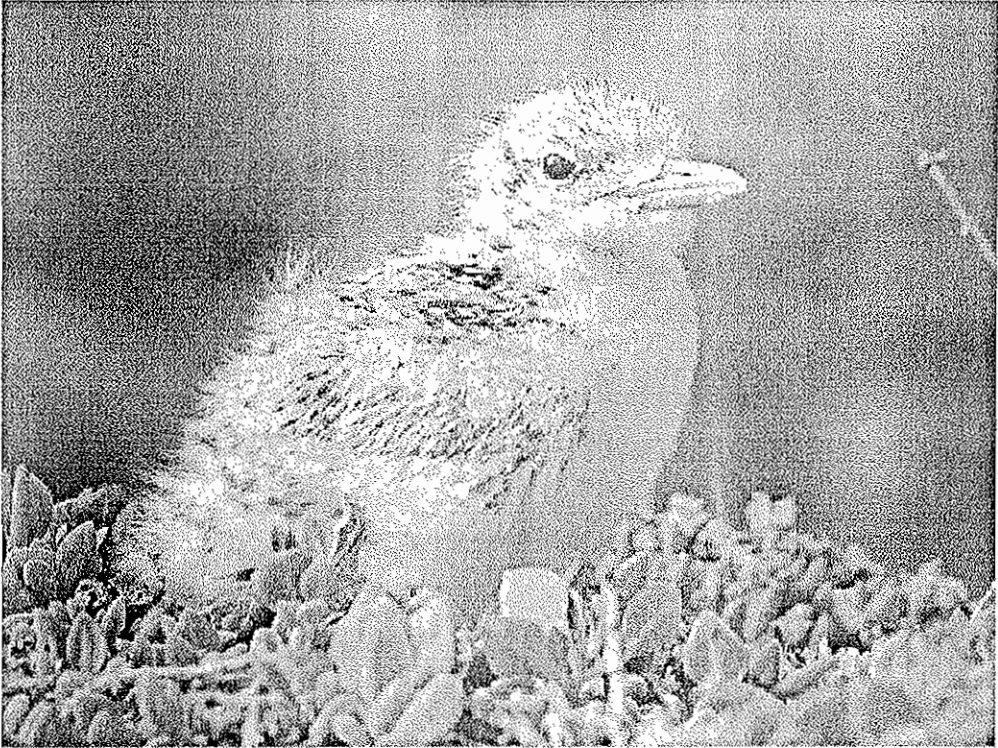
### Fairy Tern

Band	Age	Date Banded	Location Banded	Date Seen	Location Seen	KM Moved
042-00440	1	13/03/1999	Albifrons Is Ocean Grange Lakes NP	09/01/2004	Shoalhaven Heads NSW	434 N

This individual was previously recorded nesting, paired with a Little Tern, at Lake Conjola, NSW, in January 2002. This time it was seen roosting with Little Terns at Shoalhaven Heads. It is the only Victorian banded Fairy Tern to be recovered in NSW. However, see the flag sightings list below for the sighting of a Victorian flagged Fairy Tern in NSW.



Clive Minton and Brian Little "resting" on the return journey from banding Crested Tern chicks at the Nobbies, Phillip Island (photo D. Graham).



Crested Tern chick at The Nobbies. (photo Roz Jessop)

## Terns Flag Sighting Report 2004/05

**Clive Minton, Roz Jessop, Peter Collins, Alice Ewing and Heather Gibbs**

Because Terns tend to inhabit shorelines, often near quite well visited areas, we receive a good number of flag sighting reports each year for terns flagged or colour-banded by the VWSG. Listed below are the flag sightings received during the past year. This list follows that published in the 2004 VWSG Bulletin.

This year we have also included summary tables of flag sightings for each species, broken down by the country in which they were sighted. Table 1 summarises the 59 flag sightings reported during the past year. Table 2 details the 478 flag sightings which have now accrued altogether, including a massive 294 on Common Terns and an amazing 102 on Caspian Terns. These totals do not include recoveries (where the individual band number of a bird has been determined) which, of course, provide additional information on migratory movements.

In each table, data is given in the following order – date of sighting, number of flagged birds seen, sighting location, observer, distance (in km) and direction moved. In the case of the colour-banded Crested Terns, the date of banding is also given.

### Caspian Terns flagged at Clonmel Island (orange flag right tarsus)

20/10/2003	1	Kakadu Beach, Bribie Island, QLD	Linda Cross	1434 NE
2/05/2004	1	Kakadu Beach, Bribie Island, QLD	Michael Strong	1420 NE
21/06/2004	1	Buckleys Hole, Bribie Island, QLD	Phil Cross	1417 NE
11/07/2004	1	Buckley's Hole, Bribie Island, QLD	Esther Townsend	1418 NE
22/08/2004	1	Toorbul, near Bribie Island, QLD	Dez Wells	1420 NE
18/09/2004	1	Toorbul, near Bribie Island, QLD	Dez Wells	1420 NE
22/09/2004	1	Mathieson Homestead, near Hervey Bay, QLD	John Knight	1587 NE
3/10/2004	1	Toorbul, near Bribie Island, QLD	Dez Wells	1420 NE
17/10/2004	1	Wonboyn Estuary, south of Green Cape, NSW	Barbara Jones Far South Coast Birdwatchers	315 NE
13/11/2004	1	Manly Harbour, Moreton Bay, near Brisbane, QLD	Dave Houghton	1381 NE
28/11/2004	1	The Entrance, near Gosford, NSW	Alan Morris	727 NE
26/02/2005	1	Fishermans Island, Moreton Bay, QLD	Andrew Geering et al	1391 NE
6/03/2005	1	Pine Rivers, Moreton Bay, QLD	Floss Wainwright	1393 NE
12/03/2005	1	Buckley's Hole, Bribie Island, QLD	Des Wells	1418 NE
12/03/2005	1	Buckley's Hole, Bribie Island, QLD	Des Wells	1418 NE
13/03/2005	3	Toorbul, near Bribie Island, QLD	Des Wells	1420 NE
30/03/2005	1	Terranora Inlet, lower Tweed estuary, NSW	Edward Kleiber	1338 NE
9/04/2005	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	A. Lindsey, C. Herbert and L. Crawford	1417 NE
9/04/2005	1	Buckley's Hole Sandspit, Bribie Island, QLD	Des Wells and Greg Nye	784 NE
10/04/2005	1	Toorbul, near Bribie Island, QLD	Esther Townsend	1420 NE
7/05/2005	1	Pine Rivers, Moreton Bay, QLD	Floss Wainwright	1393 NE

Another excellent crop of flag sightings of Caspian Terns banded as chicks at Clonmel Island, Nooramunga National Park, Corner Inlet. This flagging program has produced a huge increase in the amount of information on the movement, and timing, of Caspian Terns between their Victorian breeding areas and their non-breeding areas on the northern coasts of NSW (four sightings this year) and in south east Queensland (19 sightings this year). The sightings in these areas in October/November almost certainly relate to immature birds, which are not going to return southwards back to Victoria until a later year.

#### Caspian Terns flagged at Mud Islands (orange flag left tarsus)

5/11/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Tom Clarke	837 NE
14/11/2004	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Fred van Gessel	873 NE
21/11/2004	1	Kakadu Beach, Bribie Island, QLD	Michael Strong	1471 NE

Many fewer Caspian Tern chicks are flagged at Mud Islands than at Clonmel Island, and so the number of sightings reported is lower. Cumulative information indicates that the birds from both colonies make similar movements in the non-breeding season. The birds in the list above were clearly immatures not intent on returning to Victoria to breed in 2004/05 season.

#### Crested Terns colour banded at Mud Islands (yearly cohort colour band)

13/06/2003	1	Caloundra headland, QLD	Gavin Goodyear	1497 NE	blue band (21/12/1996)
6/07/2003	3	Pelican Point, near Carpenter Rocks, SA	Maureen Christie	381 W	white band (Nov./Dec. 1999)
6/07/2003	3	Pelican Point, near Carpenter Rocks, SA	Maureen Christie	381 W	orange band (17/12/1995)
6/07/2003	1	Pelican Point, near Carpenter Rocks, SA	Maureen Christie	381 W	red band (December 2000)
20/05/2004	1	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie	385 W	red band (December 2000)
5/08/2004	1	Mimosa Rocks National Park, southern, NSW	Anon. via ABBBS	505 E	gold band (11 or 17 Dec. 2002)
25/09/2004	1	Cape Banks Lighthouse, Carpenters Rocks, SA	Maureen Christie	385 W	red band (December 2000)

The primary purpose of using colour powder-coated metal bands on Crested Tern chicks at Mud Islands between 1995 and 2002 (see previous VWSG Bulletin) was to help determine the age of first breeding for this species. However as a by-product some information on movements is derived each year from sightings of these colour banded birds. In the list above, two are in the now well established main non-breeding areas on the coasts of northern NSW and southeast Queensland. All the other records relate to the small number of birds, which move westwards from Port Phillip Bay into South Australia. These sightings are the result of the efforts of Carpenter Rocks' resident and VWSG member Maureen Christie.



Caspian Tern being weighed at Rhyll.

### Common Terns flagged at the Gippsland Lakes (orange flag right tarsus)

2/11/2004	1	Bombing Range Beach, Bundjalung National Park, NSW	Greg Clancy	1114 NE
12/12/2004	1	Patch's Beach, South of Ballina, NSW	Bo Totterman	1133 NE
19/02/2005	1	Werribee Sewage Farm, VIC	Alex Farias	283 W
27/03/2005	1	Salty Lagoon, Broadwater National Park, NSW	Bo Totterman	1121 NE
1/04/2005	2	Broadwater Beach, Broadwater, NSW	Bo Totterman	1132 NE
1/04/2005	3	Broadwater Beach, Broadwater, NSW	Bo Totterman	1132 NE
1/04/2005	1	Patch's Beach, South of Ballina, NSW	Bo Totterman	1133 NE
6/04/2005	1	Patch's Beach, South of Ballina, NSW	Bo Totterman	1144 NE
6/04/2005	2	Broadwater Beach, Broadwater, NSW	Bo Totterman	1132 NE
6/04/2005	1	South Ballina Beach, NSW	Bo Totterman	1133 NE
30/04/2005	1	Broadwater Beach, Broadwater, NSW	Bo Totterman	1132 NE

Although very few Common Terns have been newly flagged in recent years, it is pleasing that sightings are continuing to be reported on their migration route down the eastern coast of Australia. Some of the records also indicate that a few individuals have moved their non-breeding area away from the Gippsland Lakes to the central NSW coast. One bird had also moved westwards into Port Phillip Bay – the south western limit of their main non-breeding area in south-east Australia. Previous recovery and flag-sighting data has shown that these Common Terns breed in eastern Siberia and migrate to Australia through countries such as Japan and the Philippines.

### Little Terns flagged at the Gippsland Lakes (orange flag right tarsus)

#### *Australian*

9/01/2004	1	Windang Inlet, Lake Illawarra, NSW	via Dave Priddel	475 NE
10/01/2004	2	Tathra, NSW	via Dave Priddel	242 NE
31/01/2004	1	Windang Inlet, Lake Illawarra, NSW	via Dave Priddel	475 NE
6/02/2005	1	Patch's Beach, South of Ballina, NSW	Bo Totterman	1133 NE
26/03/2005	1	Patch's Beach, South of Ballina, NSW	June Harris	1133 NE
31/03/2005	1	Salty Lagoon, Broadwater National Park, NSW	Bo Totterman	1121 NE

#### *Overseas*

26/05/2000	1	Shirako Beach, Shirako-machi, Chiba, Japan	Tatsuo Sato	8205 N
13/07/2001	1	Yatsu Tidal Flat, Narashino-Shi, Chiba, Tokyo Bay, Japan	Tadashi Nozaki	8231 N
29/06/2002	1	Shirako Beach, Shirako-machi, Chiba, Japan	Tatsuo Sato	8205 N

It was extremely pleasing to receive three, much delayed, further flag sightings of Little Terns from their breeding colonies in Japan. This now brings to seven the number of overseas flag sightings of adult Little Terns flagged at the Gippsland Lakes, with 6 of these being from Japan. There have also been several recoveries and sightings of individually colour-marked birds from Japan. It seems that Japan is the principal breeding area for the quite large numbers of Little Terns which migrate to the east coasts of Australia and down as far as the Gippsland Lakes for each Northern Hemisphere winter.



### Fairy Tern flagged at the Gippsland Lakes (orange flag right tarsus)

10/01/2004	1	Tathra, NSW	Darryl McKay	242 NE
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This is the first sighting outside Victoria of an orange-flagged Fairy Tern. There has however been a banded Fairy Tern from Victoria recovered (twice) in southern NSW. Most Fairy Terns seem to remain in Victoria throughout the year. In contrast, no Little Terns seem to remain in Victoria in the winter.

**Table 1. All sightings of Victorian-flagged terns processed into the AWSG leg-flag database between 27/06/2004 and 31/07/2005 – by species and country of sighting**

Species	Japan	Australia
Little Tern	3	7
Caspian Tern		26
Common Tern		15
Crested Tern		11
Fairy Tern		1
<b>Total</b>	<b>3</b>	<b>60</b>

Note: The Crested Tern total relates to colour banded birds seen away from southern Victorian breeding colonies

**Table 2. All sightings of Victorian-flagged terns processed into the AWSG leg-flag database as of 31/07/2005 – by species and country of sighting**

Species	Japan	China (Taiwan)	Philippines	Total Overseas	Australia
Little Tern	6	1		7	47
Common Tern	3		1	4	294
Caspian Tern					102
Crested Tern					35
Fairy Tern					1
<b>Total</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>11</b>	<b>479</b>

Note: The Crested Tern total relates to colour-banded birds seen away from southern Victorian breeding colonies

# Tern Breeding and Banding Report 2004/05

Clive Minton, Roz Jessop, Peter Collins, and Susan Taylor

To our considerable relief the 2004-05 breeding season for terns in Victoria was much better than that of the previous year, though as always it had both highlights and lowlights. The most pleasing result was a further large increase in the number of breeding Crested Terns, to a new record level. Fairy Terns also nested in record numbers in Corner Inlet, and for the first time ever were joined by a significant number of pairs of Little Terns. Unfortunately, as always for small terns in that highly weather/tide affected location, breeding success was minimal. Another positive was the return of the Corner Inlet Caspian Terns to a reasonable level of breeding success after the disaster of 2003-04. However, in contrast, Fairy Terns for the first time in at least 10 years were not found breeding anywhere in Western Port.

Detailed below are reports on the breeding and banding outcomes in the 2004/05 summer for each of the main tern species studied by the VWSG.

## Caspian Tern

Location	Breeding pairs	Chicks banded
Mud Islands	15	5
Corner Inlet	67	44
Totals	82	49

The Mud Islands colony continues to remain at a modest level and to produce only a small number of young to fledging each year. Predation by the vast numbers of Silver Gulls which breed all over Mud Islands (50,000–100,000 pairs) is thought to be the main cause of poor breeding success.

The colony near the usual location on the west end of Clonmel Island in Nooramunga National Park, Corner Inlet, was not as large as in some years, but managed to produce a good number of chicks relatively early in the season (December) and many are thought to have fledged successfully. Later nests and broods were however washed out by storm tides which occurred in late December and early January.

Two pairs of Caspian Terns also nested this year on the east end of Box Bank, but neither appeared to be successful. A single pair has nested at the same location in a number of past years. A single pair also nested on Ram's Island, off French Island, in Western Port, but again this was not successful.

## Crested Tern

Location	Breeding pairs	Chicks banded	Banded adults retrapped at nest	Sightings of colour banded adults*
Mud Islands	2450	1912	390	341 (1653)
The Nobbies	2600	2097	296	127 (684)
Corner Inlet	370	247	25	0
Totals	5420	4256	711	468 (2337)

\*Figure in brackets is the number of birds scanned

This is a phenomenal outcome, with a record number of breeding pairs and of chicks banded (previously 4550 pairs and 3812 chicks banded). It is probable that at least 4,600 chicks were actually fledged, as on the last visits to all three colonies there were still significant numbers of unhatched eggs.

There seems to have been a slight redistribution compared with other recent years between the Mud Islands and The Nobbies colonies, with relatively more birds at Mud Islands this year than in any year since 1999/2000. Maybe the food availability in Port Phillip Bay was particularly good in late 2004?

