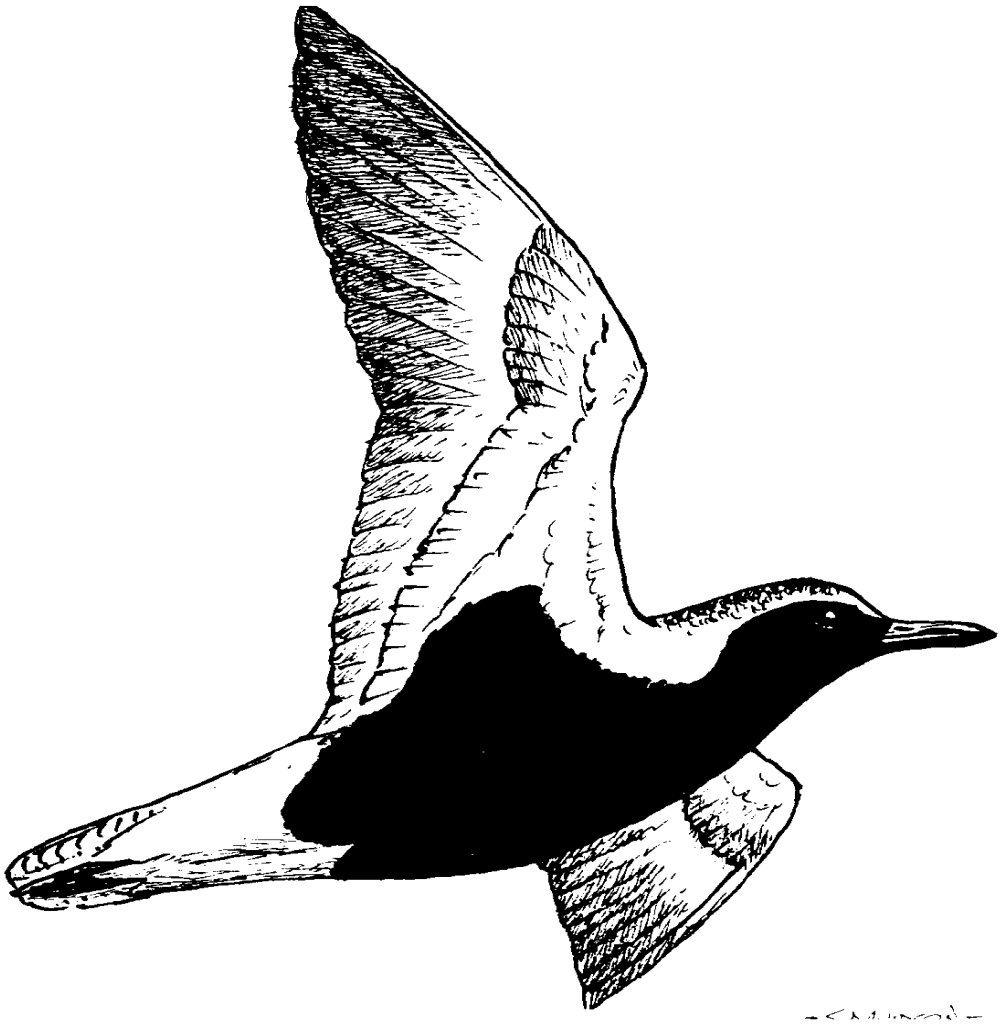
VWSG BULLETIN

JOURNAL OF THE VICTORIAN WADER STUDY GROUP

Number 39
August 2016



ISSN 0159-6896

VICTORIAN WADER STUDY GROUP INC.

MISSION STATEMENT

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

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

FORMATION/BACKGROUND

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

VICTORIAN WADER STUDY GROUP INC.

OFFICE BEARERS

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

Treasurer/Secretary
Helen Vaughan

vicwsg@gmail.com

Equipment Officer
Paul Buchhorn

Buchhorn@peninsula.hotkey.net.au

Editor/Deputy Chairman
Dr. Rosalind Jessop

vicwsg@yahoo.com

Conservation Officer
Prue Wright
Prue327@gmail.com

Assistant Equipment Officer
Rod McFarlane

vicwsg@gmail.com

Assistant Editors: Dr Doris Graham, Margaret Rowe, Linda Patrick, Prue Wright.

Field Work Manager

Rob Patrick	rob@farmingminds.com.au	0408 429 944

Committee for 2016/17
The above officers and
Robyn Atkinson, Maureen Christie, Dave Cropley, Joris Driessen, Ken Gosbell, Birgita Hansen, Penny Johns, Marcel Klaassen, Graeme Rowe, Roger Standen, Susan Taylor, Inka Veltheim.

Public Officer: Dr. Clive Minton

Subscriptions for 2016/17 (payable in advance on 1 July 2016)

Full Member	$30.00
Student	$15.00

This bulletin is usually published on the date of the Annual General Meeting and contains reports and cumulative records of fieldwork of the Victorian Wader Study Group (VWSG) with articles, field notes and other material. Contributions are welcome. Please consult the editor or assistant editor on questions of format. Line illustrations are reproduced from the Australasian Wader Studies Group journal, "Stilt" with permission of the editor unless otherwise indicated.

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

©VWSG This book is copyright. Apart from any fair dealings for the purpose of private study, research, criticism or review, as permitted under the Copyright Act, no part may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission. Inquiries should be directed to the editor.

VWSG WEB SITE http://www.vwsg.org.au/

Our web site is maintained by Birgita Hansen

Summary of VWSG Activities in 2015/16

Clive Minton

Introduction

This Bulletin is the annual written communication to VWSG members and those who have helped in one way or another with both the fieldwork and 'behind the scenes' activities of the VWSG. It acts as the permanent record to which we can refer in the future for birds banded, birds recovered, flagged birds resighted and data accumulated, analysed and published during the last 12 months. The Annual Bulletin has thus become the historical record of the 38 year duration of the Victorian Wader Study Group.

This year a significant milestone was reached. We have now caught over a quarter of a million waders. That seems an awful lot of birds whichever way we look at it. In the earliest days, when our only catching method was night-time mist-netting, 100 birds was considered a mammoth achievement. Even now our average catch size is only about 160 birds. Overall we have now made over 1,750 cannon net catches, as well as some 40 mist net catches, over the years to achieve this quarter of a million total. With an average fieldwork team of 15-20 people – some of whom are regulars and others who only participate once – and taking into account that we also have days when we have failed to make a catch, it probably means that between 5,000 and 10,000 different individuals have taken part in our fieldwork activities over the years.

Each year has its highlights and 'lowlights'. In 2015, and the first half of 2016, I think that there were far more of the former than the latter! Some details are given below – and in the next 80 or so pages!

Wader Fieldwork

There was a marked increase in the total number of birds (7,087) which we caught in calendar year 2015. In recent years our annual total has averaged around 5,000, and the 2015 total is the highest since 2006 (8,143). The main reason for the high overall total was two huge catches on successive days at Werribee Sewage Farm in January 2015 – a total of 3,176 (including 2,532 Red-necked Stint!). But it was also a good year for catching a whole range of species in above average numbers – 649 Curlew Sandpiper, 