There was also a change in the distribution in Corner Inlet, with the breeding population being, unusually, split into two separate colonies. 270 pairs were in the usual location on the west end of Clonmel Island, but 100 pairs nested on the east end of Box Bank, for the first time ever. Both sites experienced reasonably good breeding success.

The table below shows the incredible growth in the number of breeding pairs of Crested Terns on the central Victorian coast over the last 20 years, since action was taken at Mud Islands to manage the habitat to improve breeding success. The only other known Crested Tern colonies in Victoria are off Mallacoota, in the far east, and at Killarney Beach – a small colony in the west. The number of breeding pairs at these are not known to have changed in recent years.

### Crested Tern Breeding pairs

Summer	Mud Islands	Corner Inlet	The Nobbies	Total
86–87	1000	–	–	1000
87–88	700	300	–	1000
88–89	1500	700	–	2200
89–90	1550	600	–	2150
90–91	1860	290	–	2150
91–92	1650	420	–	2070
92–93	1640	0?	–	1640?
93–94	1800	356	–	2156
94–95	1520	480	900	2900
95–96	1700	410	75	2185
96–97	1860	400	800	3060
97–98	800	550	120	1470
98–99	1500	250	700	2450
99–00	2600	420	1300	4320
00–01	1300	650	2050	4000
01–02	1300	300	1800	3400
02–03	1200	650	2700	4550
03–04	1300	110 (+)	3000	4410
04–05	2450	370	2600	5420

Not more than 1000 pairs of Crested Terns were nesting in the early and mid-1980s at the Corner Inlet and Mud Islands colonies. At both locations, breeding success was low, mainly due to flooding by storm tides. There was no apparent way of overcoming this in the Corner Inlet complex but it was considered that clearing the vegetation from a small area on the flat top of Mud Islands would enable the birds to move from the vulnerable beach nesting area to an area which was above storm tide level. An area the size of a tennis court was completely cleared of vegetation (mainly saltbush) immediately adjacent to where the birds had nested in recent years. The birds quickly adopted this new site. Since then this area has been maintained free of significant vegetation and the area was expanded at one time to 2-3 times its original size.

The table shows how the number of breeding pairs has grown over<sup>a</sup> the years, and that ultimately a new colony was formed at The Nobbies on Phillip Island. Retraps and sightings of banded birds at The Nobbies showed that nearly all the initial breeding birds had originally been hatched on Mud Islands. As chicks from The Nobbies matured (first breeding age is typically around 4 years), this colony grew even further, reaching 3000 pairs in only its tenth

season (2003/04). In contrast, the Corner Inlet colony, still subject to very variable annual breeding success, has remained at more or less the same population level (300-700 pairs) over the 20 year period.

Overall, with the record 5,420 nesting pairs of Crested Terns in the 2004/05 season at these three colonies, the breeding population has increased more than 5-fold. If ever there was a positive demonstration of the benefits of habitat management, this is it!

One other feature is apparent in the figures. Although there has generally been a steady growth in the breeding population from one year to the next, there was a dramatic decline in the 1997/98 season. This was associated with a huge reduction in food availability after a major disease and die off of the small fish stocks off Phillip Island and in Port Phillip Bay. The Crested Tern breeding population was only half that of the previous year. There was also a reduction in the breeding population in 1995/96, although this was not so marked. It was again caused by a shortage of food, but it appears that in that particular year only the colony at The Nobbies was affected.

There is some concern that the proposed dredging of the shipping channel in Port Phillip Bay may have some adverse effects on breeding Crested Terns and Caspian Terns at Mud Islands. The discolouration of the water in the southern parts of the bay and near The Heads may make it more difficult for terns (and gannets) to see their fish prey, which they catch by diving from a height. It has been recommended in the Environmental Effects Statement that dredging in the southern part of the bay therefore not be undertaken in the tern breeding season, which extends from early October to the end of January. It is hoped that the current dredging trial will therefore be completed by the end of September. It will be particularly important following this to measure the tern breeding population and breeding success at Mud Islands in the coming season.

### **Fairy Tern**

Yet again Fairy Terns nested in Nooramunga National Park, Corner Inlet, and yet again they were washed out not once but twice by storm tides. The first nesting attempt, in December, was by about 30 pairs on the east end of Box Bank, not far from the small new Crested Tern colony. However in early January, after the Crested Terns had hatched and some even fledged, but before the Fairy Tern eggs had been fully incubated, a storm tide completely inundated the relatively low flat dune breeding area.

The Fairy Terns re-nested, in record numbers, at the more sheltered location on the east end of Dream Island. 90 pairs were estimated to be present on 21<sup>st</sup> January, and there were 71 nests with eggs, as well as two with newly hatched chicks. There were many new scrapes made by birds which had not yet laid. More intensive studies at the colony by two ornithologists from New Zealand over the next few days resulted in an estimate of 90 pairs of nesting Fairy Terns. Unfortunately a huge storm in early February washed everything away and it is not thought that any Fairy Tern chicks successfully fledged.

The NZ team caught 11 adults at the nest to collect blood samples for DNA testing. This was part of a comparison they were making on the genetics of Australian Fairy Terns to compare with the small population of Fairy Terns which now breed regularly in North Island, NZ.

This year, for the first time over the last 10 or more years, Fairy Terns were not known to have nested anywhere in Western Port (or Port Phillip Bay). No nesting attempts were recorded at either the usual site, Ram's Island, or on Tortoise Head, or even at Rhyll. It appears that the massive adult mortality in late 2003 (thought possibly to be adult birds shot by hunters from a boat) has taken its toll both in reducing the adult breeding population and in deterring them from using Ram's Island.

## Little Tern

One or two pairs of Little Tern have occasionally bred with the Fairy Terns in Corner Inlet in previous years. But to our great amazement the intensive studies by the New Zealand team found 20 pairs of Little Terns with nests in the Fairy Tern colony on the east end of Dream Island between the 22<sup>nd</sup> and 25<sup>th</sup> January. Furthermore, there were also six Little x Fairy Tern mixed pairs, also with nests and eggs.

As no Little / Fairy Terns nested at some of the regular East Gippsland sites in 2004/05 (specifically Rigby Island at Lakes Entrance and Lake Tyers) it would seem that the likely explanation for the influx of Little Terns and of Fairy Terns to nest in Corner Inlet has been a transfer of breeding place by birds that nested at these other locations in previous years. Mixed pairs have also been noted in these colonies, and in southern NSW Little Tern colonies, quite regularly.

## Gippsland Lakes banding

Yet again, no opportunities were found for cannon-netting Common and Little Terns at the Gippsland Lakes during the January to March period in 2005. Ten to fifteen years ago, large non-breeding populations of Northern Hemisphere terns were present in the Gippsland Lakes every summer / early autumn, with typically up to 2000 Common Terns and often 500 Little Terns (in addition to any local breeding Little Terns and their fledged offspring). It would appear that the habitat has become less suitable in recent years. Possible contributors to this are:

- a) a reduction in food supply. In at least two recent years, algal blooms have been a problem and there have been associated fish die-offs.
- b) the sandy spits and islands on which the birds like to roost when not feeding have become smaller and more disturbed. This is particularly true of Pt Wilson, on Spermwhale Head, and of Albifrons Island near Ocean Grange
- c) The population of Crested Terns feeding and roosting in the lakes is hugely greater than it used to be. This is a consequence of the much higher breeding population now present in Victoria. Most of the Crested Terns in the Gippsland Lakes during the summer are immature birds aged between one and four years i.e. pre-breeding birds. These larger terns certainly fully occupy available roosting space and possibly compete for food with the medium / small terns.



## South Australian Team Catches 2004/05

### Maureen Christie

In my first report last year, I outlined the targets that have been set for our group. Since then we have met with varying success in meeting those targets. As members grow in confidence, our catch rate is improving with catches being made at 11 of the 14 attempts. Catch size remains small, a reflection of the problems associated with catching with a small team. See Table 1 for details of individual catches and Table 2 for the cumulative totals of each species caught by month.

Although our group officially targets both Sanderling and Ruddy Turnstone, we find that the opportunity to target Sanderling rarely presents itself. This year we did not have an opportunity to target this species.

We are slowly accumulating data on Turnstone in months that the VWSG has the least data. Months that have little data, with totals to Dec 2003 in brackets, are: May (1), June (18), July (55), August (28) and September (33). In this context, catches of 22 on the 20<sup>th</sup> July and 26 on the 28<sup>th</sup> September 2004 become far more significant than the numbers suggest.

More is also being learnt about the departure date of Turnstone. Catches of Turnstones with weights suggesting that they are soon to depart, have now been made on the 21<sup>st</sup>, 27<sup>th</sup> and 29<sup>th</sup> April. This year the flock in Gerloff Bay that had been targeted on the 29<sup>th</sup>, were still there on the 1<sup>st</sup> May. Only juvenile birds were present on the 2<sup>nd</sup> May. This makes departure later than previously believed.

The November visit by the VWSG saw the commencement of a new study on turnstone. The primary focus of study is to be site fidelity and movement along the coast, but as time goes on we also hope to obtain data on mortality rate. To date 203 engraved alpha numeric orange flags have been placed on the tibia, with plain yellow flags on the tarsus. Obviously a study such as this is very much dependent on sightings of the flagged birds. The boundaries are Piccaninnie Ponds and Nora Creina and we are endeavouring to cover this section of coast at least once a month.

Some notes on what I have learnt about the mechanics of observing engraved flags in the field:

- Telescopes are necessary for the majority of sightings. Occasionally, if conditions are perfect, it is possible to read a flag with binoculars.
- Reading engraved flags requires much more concentration than scanning for plain flags.
- I need to be as close as 20m.
- Flock size. My observations have been made easier because I am usually dealing with less than 100 Turnstone – often less than 50. The smaller the flock the easier it is to be certain that all flags have been seen.
- Strong wind and dull, overcast conditions make observation difficult.
- It helps to have the birds moving about a little – if birds are roosting and a flag is tucked out of sight you have virtually no hope of reading the flag.
- Additional effort is required to successfully check Turnstones when they are actively feeding in heaps of seaweed. Not only is it difficult to read engraved flags, it is also difficult

to get an overall count of the number of flagged birds in the flock. When birds are feeding on banks of weed on the other side of stagnant pools at Danger Point I have found it impossible to collect worthwhile data.

- The best return on effort is when Turnstone are feeding on a relatively clean sandy beach. They do not do this very often, but when they do results can be extremely good – in one observation period it only took little over an hour to read 20 codes and identify 6 old flags in a flock of 42 Turnstone at Nene Valley. The tide slowly pushed the flock closer and closer to the vehicle until the feeding Turnstone were only 10m away.
- The mood of the Turnstone can determine how successful a particular observation period will be. Sometimes birds are very skittish, other times they are intent on feeding and nothing will disturb them. The Nene Valley birds described above were very loath to move – a fisheries vehicle drove between the flock and the tide line without the birds rising! It was the 25<sup>th</sup> April, and so the imperative of putting on that extra gram presumably outweighed other considerations.
- Turnstone feeding on flat rock platforms can provide easy sightings, but flocks on rock outcrops can be difficult depending on where the birds are perching and how much movement there is.
- Having a high proportion of birds with the old orange/yellow flags adds to the difficulty of deciding how many are old flags and how many are new.
- Observers with binoculars can help with a total count of Turnstones and the total number of flagged birds.

It is still very early into the study, but I thought members would be interested in a summary of what has been seen to date. The sighting rate of 65% for birds flagged in November is very encouraging. That the birds flagged in March/April have a much lower rate of 15% is not surprising since there was so little opportunity to see them before the adults departed on migration. Of the overwintering flock, the majority of flagged birds sighted have been juveniles. One bird with an old O/Y and hence an adult, was carrying an injury and so presumably was not fit enough to attempt migration. D4, banded on 22/11/04 was aged as a 2+. Z8 was aged as a 2+ female on 18/03/05.

It is already apparent that some flocks are more cohesive than others – of the 26 birds banded at Nene Valley, all have been sighted. The majority have been sighted at Nene Valley. Three individuals were seen elsewhere, one at Beachport, one at Carpenter Rocks, and the only juvenile flagged started the season at Nene Valley but moved to Pelican Point later in the winter.

With individuals being able to be identified in the field, it is possible to build up a register of the sex of individuals. The plumage characteristics of Turnstones make it easier to confidently identify males. The duller plumage of females makes confusion with juvenile plumage a problem, especially in the field. All birds sexed as female were sexed at the time of banding.

So far we have only had one sighting of an engraved flag from outside the study area - a male C2, resplendent in 100% breeding plumage, was seen by Adrian Boyle at Mai Po Marshes, Hong Kong on 10/05/05. It was banded on 22<sup>nd</sup> November - the first day that we used the engraved flags. We actually had three catches that day - C2 was banded on the second catch of the day at 8 Mile Creek.

We anxiously await the return of the adults to see if individuals return to areas near where they were banded!

A highlight of the year was our first catches of Sharp-tailed Sandpiper. A flock of 500+ were at Pelican Point for several weeks late September/early October. On 19<sup>th</sup> October a difficult catch over rocks and on a dodge tide, with a team of three, resulted in a very satisfying catch of 62 (59 Sharp-tailed Sandpiper, 2 Curlew Sandpiper and 1 Turnstone).

Thank you to the members of the group who have worked hard to produce these results. Thank you 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 3. NUMBER OF RUDDY TURNSTONE FLAGGED AND OBSERVED AT VARIOUS LOCATIONS IN SE SOUTH AUSTRALIA**

Site	Total	Flagged		Sighted		%	Sexed	
	Flagged	Adult	Juv	Adult	Juv	Sighted	Male	Female
Deep Creek	17	16	1	11			1	2
8 Mile Creek	11	9	2	6	1		1	
Pic. Ponds	13	3	10	3	5			
Nene Valley	26	25	1	25	1		11	1
Blackfellows Caves	16	15	1	8			2	
Beachport	26	23	3	10	1			
Pelican Point	1	1		1				
Totals November, 2004	110	92	18	64	8	65%	15	3
Danger Point	17	15	2	1	2		5	3
Shack Creek	27	26	1	3	1		11	15
8 Mile Creek	26	23	3	3	1		12	11
Danger Point	10	9	1	2	1		4	5
Nene Valley	2	2						2
Gerloff Bay	8	8					3	4
Totals March/April 2005	90	83	7	9	5	15%	35	40
Summer 2004/05 Total	200	175	25	73	13	43%	50	43
BlackfellowsCaves 7.6.05	3		3		1			



TABLE 1. SOUTH AUSTRALIAN CATCHES 01.05.2004 TO 31.07.2005.

DATE	PLACE	Sanderling	Ruddy Turnstone	Red-necked Stint	Curlew Sandpiper	Sharp-tailed Sandpiper	Other	TOTAL
20.07.04	Port MacDonnell		22	6				28
24.08.04	Port MacDonnell		4	7	1			12
14.09.04	Port MacDonnell		7	11				18
28.09.04	Blackfollows Caves		26	5		14		31
05.10.05	Pelican Point			9	2	59		23
19.10.05	Pelican Point		1				**1 Pied Oystercatcher	62
02.11.04	Blackfollows Caves						**2 Pied Oystercatcher	1
23.12.04	Blackfollows Caves						**2 Hooded Plover	4
05.04.05	Cape Banks Light							*
12.04.05	Gerloff Bay							*
26.04.05	Nene Valley		2	21				23
29.04.05	Gerloff Bay		9					9
17.05.05	Nene Valley			1			(misfire!)	1
31.05.05	Port MacDonnell		5	5				*
07.06.05	Blackfollows Caves		76	65	3	73	5	10
	Sub-totals		162	208	9		27	222
	b/f 1.12.00-30.4.04	26	238	273	12	73	32	432
	TOTALS TO DATE	26	238	273	12	73	32	654

\*net set, no catch made. \*\* chicks/runners'

TABLE 2. WADERS CAUGHT BY MONTH FROM 1/05/2004 TO 31.07.2005

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sanderling		17	2	2				5					26
Ruddy Turnstone			1	109		16	46	31	33	1	1		238
Red-necked Stint		34	34	39	1	20	49	47	16	9	1	23	273
Curlew Sandpiper						2	7	1		2			12
Sharp-tailed Sandpiper										73			73
Others		4	8	5				1			2	12	32
TOTALS	nil	55	45	155	1	38	102	85	49	85	4	35	654

## From little things ...

Clive Minton

From little things can come far more than you could expect! Nowhere is this better illustrated than in flag sightings. There are a number of species which have only been flagged in very small quantities in south-east Australia which have given a quite unexpectedly high number of subsequent flag sightings. The most extreme example relates to Bar-tailed Godwits banded and flagged in the south-east corner of South Australia.

The VWSG has been visiting the Port MacDonnell (Brown Bay), Carpenter Rocks, Canunda NP and Beachport areas of the coast of south-east South Australia since November 1993. Since then, nearly 8000 waders have been caught and over 4000 leg-flagged. These totals include those caught by locally-based VWSG member Maureen Christie and her small but dedicated team.

The main target species, for which the visits were initiated, are Sanderling and Ruddy Turnstone, but there has been a significant "bycatch" of other species over the years. Least among these is the Bar-tailed Godwit with only 14 banded, 11 of which were leg flagged with the Orange/Yellow South Australian combination. One of the reasons so few Bar-tailed Godwits have been caught is that the area is not their normal habitat. In most years none are even seen during the week-long visit. But in years of good Bar-tailed Godwit breeding success, juvenile birds in small numbers (usually less than ten) are occasionally seen at various locations on this section of the South Australian coast.

The first three were banded on the 26<sup>th</sup> February 1997, and were not flagged as this was before the South Australian code was introduced. One was thought to be a second year bird, in heavy wing moult, rather than a first year bird. Three more were caught on 21<sup>st</sup> October 2002, and this time all three were O/Y flagged. A further eight juveniles were caught and flagged on 23<sup>rd</sup> November 2004. And thereby hangs a (sorry) tale! On that day we had earlier made a catch of Ruddy Turnstones at Nene Valley. This was not far from where Maureen Christie, the extremely energetic and enthusiastic local VWSG member, actually lives, at Carpenter Rocks. We decided that a further catch that day was unlikely and so it was more logical for her to return home at the same time as we made our way back in the opposite direction to our base at Paul Feast's house at Green Point on the shores of Brown Bay. Maureen was hesitant about returning home, not wanting to risk the slight chance that we would be tempted to make another catch if we saw an opportunity. We did. As we came back along the shore round Brown Bay, sure enough there was the little group of Bar-tailed Godwit which we had seen there the previous day. There had been 10, but now there were only nine. They were feeding close inshore on a piece of beach where it looked possible to set a net which would reach out to catch the birds wading in the water. So we stopped, set the net, and hey presto, not long afterwards, fired it and caught eight. We hardly dared tell Maureen the next day – she wasn't pleased!!

It was immediately apparent to us that all eight birds were in top rate condition even though this was an atypical habitat. All weighed at least 100g more than the typical weight of an adult moulting Bar-tailed Godwit at that time of year (in fact we had caught 28 adult Bar-tailed Godwits at Queenscliff on 19 November, only four days previously). This suggested that they planned a further onward movement to a non-breeding location elsewhere. We even surmised that this might be New Zealand, as there is a lot of movement of Bar-tailed Godwits from eastern Australia to NZ. We had also previously had a juvenile Ruddy Turnstone banded in late November in SA turn up less than a month later in NZ. Even more relevant one of the three juvenile godwits from the 21<sup>st</sup> October 2002 had previously been reported (twice) from the South Island of NZ. However, we could hardly believe it when a report was received in early December that three juvenile O/Y flagged Bar-tailed Godwits had been seen together at Lake Grassmere in the north east corner of South Island NZ on

1<sup>st</sup> December. This was only eight days after they were flagged in SA – 2,400 km away! Over the next 6 months, regular sightings of O/Y Bar-tailed Godwits were received from NZ, particularly from the Avon-Heathcote estuary near Christchurch. A report was also received of an O/Y Bar-tailed Godwit at Robbins Island in northwestern Tasmania on the 12<sup>th</sup> December.

The table below gives full details of all sightings reported to 30 June 2005 of Bar-tailed Godwits O/Y-flagged in SA. There is an amazing total of 24 records involving 33 individual bird sightings. Clearly some individual birds have been seen several times, and it is not possible to be sure exactly how many individuals have been involved. But a best estimate of the situation is given below:

- a) one of the three birds flagged on 21/10/02 subsequently moved to Awarua Bay, near Invercargill, at the south end of the South Island in NZ. There have been four sightings of this bird between 29/12/03 and 08/02/05 indicating that it was probably there in both the 2003-4 and 2004-5 non-breeding seasons.
- b) the three birds which were at Lake Grassmere on 1<sup>st</sup> December 2004 probably moved on to the Avon-Heathcote estuary near Christchurch where between one and three individuals were seen on thirteen different occasions between 03/01/05 and 29/05/05.
- c) the sighting in northern Tasmania on 12/12/04 clearly relates to a different bird. As the area is not as closely watched at the main locations in NZ, it could well be that this bird has remained in that area.
- d) the two records in March 2005 (12<sup>th</sup> and 20<sup>th</sup>) from the North Island of NZ quite possibly relate to a different individual again.
- e) because of the further elapse of time, it is not possible to form strong views on whether additional different birds were involved in three further sightings in NZ. The bird seen on 1<sup>st</sup> April in the Mangawhai Estuary near Auckland could possibly have been the same as the bird seen earlier in the Bay of Plenty, and the bird on 24<sup>th</sup> March and on 24<sup>th</sup> June near Nelson, at the north end of South Island, could possibly have been one of the Lake Grassmere / Avon-Heathcote estuary birds.

In summary, one of the three Bar-tailed Godwits flagged on 21/10/02 moved to NZ and has now become a "regular" there in the non-breeding season. At least four of the eight birds marked on the 23/11/04 moved to NZ (three very quickly), and another one moved to NW Tasmania. As if this isn't sufficient return on the investment of time and effort, one of the three Bar-tailed Godwits banded on 26 February 1997 was also recovered. It was recaptured at Rhyll on Phillip Island, in Victoria, on 9<sup>th</sup> October 1999.

So, one of the lessons from this amazing story is that we should not ignore the opportunity to catch and flag small numbers of birds, especially of species at locations where few have been marked previously. These particular records strongly support the general pattern of Bar-tailed Godwit movements from eastern Australia to NZ. In this case they indicate also that passage of juveniles can still be occurring in late November.

Our thanks for making this exciting outcome go especially to the large number of skilled and dedicated wader observers and flag-searchers in NZ who have made and reported the majority of these sightings. Our apologies go to Maureen Christie!

**TABLE 1. SIGHTINGS OF BAR-TAILED GODWITS O/Y FLAGGED IN SOUTH AUSTRALIA UNTIL 30/06/05**

Date	No.	Place seen
29/12/2003	1	Awarua Bay, near Invercargill, South Island
24/10/2004	1	Awarua Bay, near Invercargill, South Island
1/12/2004	3	Lake Grassmere, southeast of Seddon, South Island
12/12/2004	1	Bird Point, Robbins Island, northwestern Tasmania
3/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
9/01/2005	1	Awarua Bay, near Invercargill, South Island
11/01/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
8/02/2005	3	Avon-Heathcote Estuary, Christchurch, South Island
8/02/2005	1	Awarua Bay, near Invercargill, South Island
17/02/2005	2	Avon-Heathcote Estuary, Christchurch, South Island
4/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
6/03/2005	2	Avon-Heathcote Estuary, Christchurch, South Island
8/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
9/03/2005	2	Avon-Heathcote Estuary, Christchurch, South Island
12/03/2005	1	Ohiwa Harbour, Bay of Plenty, North Island
15/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
20/03/2005	1	Little Waihi, Bay of Plenty, North Island
24/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
24/03/2005	1	Nelson Haven, South Island
25/03/2005	1	Avon-Heathcote Estuary, Christchurch, South Island
1/04/2005	1	Mangawhai Estuary, Auckland
9/04/2005	2	Avon-Heathcote Estuary, Christchurch, South Island
29/05/2005	2	Avon-Heathcote Estuary, Christchurch, South Island
24/06/2005	1	Bells Is, Waimea Inlet, near Nelson, South Island



Clive's new chair offers many possibilities. | Clive, like king Canute, orders the tide to stop

# Arctic breeding success based on juvenile ratios in waders in Australia in the 2004/2005 austral summer

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

## Introduction

Increased emphasis worldwide is now being placed on the demographics of waders. Long-term count data is showing major changes or trends in the populations of various species. The causes of these population changes can only be fully explained if there is a parallel knowledge of the factors which control the population, i.e. the recruitment rate of new birds into the population (strongly dependent on annual breeding success) and survival rates (or, conversely, mortality rates). Long-term data sets are necessary and consistency in the methods of gathering data, and analysing it, are prerequisites.

This is the sixth successive year in which the results of annually monitoring the percentage of juveniles in catches of waders made during the non-breeding season in South-east Australia (SEA) and North-west Australia (NWA) have been published in *Arctic Birds* (see *Arctic Birds* 2-6). In this report the results for 2004/2005 are detailed and used as an indication of breeding success for the Arctic summer of 2004.

## Objectives

Australia is the terminus of the southward migration of many wader species and is ideally located to monitor the demographics of birds using the East Asian-Australasian Flyway. Thus the fieldwork banding programmes of the Australasian Wader Studies Group (AWSG) in NW Australia and the Victorian Wader Study Group (VWSG) in SE Australia, in the period of November to March each year, are strongly oriented towards catching adequate-sized samples of as wide a variety of species as possible. The objective is to obtain annual measures of breeding success and survival. This report concentrates on the breeding success results.

## Methods

The majority of waders are caught by cannon netting at daytime high tide roosts. Because mist netting worldwide has been shown to generally catch a greater proportion of juveniles than cannon netting, the mist netting data (only available for NWA) is tabulated separately. Most emphasis in this report is placed on data derived from cannon netting.

Only catches in periods where banding and counting results have shown populations to be relatively stable are included. For NWA, this period is November 1<sup>st</sup> (by which time most juveniles have arrived) to mid-March (when adults start departing). The corresponding dates for SEA are mid-November to the third week in March (but end February for Sharp-tailed Sandpiper and Curlew Sandpiper).

As usual, the number of catches that make up the sample for each species is shown, broken down into large (>50) and small (<50) categories. Recent analyses have shown that there is no general tendency for a consistent relationship between the catch size and the proportion of juveniles, and therefore both "large" and "small" catches are combined in the analysis.

This year, for the first time, standard errors are also included for the cannon-netted samples. The high standard errors associated with small catches clearly show the justification for the relatively arbitrary exclusion in the past of total catch samples of less than 30 birds from the more detailed analyses of percentage juvenile figures.

There is evidence accumulating that shows that the age distribution of waders may vary on a macro- and on a micro-scale. Clearly the more catch samples that are available, and the

larger the catch total is for a species in relation to its population, the more accurate the percentage juvenile figure is likely to be. But, at best, it is only an estimate of the proportion of juveniles in the population, and as such it is perhaps better considered as an index of annual breeding success. The sources of potential bias and the measures taken to minimise these have been discussed in more detail in previous annual reports, in *Arctic Birds* 2-6.

## **Results**

Catch details and percentage juvenile data for the seven species monitored annually in SEA are shown in Table 1. Adequate samples of all species were obtained. The total of 6,051 Red-necked Stints was the second highest total in the monitoring period of 27 years for which data is available. Similarly, the 554 Sharp-tailed Sandpipers caught was the third highest sampling total in 26 years. In contrast, considerable difficulty was experienced in obtaining an adequate sample for Curlew Sandpipers – it took 13 catches to obtain an accumulated total of only 156, with only one catch containing more than 50 Curlew Sandpipers. This difficulty is mainly a reflection of the overall low levels of the Curlew Sandpiper population at present compared with 15 or more years ago. The repeated attempts to catch Curlew Sandpipers is also the main reason for the high Red-necked Stint total, with 29 catches altogether, compared with 19 the previous year. The Sanderling sample of 512 was also the largest ever (in 14 years of data).

Similar data from NWA is shown in Table 2 for the seven Arctic-breeding species and the six non-Arctic breeding species for which the sample size in the 2004/2005 non-breeding season was at least 10. All this data was obtained during a special AWSG expedition to NWA, between February 13 and March 5, for which a principal objective was to obtain this annual percentage juvenile monitoring data. As usual, the largest sample size (1,037) was of Great Knot. They fill a similar role to Red-necked Stints in SEA, occurring in almost every catch and making it difficult to obtain adequate samples of other targeted species. This is exacerbated by the extremely hot and humid conditions encountered in the tropical environment of NWA in the November to mid-March sampling period making it necessary to limit the size of catches. In spite of these problems, good samples of eight different species were obtained, and modest samples of five others. As in SEA, Curlew Sandpipers were a problem and it took 11 separate samples of these to obtain a catch total of 150 birds.

The full results for all seven species of migratory waders which were sampled by mist netting in NWA are shown in Table 3. Catch totals were of an adequate size for analysis for only three species.

Tables 4 and 5 show how the percentage juvenile figures in the 2004/2005 season compare with the figures obtained in each of the previous six years. The average of the percentage juvenile figures for these seven seasons is calculated as a benchmark of average breeding success in recent years. Only those species in which the majority of years have been adequately sampled are included in these tables.

## **Discussion**

### **South East Australia**

For the second year in succession, there was a marked variability between species in their apparent breeding success. Overall, however, the percentage juvenile figures for most species were rather higher in 2004/2005 than in 2003/2004. Nevertheless, the 2004 Arctic breeding season would only be classed as moderate based on the figures from SEA.

The highlight in 2004/2005 was the second successive year of high breeding productivity by Sharp-tailed Sandpiper. The 42.2% juvenile figure has only been bettered once in the 24 years for which data is available. It is twice the average level of 21% for the last seven years and that figure includes the exceptionally high percentage juvenile figures for both last year and this year. It is very noticeable that Sharp-tailed Sandpiper have been much more

numerous and widespread throughout SEA during the past two non-breeding seasons, but especially during 2004/2005. After a long period of decline in numbers, these two successive years of good reproductive success will hopefully reverse the previous downwards trend in population.

Bar-tailed Godwit also had a brilliant breeding year in 2004. Banding and flagging has shown that all the Bar-tailed Godwit that visit SEA are from the Alaskan, not the Siberian, breeding grounds. The 37.6% juvenile figure was the second highest in 16 years of available data, and was more than twice the average of the last seven years. With three of the past four years' results indicating very poor breeding success, the good performance in 2004 was timely.

Curlew Sandpiper that visit SEA had a better than average breeding success outcome. Although the figure of 21.8% juveniles appears modest, it has only been bettered three times in the 26 years for which data is available. Sanderling and Ruddy Turnstone appear to have had only moderate breeding success in 2004, with percentage juvenile figures being close to the average of recent years.

The bad news relating to 2004 breeding success concerns Red-necked Stint and Red Knot. The 9.8% juveniles for Red-necked Stint is less than half the figure for the last seven years. This average figure is boosted by four exceptionally good years for breeding success by the Red-necked Stint in the six years between 1998 and 2003. Thus on a long-term basis, the Red-necked Stint outcome for 2004 does not appear quite so poor with eight years having lower percentage juvenile outcomes in the 27 years for which data is available. However it is the second-lowest figure for Red-necked Stint in the last 12 years. In the early part of the 2004/2005 sampling period, it was feared that the data would show it to be a disastrous breeding year in 2004 for this species, comparable with the renowned universal worst-ever Arctic-breeding success year of 1992. The first major sample, two catches totalling 1,732 Red-necked Stint at one of the main monitoring locations, contained only 6.6% juveniles, the same figure as obtained at that location after the 1992 breeding season. These were the equal-lowest figures in 20 years of sampling at this site. It was of particular concern also because this site normally holds a higher percentage of juveniles than other sampling locations in SEA. It is fortunate that later sampling at the other regular monitoring locations did not show quite such a poor breeding outcome for the Red-necked Stint.

The proportion of juvenile Red Knot in catches was the fourth lowest in 14 years of sampling. Again, the figure was only a little over half the average for the recent years where adequate samples have been available. The apparent high absolute figure of 29.5% for 2004/2005 needs to be looked at in context because the SEA population of juvenile Red Knot is greatly augmented each year by many of the juveniles which will ultimately spend their non-breeding season in future years in New Zealand. These juveniles remain in SEA in their first austral summer but revert to non-breeding areas in New Zealand in subsequent years. Percentage juvenile figures for Red Knot thus fluctuate more widely, and about a much higher mean, than for any other species.

### **North West Australia**

For waders spending the non-breeding season in North West Australia, the 2004 northern breeding season seems to have been a poor one. Only one species, Curlew Sandpiper, had a higher percentage juvenile figure in 2004/05 than in 2003/04. In all but one of the seven species where adequate data is available in 2004/05 the percentage juvenile figure in that year was lower than the seven year average.

No species sampled showed a percentage juvenile figure that would be classed as very good. Curlew Sandpiper had the best breeding outcome with 21.3% juveniles being the second best result in the last seven years. This is markedly better than the poor outcome in 2003/04 and significantly above the seven year average of 15%. It is also of interest that the

Curllew Sandpiper figure in NWA was similar to that in SEA (21.8%), a closer correlation than observed in most years.

Greater Sand Plover and Terek Sandpiper had breeding outcomes close to the seven year average. The percentage juvenile figure for Bar-tailed Godwit was quite low, suggesting a poor breeding season for central Northern Siberian breeding Bar-tailed Godwit especially in comparison with the excellent breeding success of those in Alaska. Grey-tailed Tattler also had a poor breeding outcome.

The worst apparent breeding performances in the 2004 Arctic summer were, however, Great Knot and, as in SEA, Red-necked Stint. The 3.2% figure for Great Knot is the lowest for six years and is only at a level equivalent to a third of the annual average percentage juvenile figure. Red-necked Stint were not quite as bad, with a percentage juvenile figure just under half of the seven year average. The 13.2% figure for 2004/05 was marginally higher than the 9.8% figure for SEA.

The mist netted samples are currently mostly too small, and the data series too short, for any significant conclusions to be drawn from percentage juvenile figures at this stage. Hopefully, in future years data will continue to accumulate on species that are mainly caught by this technique so that valid annual comparisons can be made.

### **Conclusion**

Fieldwork programs for the 2005-06 season have already been drawn up for SEA and NWA. This should facilitate the continuing extension of the percentage juvenile monitoring data and its use as an indication of breeding success for each species. The NWA sampling next season will mainly take place much earlier, from November 12<sup>th</sup> to December 3<sup>rd</sup> during the next "expedition" to the area. A consequence of this is that the main fieldwork in SEA will be rather later in the overall sampling period next year.

### **Acknowledgements**

Extreme thanks are due to all those persons who spent so much time and effort in 2004-05 in the field trying to build up adequate catch samples for the target range of species being monitored. Their perseverance eventually paid off. Thanks are also due to the Australian Bird and Bat Banding Scheme and to the state environment authorities that granted permits for the banding fieldwork. Finally, Ken Rogers is thanked for calculating the standard errors.



Waders roosting at Stockyard Point (photo Pete Collins)



Table 1. Percentage of juvenile/first year waders in cannon-net catches in South-east Australia in 2004/2005.

Species	No. of catches		Total caught	Juv./1st year		S.E. (% pts)
	Large (>50)	Small (<50)		(#)	(%)	
Red-necked Stint - <i>Calidris ruficollis</i>	13	16	6051	596	9.8	0.4
Sharp-tailed Sandpiper - <i>C. acuminata</i>	5	5	554	234	42.2	2.1
Sanderling - <i>C. alba</i>	3	2	512	83	16.2	1.6
Ruddy Turnstone - <i>Arenaria interpres</i>	0	11	244	30	12.3	2.1
Curlew Sandpiper - <i>C. ferruginea</i>	1	12	156	34	21.8	3.3
Red Knot - <i>C. canutus</i>	1	3	122	36	29.5	4.1
Bar-tailed Godwit - <i>Limosa lapponica</i>	0	4	85	32	37.6	5.3

Also Great Knot (19 caught, 0 juveniles), Pacific Golden Plover (16,0), Grey Plover (7,0), and Whimbrel (3,0). 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 23 Mar are included.

**Table 2. Percentage of juvenile/first year waders in cannon-net catches in North-west Australia in 2004/2005.**

Species	No. of catches		Total caught	Juv./1st year		S.E. (% pts)
	Large (>50)	Small (<50)		(#)	(%)	
Great Knot - <i>Calidris tenuirostris</i>	6	5	1037	33	3.2	0.5
Bar-tailed Godwit - <i>Limosa lapponica</i>	2	3	270	18	6.7	1.5
Red-necked Stint - <i>C. ruficollis</i>	1	6	152	20	13.2	2.7
Curlew Sandpiper - <i>C. ferruginea</i>	1	10	150	32	21.3	3.3
Ruddy Turnstone - <i>Arenaria interpres</i>	0	3	24	4	(16.7)	7.6
Red Knot - <i>C. canutus</i>	0	3	24	3	(12.5)	6.8
Broad-billed Sandpiper - <i>Limicola falcinellus</i>	0	1	15	6	(40.0)	12.6
Non-Arctic northern migrants						
Greater Sand Plover - <i>Charadrius leschenaultii</i>	3	5	351	74	21.1	2.2
Terek Sandpiper - <i>Xenus cinereus</i>	1	9	231	32	13.9	2.3
Grey-tailed Tattler - <i>Heteroscelus brevipes</i>	2	8	208	22	10.6	2.1
Black tailed Godwit - <i>L. limosa</i>	1	1	52	2	3.8	2.7
Oriental Plover - <i>Ch. veredus</i>	0	2	21	11	(52.4)	10.9
Little Curlew - <i>Numenius minutus</i>	0	3	10	4	(40.0)	15.5

Also Marsh Sandpiper (6 caught, 0 juveniles), Common Greenshank (5, 0), Lesser Sand Plover (4, 2), Grey Plover (3, 0), Pacific Golden Plover (2, 0), Asian Dowitcher (1, 0), and Sanderling (1, 1). All birds cannon netted in period 1 Nov 2004 to mid-Mar 2005 (actually all in period 13 Feb to 5 Mar 2005).

**Table 3. Percentage juvenile/first year waders in mist-net catches in North-west Australia in 2004/2005.**

Species	No. of catches		Total caught	Juv./1st year	% Juv./1st year
	Large (>50)	Small (<50)			
Oriental Plover - <i>Charadrius veredus</i>	1	1	91	52	57.1
Sharp-tailed Sandpiper - <i>Calidris acuminata</i>	0	4	110	19	17.3
Marsh Sandpiper - <i>Tringa stagnatilis</i>	0	3	9	5	-
Wood Sandpiper - <i>T. glareola</i>	0	3	7	3	-
Long-toed Stint - <i>C. subminuta</i>	0	2	4	1	-
Oriental Pratincole - <i>Glareola maldivarum</i>	0	3	44	12	27.3
Pin-tailed Snipe - <i>Gallinago stenura</i>	0	1	1	0	-

All birds mist-netted near Broome and at Anna Plains (near 80-Mile Beach) between 30 Oct 2004 and 26 Feb 2005.

**Table 4. Percentage of first year birds in wader catches in South-east Australia 1998/1999 to 2004/2005.**

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	Average
Ruddy Turnstone - <i>Arenaria interpres</i>	6.2	29	10	9.3	17	6.7	12	13
Red-necked Stint - <i>Calidris ruficollis</i>	32	23	13	35	13	23	10	21
Curlew Sandpiper - <i>C. ferruginea</i>	4.1	20	6.8	27	15	15	22	16
Sharp-tailed Sandpiper - <i>C. acuminata</i>	11	10	16	7.9	20	39	42	21
Sanderling - <i>C. alba</i>	10	13	2.9	10	43	2.7	16	14
Red Knot - <i>C. canutus</i>	(2.8)	38	52	69	(92)	(86)	29	53
Bar-tailed Godwit - <i>Limosa lapponica</i>	41	19	3.6	1.4	16	2.3	38	17

All birds cannon-netted between late Nov and third week in Mar (except Sharp-tailed Sandpiper and Curlew Sandpiper to end Feb only). Averages exclude figures in brackets (small samples).

Table 5. Percentage of first year birds in wader catches in North-west Australia 1998/1999 to 2004/2005.

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	Average
Red-necked Stint - <i>Calidris ruficollis</i>	26	46	15	17	41	10	13	24
Curlw Sandpiper - <i>C. ferruginea</i>	9.3	22	11	19	15	7.4	21	15
Great Knot - <i>C. tenuirostris</i>	2.4	4.8	18	5.2	17	16	3.2	9
Red Knot - <i>C. canutus</i>	3.3	14	9.6	5.4	32	3.2	(12)	11
Bar-tailed Godwit - <i>Limosa lapponica</i>	2.0	10	4.8	15	13	9.0	6.7	9
Non-Arctic northern migrants								
Greater Sand Plover - <i>Charadrius leschenaultii</i>	25	33	22	13	32	24	21	24
Terek Sandpiper - <i>Xenus cinereus</i>	12	(0)	8.5	12	11	19	14	13
Grey-tailed Tattler - <i>Heteroscelus brevipes</i>	26	(44)	17	17	9.0	14	11	16
Little Curlew - <i>Numenius minutus</i>	57	33	-	36	30	-	(40)	39

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

# Adequacy of bill measurements for sexing oystercatchers in the field; a genetic approach

Patrick-Jean Guay

Both the Sooty and the Pied Oystercatcher occur along coastlines throughout most of Australia. Interestingly, Pied and Sooty Oystercatchers use different types of habitat; generally Sooty Oystercatchers on rocky shores and Pied Oystercatchers on sandier substrates. The level of bill wear is predicted to vary with foraging habitat. Therefore, birds foraging on rocky shores would probably suffer more extensive bill wear than birds foraging on mud flats or sandy beaches. It is unclear how differential bill wear can influence the measurements of sex ratio of catches throughout Australia. The DNA analysis will be used to confirm or otherwise the efficacy of sexing oystercatchers using biometrics.

While in humans, males have two different sex chromosomes, X and Y, and females have two copies of the same sex chromosome, X, the genetics is reversed in birds, with the female having the W and Z sex chromosomes and the male having two copies of the Z chromosome. This difference allows us to genetically sex birds. Although the Z and the W sex chromosomes are different, there are strong similarities. Both chromosomes contain a region called "CHD", which is shorter in the W chromosome. Using a technique called Polymerase Chain Reaction, it is possible to amplify this region of the sex chromosomes. Using agarose gel electrophoresis, it is then possible to differentiate between the CHD region of the W chromosome and that of the Z chromosome therefore allowing sexing of birds. Figure 1 shows the result of separation of the CHD region of males and females.

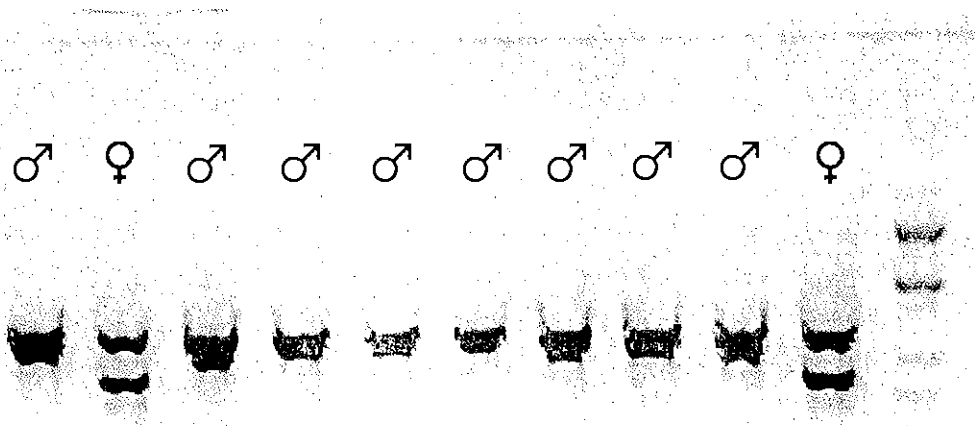


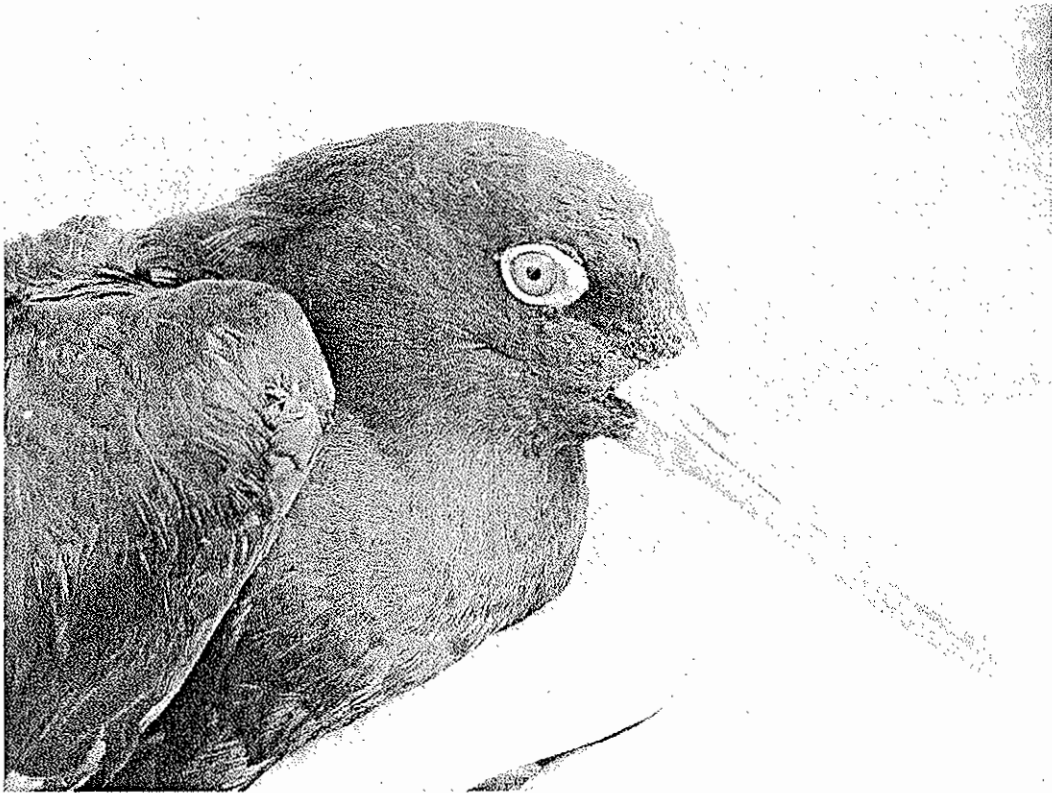
Figure 1: Agarose gel electrophoresis of the amplified CHD regions of male and female Pied Oystercatchers. The females present two bands while the males show only one band. The last lane on the right is a standard size marker.

## Methods

Genomic DNA was extracted from the blood using the "salting out" procedure. Primers 2550F / 2718R were used to sex individuals (Fridolfsson and Ellegren 1999 *J. Avian Biol.* 30: 116-121). The PCR conditions were as follow: Reactions (10 $\mu$ l) were performed in 0.2ml thin-walled PCR tubes (Axygen) on a Corbett Research PC-960C thermocycler. PCRs contained Taq polymerase (0.25 units), MgCl<sub>2</sub> (2.5mM), reaction buffer (10mM Tris-HCl, 50mM KCl, 0.1% Triton X-100) and dNTPs (200 $\mu$ M) supplied by Promega. A total of 40 amplification cycle were performed: one cycle of 60s at 95°C followed by 40 cycles of 94°C for 20s, 55°C for 30s and 73°C for 90s. PCR products were separated on a 2.0% TBE agarose gel stained with 0.5 $\mu$ /ml Ethidium Bromide (Promega).

Blood samples were collected from Oystercatchers caught in Broome and Victoria during the last two years to permit genetic sexing. So far, 71 Pied Oystercatchers have been sexed

using the this method. During the course of the new few months, the remaining Pied Oystercatchers and the Sooty Oystercatchers will be sexed. It will then be possible to conduct statistical analyses to determine the robustness of biometric measurements to sex oystercatchers. It is also interesting to note that the technique used to sex oystercatchers is quite polyvalent, good results have been obtained with a wide array of birds from different orders including gannets, petrels and penguins.



Adult Sooty Oystercatcher (photo D. Graham).

## Common Sandpiper     *Actitis hypoleucos*

Graham Beal

I started writing these short "spotlight on a species" articles for the Bulletin each year as I thought some members might like to be familiarised with some of the waders that the group bands each year. This year I thought I would break with tradition and write about a wader that the VWSG hasn't actually banded, the Common Sandpiper.

Clive tells me though, that records show that up to the end of 2003, 48 had been banded in NW Australia, two in Perth, six in New South Wales and 18 near Darwin. As far as he knows there have been no recoveries with only one yellow flagged bird sighting in Singapore on 30-09-2000. One was recently spotted near Broome with an "orange" flag, which caused some excitement, but when eventually retrapped the flag turned out to be a stained yellow one!

As with some other waders, it is a commoner summer visitor to northern Australia than it is to the south where it can be found on rocky and sandy beaches, river edges and other waterways in mangroves and salt marshes, dams, lakes and sewage ponds. It is a bird that I was familiar with in my early birding days in England and its appearance and call, a distinctive piping twee-wee-wee, was always a thrill to hear on the spring passage. It would often be found on the concrete sides of reservoirs and occasionally fast running rocky streams or rivers, where it could be seen chasing insects, this also being one of its preferred breeding habitats further north.

It is described as having a horizontal stance with a fine brown bill with buff at base, whitish eyebrow and eye ring, with dark eye line, legs grey green tinged yellow. Upper parts bronze brown to grey brown above very finely barred darker; white below with distinct white "hook" around bend of closed wing; sides of upper breast washed brown. Juveniles are similar to adult non-breeding plumage but feathers of upper parts have buff tips. It is very distinctive the way it teeters, bobs or wags its tail and has a quick fluttering flight with clipped shallow wing beats broken by glides on down curved wings. Its call is a distinctive high-pitched "seep, seep, seep".

It breeds from the British Isles to eastern Scandinavia, eastern Siberia and northern Japan. It winters in southern Europe, Africa, India, South East Asia to Indonesia, Papua New Guinea and Australia. It is a vagrant to New Zealand. I have seen it at sewage farms such as Pakenham and Werribee and it has been reported at Carrum. As mentioned previously, it can often be found on the concrete sides of the ponds, on top of culverts, bridges etc. and on the gravel pathways and causeways. It is seen regularly at Tooradin, south east of Melbourne so look out for it on the north side of the South Gippsland Highway on the rocky embankments or on the muddy Islands on the south side at low tide. It is rarely found in flocks, seeming to prefer its own company or a very special friend.

References: Pizzey, G. & Knight, F. The Field Guide to the Birds Of Australia



## **SHEBA2B - how to get started**

### **Tips for using HUMPSF and HUMPSUV2 to separate the sexes of size dimorphic species**

**Birgita Hansen**

As the Victorian Wader Studies Group continues to collect vast amounts of biometric data on shorebirds, the need for data analysis becomes more and more urgent. With as much as two decades worth of data now amassed for some species, it is vital that this information be circulated to the wider scientific and research community. Currently we have around 20 species for which we would dearly like to collect data on patterns of sexual size dimorphism and sex bias at capture sites. Many VWSG members have already volunteered to analyse these patterns in a particular species and produce the data in a publishable format. The most readily available tool for such analyses at this time is the suite of programs collectively called SHEBA2B (Rogers 1995). Here I present some tips on getting started and using the programs HUMPSF and HUMPSUV2 for univariate analysis of biometric measurements in sexually dimorphic species.

SHEBA2B is a suite of programs designed for analysing morphometric measurements in birds and probabilistically assigning birds to one sex or the other on the basis of dimorphic measurements. These programs run within a MS DOS environment and are therefore not suitable for use on an Apple Macintosh. They require prior construction of data files in a text program like Notepad and user input throughout the operation of the program via the keyboard.

There are a few steps you need to complete before attempting to run the programs.

1. Set up your SHEBA2B directory
2. Explore and plot your data, for example, as a histogram
3. Estimate the number of birds in the smaller sex and the average measurement of those birds
4. Construct a data file (specuv.dat)

#### **1. Setting up your SHEBA2B directory**

When you receive SHEBA2B, you will receive it as a group of files not sub-divided into directories. There will be your program files (all having the file extension .exe) and probably some example data files (with the extension .dat). SHEBA2B should be set up as a separate directory on your hard drive (C drive in most computers). All your program files can remain in the parent SHEBA2B directory. Some of the Rogers documentation says to put the .exe files under a new directory called EXEfiles. This is not necessary, and may in fact hamper the operation of the programs. However, you must put your .dat files under a new directory called DATfiles. Therefore, if you open My Computer or Windows Explorer, you should see something that looks like this:

Folders	Name	Size	Type	Date Modified
Sooty Oystercatcher	~\$SHEBA2.doc	1 KB	Microsoft Word Doc...	24/07/2005 12:57 PM
stuff	CRIT_BVF.EXE	71 KB	Application	25/06/2002 3:44 PM
VWSG	CRIT_UVF.EXE	54 KB	Application	25/06/2002 3:44 PM
My Computer	CRITF.EXE	50 KB	Application	25/06/2002 3:43 PM
Local Disk (C:)	DIST_BVF.EXE	50 KB	Application	25/06/2002 3:44 PM
BioEdit	Excel Histogram.xls	16 KB	Microsoft Excel Wor...	13/08/2004 10:10 AM
Chromas	HIST_BVF.EXE	47 KB	Application	25/06/2002 3:45 PM
DELL	HMPNABVF.EXE	75 KB	Application	25/06/2002 3:45 PM
Documents and Settings	HMPNAUVF.EXE	56 KB	Application	25/06/2002 3:46 PM
DRIVERS	HUMPS8VF.EXE	74 KB	Application	25/06/2002 3:46 PM
gs	HUMPSF.EXE	53 KB	Application	25/06/2002 3:46 PM
I386	Humpsuv2.exe	70 KB	Application	13/05/2003 12:21 PM
MEGA	HUMPSUVF.EXE	54 KB	Application	25/06/2002 3:47 PM
My Music	kens letter.doc	24 KB	Microsoft Word Doc...	18/09/2002 10:29 AM
NALCache	KINMAXF.EXE	44 KB	Application	25/06/2002 3:47 PM
NDPS	OTH_BVF.EXE	55 KB	Application	25/06/2002 3:48 PM
Photoshop 5.0	OTH_UVF.EXE	55 KB	Application	25/06/2002 3:48 PM
Population Genetics	RIGHTBVF.EXE	48 KB	Application	25/06/2002 3:48 PM
Program Files	SHEBA2.doc	123 KB	Microsoft Word Doc...	18/09/2002 10:21 AM
qbasic	SMPL_BVF.EXE	50 KB	Application	25/06/2002 3:49 PM
R-murray	workshop notes.doc	129 KB	Microsoft Word Doc...	13/08/2004 11:28 AM
temp				
WINDOWS				
WinZip				
WUTemp				
DVD/CD-RW Drive (D:)				

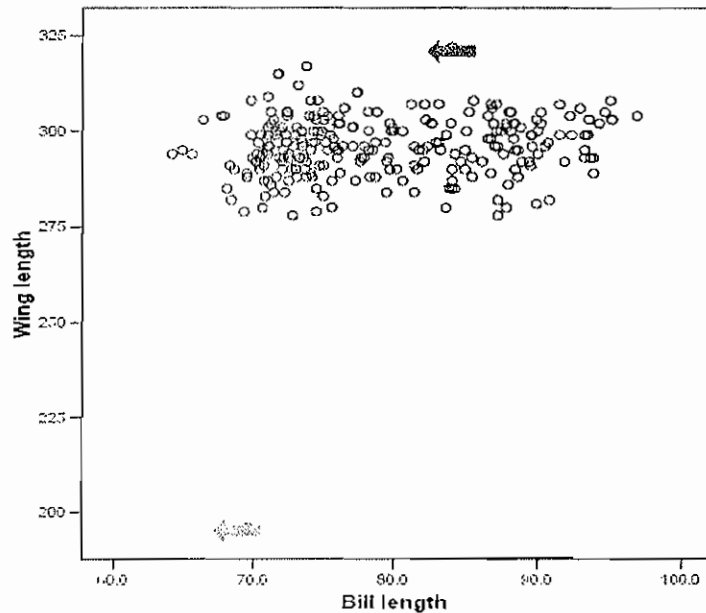
Note that the parent directory SHEBA2B is located directly on the hard disk (in this case 'Local Disk (C:)'). The DATfiles directory is located within SHEBA2B as are all the program files. Your specuv.dat file, which I will talk about later, goes under the DATfiles directory.

Some of you may have the old SHEBA software. The difference is that the older program files do not have an 'F' at the end (eg. HUMPS.EXE). These programs output their results directly to the printer, whereas the new SHEBA2B programs output their results to a file. If you try to use the old programs and you do not have a printer online (connected), the programs will crash. Therefore, I recommend that you discard the old programs and update them with the new ones. Also note, HUMPSUV2.exe is the most up-to-date of all the HUMPSUV programs.

## 2. Data exploration and plotting

Most of you will receive your shorebird data in either a Microsoft Excel or Access file format. If you have received an Access file (file extension .dbf or similar), it is easiest for you to convert your file to an Excel spreadsheet (file extension .xls or similar). This is because Excel already contains the necessary software for data manipulation and construction of algorithms and graphs. The quickest way to convert your file is a copy and paste function. There are other ways of file conversion but I will not go into these here. If you wish to know more about file conversion, consult your help files within the relevant program.

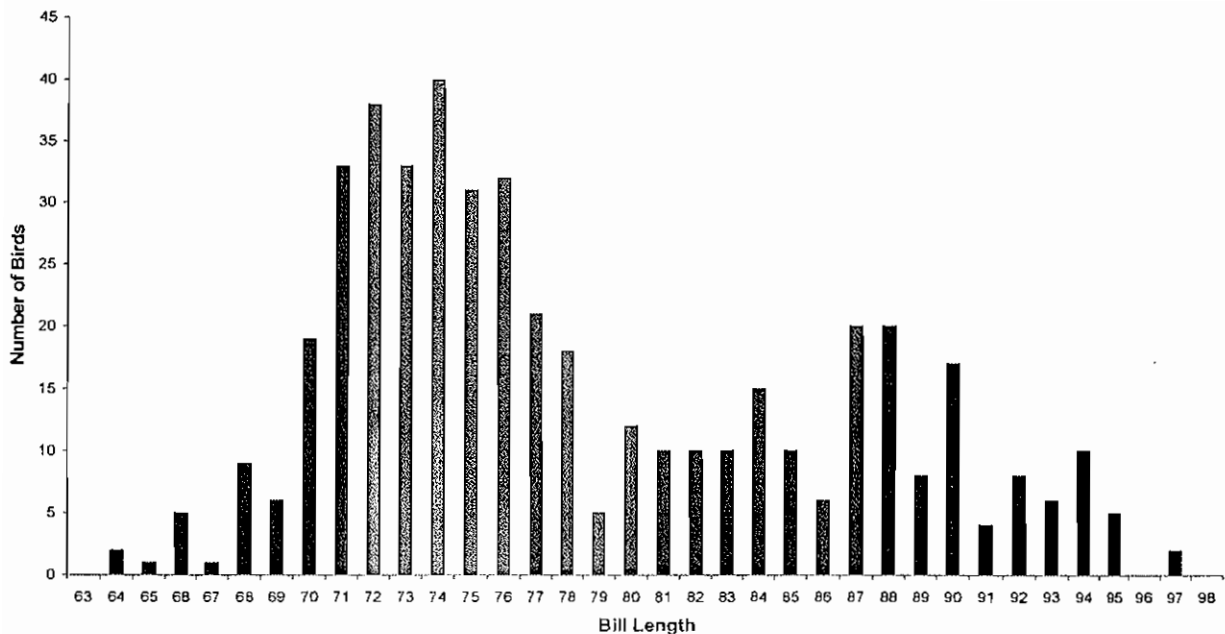
Once you have your data in Excel, you need to look it. Many statistical analyses provide mathematical support for patterns that one can already see in their data. The best way to visualise these patterns is to plot your data as a graph. There are many graphical formats that might be suitable. For example, a scatter plot of bill length versus wing length will give you an indication if there are any 'dodgy' measurements or outliers (Figure 1).



**Figure 1.** Scatterplot of bill length versus wing length in adult Sooty Oystercatchers. Note outliers marked with an arrow.

Outliers are typically a result of operator error, i.e. a poor measurement, a scribing error, or an error in the data entry, but they may also reflect an unusual sized animal. It is important you identify these outliers and explain them in a sensible fashion. It is no use just throwing away a measurement because it doesn't fit in a neat line with the others - you may have an unusually large male that appears to cluster with females, or a bird in very good condition that attained a greater weight than it's peers. Therefore, inspect your outliers carefully (it helps to consult the raw data sheets) before you throw them away. SHEBA2B has a program for detecting outliers (DIST\_BVF.EXE), but it requires some knowledge of the bivariate programs.

The graphical method that will be your most powerful tool for recognising sex-related size patterns, is a histogram. A histogram is a frequency plot, whereby the birds are grouped into a size frequency class (or interval) that represents their biometric measurement (Figure 2). When you plot a histogram, any bimodal patterns in the data will become immediately evident. In Figure 2, we see two distinct modes, the one on the left is larger and in this species represents males. The mode on the right is slightly smaller but still distinct from the mode on the left. This represents females. Also note, that the difference in mode size suggests there may be a sex bias (ie. more males than females). Keep these patterns in mind when you go to use HUMPSF.

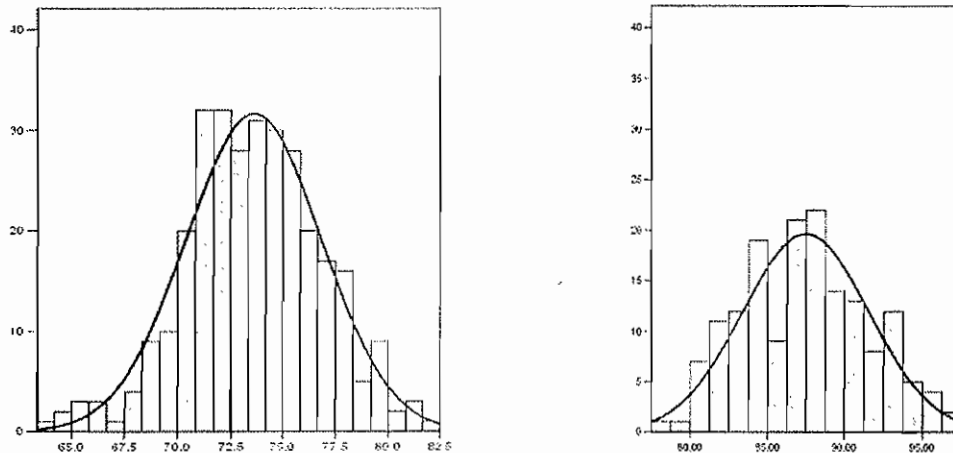


**Figure 2.** A histogram of observed frequencies of bill length (mm) in adult Sooty Oystercatchers (VWSG data, Hansen unpub).

### 3. Estimation of numbers and means

When you first start to operate HUMPSF, the program will ask you to give some initial estimates of the number of birds in the smaller sex and the mean measurement for those birds. This estimation is a judgement or guesstimate on your part. There are bound to be many different ways of doing this, and everyone who is familiar with such analyses will have a different opinion. You yourself may already know a better way - if so I would love to hear it!

In terms of your histogram, you need to make an estimate of where you think the smaller sex finishes and where the larger sex begins. You may find it helpful to print your histogram, draw in the 2 modes as a line of best fit (Figure 3) and then use their junction as your boundary for the smaller sex. From your graph, make an estimate of which frequency classes belong only to the smaller sex. For example, in Figure 2, we might judge that 81mm is the upper limit of the smaller sex (although you may decide that the upper limit is lower - this is the judgement you need to make). Therefore, we would work out how many birds have a bill length up to that size (e.g. 282 birds have a bill length of 81mm or less), and then calculate a mean bill length of those birds. You can do this by averaging the bill lengths of all the birds from the lowest interval to the interval upper limit you have just chosen. For Figure 2, these intervals would be 64 to 81 and the mean of all individual measurements that fall within these points is 73mm. These numbers are used in HUMPSF to work out the range in which the real estimate may lie. So, if we judged that the number of birds in the smaller sex was 282, and the mean bill length of these birds was 73mm, then we would begin with a broad range that encompasses those values, for example, 250 - 300 for number and 68 - 76mm for mean. You will use these values when you first begin running HUMPSF.



**Figure 3.** An example of 2 bill length histograms, with a line of best fit for each mode. These histograms are adapted from figure 2. Ideally, you would produce these on a single graph so that you can judge where the 2 lines intercept.

#### 4. Construction of your data file, specuv.dat

The input format for HUMPSF is a txt file with the extension changed from .txt to .dat. For all intensive purposes, they are exactly the same type of file, but the SHEBA2B software requires the .dat extension to recognise the file. Therefore, when you create your specuv.dat file in Notepad, you need to save and close the file and then change its extension by renaming the file. In the SHEBA2B documentation, it states that the format for the specuv.dat file is ASCII, comma delimited. This simply refers to the type of separator you have between new pieces of information. For example, the numbers 10,45.5,1 indicate 3 bits of information all separated from each other by a single comma. This is how the program recognises a new piece of information is about to be read. Avoid using spaces and tab stops as it may affect the operation of the program.

In the SHEBA2B documentation (Rogers 2002), it states the following to indicate how to set up your file:

#### Inputs

- SPECUV.DAT. This must be ASCII, and must use comma delimiters. An example of the file accompanies the programs. It contains:
  - 1st Record - Name of species
  - 2nd Record - Measurement
  - 3rd Record - Age
  - 4th Record - Histogram definition
    - . number of intervals
    - . lower limit of first (smallest) interval
    - . interval (bin) size
  - 5th Record - Observed frequency in each histogram interval.

Here is an example of what a specuv.dat file should look like:

```
Sooty Oystercatcher  
Bill Length  
Adult (2+)  
36,62.5,1  
0,2,1,5,1,9,6,19,33,38,33,40,31,32,21,18,5,12,10,10,10,15,10,6,20,20,8,17,4,8,6,10,5,0,2,0
```

Note the 5th record has split across 2 lines because of the size of the page - there is NO return after the 20. The first 3 lines or records are self-explanatory. On the 4th line, we see the number of intervals or frequency classes (you can check these by counting them up in Figure 2), the first or smallest frequency class (ie. where the histogram starts) and the size of the frequency class or interval (ie. 63-64, the interval is 1). You may wonder why it begins at 62.5 and not 63. This is so that the value for that frequency class falls in the centre of the interval and not at one 'edge'. The interval 62.5 to 63.5 contains a value of zero. There are two measurements of 63 in the interval 63.5 to 64.5 and therefore it contains a value of 2. On the 5th line, we have the values for each interval, beginning with the lowest frequency class and finishing with the highest.

Save your file as specuv. Remember once you have finished, to close the file and rename it to specuv.dat. Also remember that each time you create a new specuv file, say for a different measurement or a different age class of bird, it will overwrite your previous file. Therefore, if you have a specuv file which you are not currently using, rename so that you can easily identify the file later, e.g. for the above file I would name it "specuvSOad.dat". Your specuv.dat file needs to be saved in the 'DATfiles' directory. This is where the program will look for it when it operates.

## HUMPSF

This program is the first place to start. You can think of it as an exploratory program, in that you put in your estimates from your graphs and HUMPSF gives you an indication of how well your estimates fit the data. It does this by way of a statistic called a chi-squared value. We are interested in the smallest possible non-zero chi-squared value. You begin by indicating a range that encompasses your estimates and the program ends by printing out those ranges, each provided with a supporting chi-squared value. This will be a clearer shortly when I explain in greater detail about the operation of HUMPSF.

In the Rogers (2002) documentation it says the following about operating HUMPSF:

1. Type HUMPS and press "Enter" to start program.
2. Screen offers choice of file or keyboard input.
3. Screen offers choice of equal standard deviations or equal coefficients of variation.
4. Screen prints histogram, number of birds in sample, and overall mean and standard deviation.
5. Screen requests specification of the range over which chi-squared is to be calculated. This is defined by:
  - the minimum number of birds for the smaller sex;
  - the maximum number of birds for the smaller sex;
  - the minimum mean for the smaller sex;
  - the maximum mean for the smaller sex.
6. Five equidistant points are calculated for each range specified in step 5. The program calculates and shows on screen the matrix of chi-squared, and that of the degrees of freedom, for each of the 25 combinations of these values. Zeros are entered where no solution is possible. Occasionally, the bottom row of the matrix will be printed as zeros when solutions are known to be possible. This is

- inconvenient but in ten years, I have been unable to find the reason. Continued program operation is unaffected.
7. Screen offers choice to redefine evaluation range. If accepted, control passes to step 5.
  8. Screen offers choice to print results for all 25 results evaluated in the final chi-squared matrix. It either does this or prints results just for cells in the matrix which has the minimum chi-squared.
  9. Screen offers choice to do another analysis (this can be either on the same data set with a different assumption or on a different data set). If accepted control passes to step 2. If not accepted, minimum chi-squared results are written to ASCII file HUMPSOP.DAT (see below) and program exited. N.B. The program overwrites HUMPSOP.DAT each time this program (or HUMPS\_UV) is run.

Step 1 you simply double click on HUMPSF.exe to begin the program. Step 2 gives you a choice between entering every data point directly into the program or else using the specuv.dat file you set up. Therefore, choose 'file' by pressing f.

At step 3, you must make an assumption about the variation between your sexes. The standard deviation of the mean is a measure of the spread of the data, taking into account the sample size. It is in the same measurement units as the original data (Quinn & Keough 2002). In most circumstances it is unlikely that the standard deviation will be equal for both sexes. Look back at Figure 2. It appears that the spread of potential female bill sizes is similar to males. However, the sample size may be different if there is a bias towards males. This would suggest that the standard deviation is not the same for females as for males.

The coefficient of variation is a different way of measuring the variation in your data. It does so by comparing the variability in samples with different means, independent of the measurement units (Fowler *et al.* 1998, Quinn & Keough 2002). This may sound confusing - if you wish to know more about the statistical basis for measuring variation, then I suggest you have a look at some of the further reading I have suggested at the end. To summarise however, in most of the data you will analyse, choosing option 2 for equal coefficients of variation is more appropriate. Once you have analysed your data and you find out what the real estimate of the mean and standard deviation are, you may choose to go back and re-analyse the data choosing option 1 if it is applicable.

Step 4 is simply a numerical representation of the histogram you have already plotted. Step 5 is where you get to input the estimates you made earlier. Remember when choosing your minimum and maximum numbers and means, to choose values that encompass your original estimate. It is worth pointing out 2 things you should be mindful of. One, HUMPSF will divide your chosen range by 4, bounded by 5 observations. This allows you to narrow down your ranges by giving you several possible values to look at. Therefore, choose numbers that are divisible by 4. So, when earlier we chose a number range of 250-300, HUMPSF will split this into 5 categories of 250, 262.5, 275, 287.5 & 300. In the early stages of data exploration in HUMPSF this really doesn't matter very much. However, and this leads me to my second point, you cannot have a proportion of a single bird. So obviously, as you narrow down your ranges you should be choosing a range that provides a realistic estimate for the number of birds. Step 6 is what we have just discussed about the ranges being sub-divided. You will notice that each combination of each sub-divided range will have a corresponding chi-squared value. For example, see below:

## CHI-SQUARED AND DEGREES OF FREEDOM TABLES

		CHI-SQUARED				
M \ N	290.0	292.0	294.0	296.0	298.0	
72.000	0.000	0.000	0.000	0.000	0.000	
73.000	%116.755	%172.281	%279.663	%431.780	%670.349	
74.000	%101.189	97.125	92.961	89.573	85.246	
75.000	%156.258	%154.783	%153.255	%151.672	%150.031	
76.000	%190.947	%190.483	%190.003	%189.507	%188.995	

In this example, very large chi-squared values have a % sign next to them. Chi-squared values of 0.000 are not allowable in this context and should therefore be ignored. They do not represent a better fit of your estimate to the data, but actually represent a bug in the program that remains unresolved. In this example, the smallest non-zero chi-squared value is for a bill length estimate of 74.000 and a number estimate of 298.0. Therefore, when we re-run the program we will try new ranges that encompass these new values. In this fashion, we get closer and closer to an optimum result by narrowing the range. As our optimum result is approached, the value of the chi-squared will reduce to a point where it can no longer be improved upon.

On the screen you will also notice another matrix next to this one labelled DEGREES OF FREEDOM. Degrees of freedom is the sample size minus 1. It is a statistical value which is part of the calculation of your test statistic. It is not necessary for you to worry about this matrix at this stage.

Step 7 is your opportunity to try new ranges as we have just discussed. In the above example, it would be sensible to narrow the range down around the values of 74.000 for mean and 298.0 for number. Therefore, I would probably choose a minimum and maximum range like 296-300 for number of smaller sex and 73.0-75.0 for mean. You can continue to try new ranges until you have narrowed your estimate down to point where your chi-squared value is not improving and you have an integer (which cannot be further sub-divided) for your number of birds.

If you choose not to try more ranges and type n, the program will print the last result displayed on the screen to an output file called HUMPS.DAT (which you can find under the DATfiles directory) and then close. It also prints another file called HUMPSOP.DAT. This file is used along with specuv.dat when you operate CRITUV. Remember that each time you run the program, it will over-write your existing HUMPS.DAT and HUMPS.OP files. Therefore if you wish to save them, you will need to rename the files. For those of you who have the documentation I have been referring to (Rogers 2002), you will notice there are 2 more steps to the operation of the program. These are no longer relevant in the most recent version of HUMPSF and can therefore be ignored.

I have one final note to make about HUMPSF before moving on to discuss HUMPSUV2. HUMPSF does not provide the final result, but instead gives you starting values for HUMPSUV2. While HUMPSF is the exploratory program, HUMPSUV2 is the optimising program. You will use the best result from HUMPSF as the basis for you initial estimates in HUMPSUV2. This is when you will attain your best result for separating the sexes.

### HUMPSUV2

This program uses a more complex statistical procedure to arrive at its estimates of size and number for each sex. It is not necessary for you to know the mathematical logic behind the program's execution, but you need to be aware that the statistic supporting your result is different. Instead of looking for the minimum chi-squared as we did in HUMPSF, we are now



looking for the maximum log-likelihood. This value will always be expressed as a negative. Thus, we are attempting to attain an estimate which is supported by the largest maximum log-likelihood value (which will appear as a small number with a negative sign).

HUMPSUV2 operates in a very similar fashion to HUMPSF in that it requests you to input a starting size estimate for the number of birds in the smaller sex and the mean measurement. The Rogers (2002) documentation states the following on the operation of this program:

### Operation

Basically as HUMPS but with some differences:

Type HUMPS\_UV to start program at step 1;

Step 4 requests:

- the number of decimal places required for printing the expected values in each histogram interval;
- the step sizes to use in the optimising routine. It is a good idea to start with larger step sizes than the program defaults and to use smaller values (see below) as you get closer to the optimum;

Step 5 requests initial estimates of the number of birds in, and mean of, the smaller sex. The estimates evaluated at each iteration, and the log-likelihood, are shown on screen. If the program has not converged after 20 iterations, the screen asks if you want to continue. This allows operation to be terminated if the program is not converging.

When convergence is attained, the screen asks if you want to change the step sizes (as in Step 4). The program continues with the new step sizes; initial values do not have to be reset. If you do not want to change them, the screen asks if you want to use the default or a different value of the finite difference multiplier; this is used in calculating standard errors (see Rogers 1995a, 1995b). The program then calculates the asymptotic standard errors and prints the results.

At step 1, open your program as you did for HUMPSF. Step 2 does not exist because HUMPSUV2 is designed only to accept data from a file. If you wish to enter the data manually, you will need to use HUMPSUVF. Step 3 is the same as for HUMPSF. At this point the screen will say STARTING VALUES AND STEP SIZE. AUTOMATIC OR USER CHOICE. I would recommend you do not opt for the automatic option, as I have found the program often crashes at this point. You are better to enter your step size choices manually.

The first part of step 4 is not relevant in the new SHEBA2B programs and will not appear. The second part requests the step sizes. First you should type N for user choice. The program will show the default step sizes and ask you if you want to change them. The documentation recommends starting with large step sizes. This is because the program may crash if you attempt to run it with small step sizes and poor estimates. You can always re-run the program later with smaller step sizes if you want to try and improve on the final result. Therefore, type Y here. A good starting point suggested to me by Ken Rogers is a step size (for number) of 8, and a step size (for measurement) of 0.064. Later you can reduce these to say 4 and 0.032, then 2 and 0.016 or 0.008, etc.

Step 5 requests your initial estimates. These you will take from your HUMPSF analysis. So you would type the mean bill length and mean number of birds that had the smallest chi-squared value from your HUMPSF output. From here the program will run, and the size of the data file combined with the size of the steps will determine how long it takes to finish or 'converge'. If it does not converge, either the initial estimates were inaccurate, which should not be the case if you used your result from HUMPSF, or else the step size was too small. If the program does not even begin to run, but instead crashes immediately with a message that looks a bit like this:

Illegal function call in line 1220 of module HUMPSUV3 at address 0E06:3A5F

This means that your initial starting estimates were so wildly inaccurate that the program couldn't make any sense of them. Again, this shouldn't happen if you use your HUMPSF result for your estimates.

Once the program converges, it will print out the step sizes and ask you if you wish to change them. Rather than say yes at this point, you may want to close the program so that you can look at the results. It will not print them to screen as HUMPSF did. The reason you would want to see the results file is so that you can check what the value of the maximum log-likelihood was that supported your final result. Therefore, type N for both prompts asking if you want to change the step sizes. The program will then output the results to the file HUMPS\_UV.DAT under the DATfiles directory and close. If you want to try and improve your result, simply run HUMPSUV2 again from start to finish. Remember though, it will overwrite your existing HUMPSUV.DAT file each time you run it, so therefore if you want to keep the result, be sure to rename it.

Here is an example of what your HUMPS\_UV.DAT file will have in it:

SPECIES: Sooty Oystercatcher  
MEASURE: Bill Length  
AGE GROUP: Adult

#### EQUAL COEFFICIENTS OF VARIATION

#### ESTIMATES

	SMALLER SEX	LARGER SEX
NUMBER OF BIRDS	298	169
MEAN	73.457	87.170
S.D.	3.310	3.928

#### ASYMPTOTIC STANDARD ERRORS

A.S.E., SMALLER NUMBER	1.3571
A.S.E., SMALLER MEAN	0.0311
CORRELATION BETWEEN ESTIMATES	0.9555

## OBSERVED AND EXPECTED VALUES

Interval Mid-Point	Observed Frequency	Estimated Frequency		
		All	Smaller	Larger
< next l'val	0	0.1	0.1	0.0
63.000	0	0.3	0.3	0.0
64.000	2	0.6	0.6	0.0
65.000	1	1.4	1.4	0.0
66.000	5	2.9	2.9	0.0
67.000	1	5.4	5.4	0.0
68.000	9	9.3	9.3	0.0
69.000	6	14.5	14.5	0.0
70.000	19	20.8	20.8	0.0
71.000	33	27.2	27.2	0.0
72.000	38	32.5	32.5	0.0
73.000	33	35.5	35.5	0.0
74.000	40	35.4	35.3	0.1
75.000	31	32.3	32.1	0.1
76.000	32	27.0	26.7	0.3
77.000	21	20.9	20.3	0.6
78.000	18	15.2	14.0	1.1
79.000	5	10.9	8.9	2.0
80.000	12	8.4	5.1	3.3
81.000	10	7.7	2.7	5.0
82.000	10	8.5	1.3	7.2
83.000	10	10.3	0.6	9.8
84.000	15	12.6	0.2	12.4
85.000	10	14.8	0.1	14.7
86.000	6	16.4	0.0	16.4
87.000	20	17.1	0.0	17.1
88.000	20	16.7	0.0	16.7
89.000	8	15.4	0.0	15.4
90.000	17	13.2	0.0	13.2
91.000	4	10.7	0.0	10.7
92.000	8	8.1	0.0	8.1
93.000	6	5.7	0.0	5.7
94.000	10	3.8	0.0	3.8
95.000	5	2.4	0.0	2.4
96.000	0	1.4	0.0	1.4
97.000	2	0.8	0.0	0.8
98.000	0	0.4	0.0	0.4
> last l'val	0	0.3	0.0	0.3

MAXIMUM LOG-LIKELIHOOD      -1352.6621  
 APPROXIMATE CHI-SQUARED      64.096    DEGREES OF FREEDOM    35  
 CHI-SQUARED (Observed>0)    57.134    DEGREES OF FREEDOM    35  
 CHI-SQUARED (Min expected=5) 45.763    DEGREES OF FREEDOM    28

At the top of the file is printed the program's estimates of the sizes and numbers of both sexes. Below that are printed asymptotic standard errors, which you need not concern yourself with at this stage. Then it prints out 3 histograms in numerical form, the first is the same as the printout in HUMPSF prior to requesting initial estimates of range. The second and third are of the smaller and larger sex, respectively. At the bottom is the maximum log-

likelihood value. Use this to compare which of your results is the best. It may not decrease much when you change your starting values. Play around with the program and change your estimates and starting step sizes, and see how this changes the maximum log-likelihood value.

Hopefully by now you have a better understanding of how these 2 programs work and the best way to get something meaningful out of your data. If you have successfully operated these programs to your satisfaction, then you are ready to move onto developing your sexing criteria in CRITUV.

*Afterthought:*

I have spent countless hours trying to understand my data, the programs in SHEBA2B and the best way to get sensible results. Much of my limited understanding has been through exhausting trial and error. By no means do I claim to have a thorough understanding of these programs. I am happy to assist where I can, but if you wish to understand these programs fully I would ask you to direct your questions to Ken Rogers. He is contactable at the following email address.

[kenrogers@hotmail.com](mailto:kenrogers@hotmail.com)

Ken has provided me with much email support, for which I am grateful.

Below is a suggested list of further reading (including references from the text).

Rogers K.G. (1995) SHEBA: computer programs for sexing birds on measurements using univariate data. *Corella*, **19(1)**, 25-34

Rogers D.I and Rogers (1995) Commentary: estimating sexes of honeyeaters from head-bill measurements. *Corella*, **19(1)**, 12-17

Pyke G.H. (1995) A choice of methods for estimating sexes of birds using morphometric measurements: a reply to Rogers and Rogers. *Corella*, **19(1)**, 18-23

Rogers K.G. (2002) SHEBA OPERATING INSTRUCTIONS. *Unpublished*.

Fowler J. Cohen L. and Jarvis P. (1998) Practical Statistics for Field Biology. John Wiley & Sons, Chichester, U.K.

Quinn G.P. and Keough M.J. (2002) Experimental Design and Data Analysis for Biologists. Cambridge University Press, Port Melbourne.

## Stockyard Point – Sunday 7<sup>th</sup> August 2005

Andrea Drake

Heading down the hill towards Jam Jerrup on our way to Stockyard Point brings butterflies to my stomach in anticipation of the adventure and excitement that lies ahead. The walk up to the sandy point where the waders gather provides magnificent views of French Island and the mainland coast. Hills, trees and mangroves break the sense of openness that comes when viewing the coastal plains of Western Port from further up the beach. As you round the bend you enter the wader's world of sand spits, sparkling shallows and smelly salt marshes.

Under the guidance of Dr. Clive Minton we are inducted into the necessary preparations for cannon netting Pied Oystercatchers. We are warned to dodge the ever-present rear end trickle. The etiquette of passing the bird beak first is encouraged as best practice. Clive explains his plan to the group. His hypotheses on the behaviour of the tide, the changes in geography since the previous attempt and his assessment of the likelihood of capturing the target species, always seem to be right on the mark. Other experienced members of the group are able to add valuable information to Clive's insights and then the group sets out to execute the plan with every available volunteer. Everyone pitches in any way they can. The knowledge and experience that pools together with the assistance of willing volunteers, in order to accomplish the capture, banding, measurement and release of waders, is truly inspirational.

Being part of a group contributing to invaluable research is a great learning experience as well as a way to meet some highly committed, energetic and fun people. Sitting in a circle, the birds are processed: first they are given a band with a unique identity number which is then recorded; measurements are taken of the bill, wings and head and bill; the plumage is examined to assess the stage of the birds moult and sometimes for age determination; the bird is weighed; and a small amount of blood is taken for analysis of sex. I learned so much on my first outing and continue to expand upon that knowledge with every catch. My thanks to Clive, Peter, Roz, Dave and Graham, along with the rest of the dedicated members of the VWSG, for providing my son and I with such fascinating and entertaining opportunities.



Stockyard Point oystercatcher roost (photo Pete Collins)

## Obituary – Don MacMillan (1928-2004)

Former Olympian Don MacMillan passed away in the early hours of the morning on 19<sup>th</sup> November 2004. Don was a teacher at Scotch College, as well as a Head of School House and of Hill, coach of rowing, athletics and an international athlete in his own right. He left a wife, Meg, a son, Angus and daughters Mary, Elizabeth and Catherine.

Among his many achievements, Don represented Australia at the 1952 and 1956 Olympic Games, plus the 1950 and 1954 Commonwealth Games. He held many Australian records, including 800m, 880yds and one mile. While in England in the early 1950's, Don played an active role in the pursuit of the four minute mile, racing against or acting as a pacemaker for Roger Bannister.

A member of the Geelong Guild club, where John Landy also ran, Don earned himself several national titles throughout his career, winning the 880yds title in 1950, 1952 and 1955, plus the Australian mile title in 1950, 1951, 1952 and 1955.

Don's funeral was held on Thursday 25<sup>th</sup> November at St George's Anglican Church at Red Hill.

Don was a keen member of the VWSG and often participated in field activities. The MacMillan family asked that no flowers be sent but that donations be made to the VWSG.

On a personal note, I always found Don a great companion when he came out to catch birds. He was a cheerful and helpful person who had the ability, as most good teachers had, of making you feel important. One particular incident has gone into the annals of VWSG folklore. We were catching Turnstone of the shores of South Australia and he and Meg were off twinkling. The standing orders were that when the net was fired, drive there quicker than you have ever done before, and this he achieved. But it was the stop that was the best bit because the car stopped, Meg didn't, and it cost him a new windscreen. Meg must have the hardest head. But he was phlegmatic about the incident and said that she wanted to get out really quickly but the glass slowed her down a bit.

You will be sadly missed.

Pete Collins

## **Obituary - Stuart Raymond Sarrailhe (1929 - 2005)**

### **Sarah Campbell (née Sarrailhe)**

Stuart was born in Brighton, Sussex, England. He grew up in the area and became interested in aeroplanes at an early age. He was president of his school model aero club and went on to train at the Miles Aeronautical School. He became a member of the Royal Aeronautical Society and the Institute of Mechanical Engineers. He spent three years with the RAF and then moved to Fairy Aviation where he worked on the Rotodyne and Gannett aircraft. Following this he went to the British Aircraft Corporation where he worked on the BAC 111 and Concorde in its infancy.

During all of this he learnt to sail and scuba dive. In 1953 he became a member of the British Sub Aqua Club in the days before wet suits! He was a founding member and Chairman of the Chelsea branch of the BSAC. It was through his involvement with scuba diving that he met Liz and in 1959 they married and settled in Chobham.

In 1963, by now with two children - Sarah and Jennifer, they migrated to Australia as 'Ten Pound Migrants'. Although they did not have employment arranged Stuart soon gained a position at the Aeronautical Research Laboratory in Melbourne. At ARL he specialised in the study of crash safety and as well as safety for aeroplanes he also worked on things as diverse as safety helmets for bicycle, motorcycle and horse riders as well as safety belts, safety harnesses and padding for car dashboards. In addition, he sat on a number of Standards Association committees, in order to prepare standards where none had previously existed.

During this time the family settled in Beaumaris and bought and sailed a Mirror dinghy. They later bought land at Merricks North and built a holiday house and graduated to a larger trailer sailer which they sailed out of the Western Port Yacht Club. During all of this time, and later when Stuart retired and they lived full time at Merricks North, he was involved in a myriad of activities and organisations. These included (to name just a few), the Victorian Wader Study Group, Friends of Birds Australia, two walking groups, Probus, the Western Port and Peninsula Protection Council and Coolart. He was also a gifted 'backyard' inventor and was well known for his ability, after spending some time deep in thought, to come up with a way of making a gadget or widget to fill a need.

Stuart was above all a devoted husband, father and grandfather. He will be greatly missed by his family and his many friends and acquaintances.

## Conservation Report 2004-05

Doris Graham

Several projects of considerable importance were addressed this year.

### **Port of Melbourne Corporation Channel Deepening Project**

Concern was expressed that products of this project could affect the overall health of Port Phillip Bay. In particular the food supply of terns and gannets in the southern reaches of the bay, and of waders on Swan Bay and Mud Islands. The main source of concern will be silt, which will spread in a plume and be swept by the tides into the shallow feeding areas of Swan Bay and Mud Islands. The very fine particles within this plume will settle on mud exposed at low tide and on the seagrass, and other features. If this is extensive, the seagrass will die destroying the breeding grounds for fish. This in turn will affect the benthos in the surface mud damaging or destroying the food source of the waders both migratory and resident.

While in the water the plume will shield the fish on which the terns and gannets feed, thereby forcing these birds to fly further for food.

Since this project is forecast to continue for several years its effect on these populations could be considerable.

Birds Australia is also concerned about these matters and is currently organising a monitoring program to collect data to determine if this is happening. Other possibilities that there may be a rise in water level in the Bay and that dredging will be continued are also of concern. The Crested and Caspian Terns that breed on Mud Islands may be affected by noise at night.

Birds Australia and the VWSG are currently planning an ongoing monitoring project of the feeding activities of waders at several of the sites in both these places.

### **Greater Geelong City Council Mosquito Control Project.**

We objected to the proposal to eradicate/control mosquitos along the western shore of Swan Bay. The plans allowed for changing a long practised ground-based manual delivery of anti-mosquito chemicals to an aerial delivery method using low-flying helicopters. The grounds of our objection were based on the severe disturbance that helicopters would cause to the feeding, roosting and moulting of waders over a wide area. This will also affect moulting, feeding and roosting swans that inhabit these areas and are highly susceptible to disturbance.

### **Urban and Marine Development at Inverloch.**

A proposal to establish a 700-house urban development plus a 150-boat marina inland from Maher's Landing was withdrawn after much opposition from us and from the local community. However, it may not have been fully defeated and our local members, Anthea and Jim Whitelaw and Brian Martin, are working to have this banned completely. Its establishment and "improvement of the foreshore" would ruin the roosting sites for thousands of Red-necked Stint, Curlew Sandpiper, Double-banded Plover and Eastern Curlew because there is very little other shore space in the inlet at high tide.



## **Draft Management Plans for Victoria's Marine National Parks and Marine Sanctuaries.**

Seven of the above were released for public comment late in 2004.

We examined all these plans and made comments on three, omitting those for the Corner Inlet Marine National Park and the Wilson's Promontory Marine National Park and Marine Park, since these do not contain important wader populations. Those commented on were:

*Point Addis Marine National Park and Point Danger and Eagle Rock Marine Sanctuaries.*  
There are several creeks and rivers entering the ocean within these now protected areas. The main points made here related to aspects of visitor use that were applicable to all the parks encompassing shores and estuaries. These were particularly appropriate for use by visitors.

### *Port Phillip Heads Marine National Park.*

This park contains the valuable wader habitats of Swan Bay, Swan Island and Mud Islands. Our principle comment here was that the fencing some years ago of the north western shore of Swan Bay to exclude cattle and other animals has caused considerable degradation of wader roosting areas on these shores. The VWSG strongly recommended that a section on this shore be reopened to cattle, and an offer was made to meet with Parks Victoria staff to discuss this in detail. It was also suggested that stronger measures should be taken to limit recreational use of these areas by speeding watercraft, air-gliding and other boating activities in the whole of Swan Bay due to its great disturbance of waders and waterbirds.

### *Ricketts Point Marine Sanctuary*

This marine sanctuary is significant for its contribution to representation of the eastern shoreline environments of Port Phillip Bay, and its potential for public education and enjoyment of the marine environments. Over many years very few waders have been seen here, and they were considered to be passing through, as there is no food available in this park. This was pointed out that their presence should not be counted as a reason for any protection to be given on their behalf. However, protection is worth giving for the many seabirds such as gulls, crested terns, cormorants that use the rocks extensively at certain times of the year, and there are always some of these species here.

### **Wilson's Promontory Marine National Park and Marine Park.**

This area contains no areas of importance to migratory waders but needs protection for the considerable numbers of Hooded Plovers which inhabit its shores. Pacific Gulls and Sooty Oystercatchers breed on offshore islands within its boundaries and also need protection.

### **Corner Inlet Marine National Park**

Because this area is not of great importance to migratory waders brief comments only were made. However, it was felt that the area to the north in which several islands provide breeding places and daily roosting habitats for Sooty Oystercatchers and Pacific Gulls could have been added to this park.

### **An interstate matter of great concern and importance - Ralph's Bay at Lauderdale, Tasmania**

For many months we have been receiving urgent messages requesting our help to write letters and to make phone calls to members of the Tasmanian Government.

The purpose is to protest against a plan to create an urban development and marina in this nearly pristine, natural shallow bay, which is used extensively as feeding grounds for hundreds of migratory waders and for the endemic Pied Oystercatchers.

Several submissions have been written by me, and the needs of the Tasmanians for our help in this matter have been "broadcast" widely in VWSG, AWSG and other environmental and conservation organizations such as Birds Australia-Victoria. The outcome looked good for those who oppose the plan but the most recent news indicates that it will be given special permission by the Tasmanian Government to proceed.

### **An international matter of worldwide importance - Saemangeum Reclamation Project, South Korea**

The shorebird world has for many years tried to stop this huge project involving the reclamation of 40,000ha of tidal mudflats and estuaries of three rivers- see VWSG Bulletin Number 27, page 65, 2004.

Most unfortunately, despite several court cases, mounted by conservationists and fishers in South Korea and a worldwide campaign it seems that it will be completed. The effect on the hundreds of thousands of waders which stage there during their northward migration could be catastrophic for such species as the endangered Spoonbill Sandpiper and up to one third of the Great Knot population which use these wetlands each year.

### **Acknowledgements**

My sincere thanks to all who have helped prepare submissions on these complex matters. Unless we make our voice heard loud and clear as timely and well informed criticisms of the plans by others to destroy the habitats of our waders the long and often tough but always pleasurable hours, which we put into wader banding, will not longer be possible. Populations of almost all species of wader are declining worldwide and as with the passerines, habitat destruction and disturbance by human activities may be the major factor precipitating this tragic situation.

As stated in the 2004 VWSG Bulletin I would appreciate help with these submissions. If anyone has an interest in or has some or much knowledge of a particular area and has some time to put into this job please contact me.

I would like to thank the following people who have helped me greatly in this job since the VWSG Bulletin 2004 was prepared, Clive Minton, Roz Jessop, Pete Collins, Anthea and Jim Whitelaw, Brian Martin, Sue Longmore, Steve Smithman, Colin Gibbs, Graeme Hamilton, Mike Weston, Peter Wolcott, Mark Anderson, Helen Vaughan and Rod McFarlane. I apologize to anyone whom I have missed-you are of course also thanked.

I can be contacted on 03 9482 2112 (phone/fax) and [grahamdm@melbpc.org.au](mailto:grahamdm@melbpc.org.au) .

# Publications and Presentations using VWSG Data

Compiled by Roz Jessop

## NEWSLETTERS

- “**The Tattler**”, Newsletter for the East Asian-Australasian Flyway  
Clive Minton – Shorebird flagging – the need for sightings No. 40.  
Clive Minton – A small catch of godwits with big returns No. 41.  
Clive Minton, Alice Ewing & Heather Gibbs – Engraved leg flags No. 43
- “**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

### 1. Western Port Shorebird Forum – Friday 22<sup>nd</sup> April 2005

#### ***Roz Jessop and Peter Collins - Threats to Roost Sites around Western Port***

Roosting forms an important component of the daily time budgets of many waterbirds; in coastal areas roosting activity can occupy up to 50% or more of the tidal cycle. Flocks of roosting birds contain either one species or a number of species. These flocks usually form around high tide although the time birds begin to congregate at a roost site varies between species. Oystercatchers come much earlier to their high-tide roosts than other species while smaller-sized species often roost much later towards high tide. The exact roost site for each species may vary according to time of day (some species have different roost sites at night) and prevailing weather conditions. Migratory birds may be more prone to disturbance at roost sites than non-migratory species as they are only present in a particular area for part of the year and so have little opportunity to become habituated to human activities.

#### **Why do shorebirds form a roost?**

- a) reduces risk of predation (more eyes looking for predators, decreased individual risk by being in a flock)
- b) information exchange (where to obtain food)
- c) synchronising of annual cycle
- d) sleep?
- e) save energy by forming flocks (Red Knot save up to 6% of energy by roosting in flocks)
- f) a place to go when the feeding grounds are covered

#### **What makes a good roost?**

The main attribute of a good shorebird roost site is remoteness from disturbance (human or predators) and closeness to feeding areas (usually 1-3km in the day, 6-8km at night). Other important attributes are:

- a) distance to tall vegetation (where predators may hide). Vegetation needs to be less than 0.13m at 2m from a birds and not more than 5m, 70m from a bird)
- b) microclimate (birds save heat by sheltering behind small hillocks or in rough ground)
- c) type of site may depend on plumage

Birds may be more vulnerable to predators at night as they are harder to detect, in addition performance of escape flights in flocks may be more hazardous and birds may consume different prey during the day and at night which may result in different roosts being used.

### **Roosts in Western Port**

There are 14 main roosts within Western Port. These roost sites are on low offshore islands such as Reef Island, artificial islands such as Long Island, sandy points (Sandy Point, Stockyard Point), saltmarsh (Bunyip River, Yallock Creek), mangroves (Tooradin), swamps (Bullock Swamp), pebble or rocky beaches (Tortoise Head). Outside Western Port some birds roost on sandy oceanic beaches such as Flinders and Kitty Miller Bay. Other roost sites include freshwater pools, dams, rooves and paddocks.

### **Threats to roost sites**

There are many human activities that can potentially affect roost sites of shorebirds. Disturbance is the major threat within Western Port. Other threats include direct loss from foreshore subdivision and development, introduced plants (*Spartina* sp) and native vegetation (mangroves), loss of productivity in feeding grounds and bad management practices.

### **Activities considered disturbing within Western Port**

In 2000 we surveyed managers of over 90 wetlands across Australia to determine threats to shorebird sites. Eight of these sites were major roosts within Western Port. Managers identified 24 activities including fishing from boats, walking, walking with dogs, fishing from land, sailing, bird watching, swimming, eco-tourism/school groups, horse riding, para sailing, jet skies, off road cars and bikes, wind surfing, water skiing, cycling and canoeing were recorded among the threatening processes.

### **What can be done to protect shorebird roosts from disturbance**

- a) People management – liaison and education are important parts of people management. The effects of disturbance on shorebirds needs to be publicised through brochures, signs, local media releases, interpretation activities by local rangers and consultation with user groups such as fishers, sailing clubs, canoe clubs.
- b) Raise awareness in local and state governments so shorebird needs are considered during the planning process.
- c) Provide buffers for roost sites from disturbance such as aircraft, personal water craft, boats, swimming, running, fishing etc.
- d) Screen out visual disturbance (but not too tall)
- e) Exclude dogs and people – dogs cause a high level of disturbance when allowed to chase shorebirds. Restrictions should be made in co-operation with local council on affected area.
- f) Enforce legislation - Signing, patrolling and prosecuting on sites of high conservation priority is needed.

### ***Clive Minton, Tracking Shorebird Movements***

Banding of shorebirds in Western Port started in the 1970's and has been continued on by the Victorian and Australasian Wader Study Groups. Banding shorebirds has provided observers with the opportunity to record bird movements along the main flyways between breeding and non-breeding habitats. On a local scale however, banding shorebirds in Western Port has provided some understanding of individual species preferences for roost and feeding sites.

Levels of fidelity to roosting sites vary between species and individuals, and between age groups within species. This information contributes to the understanding of habitat selection by particular species and by different age classes within the species.

The uses of this information include:

- Ongoing monitoring of the numbers and movements of shorebirds
- Determining sites for further research and future conservation projects
- Land use planning around roost sites based on the needs of species present
- Regulation of recreational activities around roost and feeding areas

- Contributing to overall monitoring of Western Port using shorebirds as indicators of ecosystem health
- Contributing to world wide monitoring of shorebirds

The following information is a summary of the movements recorded for two important shorebird species in Western Port, the detail being sourced from the banding work undertaken by the Australasian and Victorian Wader Study Groups.

Red-necked Stint and Curlew Sandpiper are Arctic breeders. They are found around Western Port in mixed flocks at roosts and on the feeding grounds during the southern summer. Data gathered from banding and recapturing these species has contributed valuable information regarding population numbers over time, as well as identifying their preferred habitats for roosting and feeding.

## **2. Australian Bird Study Association Conference, Sale, Victoria**

### **Clive Minton – 20 years of shorebird banding and counting**

Coordinated 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 5 key sites with the aim of increasing the accuracy of counts so that they can better quantify changes in population levels.

Banding of waders commenced in the Perth area in 1959 but the scale of wader banding throughout Australia has been greatest since the late 1970s. 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 -measurement of reproduction rates by the proportion of first year birds in catches and of survival rates from capture/recapture data. The latter is now being furthered by the use of engraved leg flags that enable individuals to be identified in the field.

### **Alice Ewing - Twenty five years of wader counts in Corner Inlet**

Twenty five years of counting waders in the Corner Inlet region has revealed indications that some changes are happening in the populations of both migratory and residential species. Corner Inlet, which holds the largest population of waders in Victoria allows us a window through which to observe such changes.

Annual counts carried out in summer and winter suggest that, in general, the overall wader population seems to be stable, with some annual fluctuation as a result of year to year breeding success, with a major peak obvious in 1992, after a universally successful breeding year in 1991.

A highlight of some species: Of the migratory species, the Red-necked Stint is currently clearly on a good run, with successive good breeding years in four of the past six years. In contrast, in the Curlew Sandpiper, after a heavy population crash in the mid-1990s, there has been a steady population decline. It remains unclear why this trend is occurring. Similarly, in both the Red Knot and Grey Plover, population decreases also occurred in the mid-1990s, with lower population levels being maintained since then in both species.

In comparison, the Pied Oystercatcher, a resident species, exhibits a stable population. This is in contrast to another resident, the Sooty Oystercatcher. The Sooty Oystercatcher population appears to be increasing. It is the only wader species that utilises the Corner Inlet region that has shown such a genuine increase in population in the past 25 years of counts.

The counts are continuing to contribute important data that allow for analysis to help clarify the big picture, ultimately leading to the conservation of both migratory and resident shorebird species.

### **3. Public forum on the Wildlife Conservation Plan for Migratory Shorebirds (Environment Australia, Melbourne, 11/05/2005) – Peter Collins, Roz Jessop and Doris Graham.**

*Discussions were held on the draft plan. The following is an abstract of the introduction.*

A federal wildlife conservation plan sets out the research and management actions necessary to support survival of a migratory, marine or cetacean, species listed under the Environment Protection and Biodiversity Conservation Act 1999, which are not considered threatened but would benefit from a nationally coordinated approach to conservation.

In 2002, the Threatened Species Scientific Committee agreed that a Wildlife Conservation Plan for Migratory Shorebirds was a high priority. This is the first Wildlife Conservation Plan developed under the act.

Australia is already involved in a wide range of activities that promote the conservation of migratory shorebirds, both here and across the East Asian – Australasian Flyway. The Wildlife Conservation Plan for migratory shorebirds provides a strategic framework to ensure these activities plus future research and management actions, remain focused on the long-term survival of migratory shorebirds and their habitats.

The wildlife conservation plan contains the statutory elements as legislated by the EPBC (Environment, Protection and Biodiversity Conservation) Act. Further information on the plan can be obtained from <http://www.deh.gov.au>

### **4. Other papers**

Beasley L., Minton, C., Jessop R. & Collins, P. 2004. Sightings of waders leg-flagged in Victoria. Report Number 10. *Stilt* 46: 54-64.

Beasley L, Minton C, Jessop R, Collins P, Christie M. & Stewart I . 2004. Sightings of waders leg-flagged in South Australia – Report No. 2. *Stilt* 46: 48-50.

Beasley L, Minton C, Jessop R, Collins P, Christie M, Stewart I & Veltheim I. 2004. Sightings in 2003-04 of waders leg-flagged in South Australia – Report Number. 3. *Stilt* 46: 51-53.

Graham D, Collins P. & Jessop R. 2005. Aberrant plumages in some migratory waders in Australia. *WSG Bulletin* 107: 31-35.

Minton C. 2004. Measuring wader breeding success in the non-breeding season: the importance of immatures. *WSG Bulletin* 105: 90-92.

Minton C, Jessop R, Collins P. & Hassell C. 2005. Juvenile percentage of migratory waders in the 2004/05 Australian summer. *Stilt* 47: 10-14.

Minton C, Jessop R, Collins P, Sitters H & Hassell C. 2004. Juvenile percentages of migratory waders in the 2003/04 Australian summer. *Stilt* 46: 31-34.

Minton C, Jessop R, Collins P. & Veltheim I. 2004. Sightings in 2003-04 of waders leg-flagged in Victoria. Report Number 11. *Stilt* 46: 55-77.

Rogers K, Minton C. & Rogers D. 2005. Some sampling considerations relevant to estimating the first year proportion. *Stilt* 47: 4-9.

Skewes, J. 2004. Report on population monitoring counts, 2003. *Stilt* 46: 86-92.

## VWSG Financial Report 2004/05

Rosemary Davidson and Clive Minton

The VWSG's financial situation continues to be reasonably satisfactory although, yet again, expenditure during the year on normal operating activities exceeded income. Fortunately, as the Group has accumulated a small financial reserve over the years, this is not a serious problem. A significant part of the over- expenditure was on new and improved equipment, which will make our fieldwork activities more efficient and effective in future years.

The accounts contain a number of items relating to specific projects/contracts which the VWSG has undertaken. These make it rather more difficult to see the true financial position and therefore some explanation of the accounts may be helpful.

- 1) If the Coast Action/Coast care grant of \$4,000 is excluded then the total income for the year was \$7,854. This income was boosted by the extremely generous donations (\$2,035) received in memory of Donald Macmillan, one of our members who died during the year. There were also other welcome donations of \$410. Without these items income would have been only \$5,409.
- 2) Expenses totalled \$9,550, with nearly \$5,000 of this being capital expenditure. Therefore direct operating expenses were about \$4,500, i.e. about \$1,000 more than our income net of special items.
- 3) The cash position of the Group is greatly enhanced by monies which are committed to specific projects/contracts, but which had not been spent at year end. \$29,000 relates to a DEH contract, taken on behalf of Parks Victoria for the spraying of *Spartina* at Andersons Inlet. This has now (August 2005) all been spent. \$8,000 of the cash in the bank at 30<sup>th</sup> June relates to a Coast Action/Coast Care grant for analysis and publication of Wader and Tern count and banding data from Corner Inlet. There is also around \$4,000 still unspent in relation to the Shallow Inlet and Discovery Bay projects.
- 4) The true VWSG cash reserves at year end (30/06/05) are about \$12,000, a decrease of around \$1,000 over last year.

Acknowledgements for financial and other assistance provided to the VWSG during the year are included in the introduction to this Bulletin.

Financial Statement from 1<sup>st</sup> July 2004 to 30<sup>th</sup> June 2005 – Victorian Wader Study Group Inc.

<b>INCOME</b>		<b>EXPENDITURE</b>	
Subscriptions	\$2,620.46	Printing Bulletin	\$1,446.00
Bank Interest	\$2,007.81	Postage and stationary	
Sale of Bulletins	\$40.00	Photocopying	
Excess from AGM food	\$80.00	Phone calls-conservation & teams	\$380.85
Excess rent Manns Beach Hall	\$17.00	Bank & Government charges	\$25.30
Excess SA visit	\$24.00	Incorporation fee	\$36.00
Donations: M Anderson, S Chong, M Dawkins, D Macmillan, P McWhirter, K Melaine, B Moss, H Phillipson, N Roussac, J Stoney	\$410.00	Boat hire- Barralliar Island	\$45.00
		Misc. expenses- gifts, flowers etc.	\$235.63
		<b>Sub-total</b>	<b>\$2,168.78</b>
		<b>Equipment</b>	
Donald Macmillan Memorial Donations	\$2035.00	New firing box	\$2,000.00
		New radio & batteries	\$1356.26
<b>Sub-total</b>	<b>\$7234.27</b>	Fuses	\$842.00
		Trailer expenses (Reg. & repairs)	\$181.16
<b>Grants &amp; Contracts</b>		Cable & winding drums	\$451.48
DSE: Coast Action Project Grant		Camouflage Material	\$129.00
Corner Inlet Analysis	\$4000.00	Circlips, screw drivers, twine, etc	\$296.35
PINP cannon net usage	\$250.00	Engraved leg flags	\$1,192.00
Uni of Melbourne cannon net usage	\$370.00	Colour bands & darvic	\$190.00
		<b>Sub-total</b>	<b>\$6,638.25</b>
		<b>Project Expenses</b>	
		Payment to Monash Uni (Red Knot DNA sexing)	\$743.05
<b>Sub-total</b>	<b>\$4,620.00</b>		
<b>TOTAL INCOME</b>	<b>\$11854.27</b>	<b>TOTAL EXPENSES</b>	<b>\$9,550.08</b>
<b>Cash Balance 1/07/2004</b>		<b>Cash Balance 30/06/2005</b>	
Petty Cash	\$2.60	Petty Cash	\$29.60
Westpac Account	\$3,253.88	Westpac Account	\$512.42
Macquarie Account	\$49,418.86	Macquarie Account	\$53,681.53
<b>Total</b>	<b>\$52,675.34</b>	<b>Total</b>	<b>\$52,675.34</b>
Unpresented Cheques	\$1,324.00	Unpresented cheques	\$26.00
<b>Net total</b>	<b>\$51,351.34</b>	<b>Net total</b>	<b>\$53,655.53</b>
TOTAL CASH <i>together with</i>	\$51,351.31	TOTAL CASH <i>together with</i>	\$53,655.53
TOTAL INCOME	\$11,854.27	TOTAL EXPENDITURE	\$9,550.08
	<b>\$63,205.61</b>		<b>\$63,205.61</b>



## **VWSG INC Membership List**

Bev & Geoff Abbott  
Rick Aitchison  
Charles & Jocelyn Allen  
Terri Allen  
Mark Anderson  
Peter Anton  
Allen Archbold  
Steve & Robyn Atkinson  
Mark & Terry Barter  
Graham & Jenny Beal  
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Rosemary Davidson  
Michael Dawkins  
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Julie Deleyev  
Xenia Dennett  
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Lee Duclos  
Andrew Dunn  
John Eckert  
Dianne Emslie  
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Jon Fallaw & Becky Hayward  
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Tim Gunn  
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Tony Habraken  
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Sue Harris  
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Peter Hermans  
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Vivien Holyoake  
Tania Ireton  
Ros Jessop & Peter Collins  
Penny & Murray Johns  
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Irma Kluger  
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Joy Knight  
Leona Knight  
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Australian Bird & Bat Banding Scheme  
 Birds Australia  
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 CSIRO Library, ACT  
 Dept. of Defence, Swan Is. Queenscliff  
 Eyre Bird Observatory  
 French Is. Head Ranger FINP  
 Highland Ringing Group, Scotland  
 Hong Kong- Geoff Carey  
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 Melbourne Water (Werribee Sew. Farm)  
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 Queensland Wader Study Group  
 Rhyll Gen Man Phillip Is Nature Park  
 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

**Bulletins also sent to**  
 Dept. of Primary Industry



Setting the net at 80 Mile Beach, WA.



**Journal of the Victorian Wader Study Group**  
**Bulletin Number 28 2005**

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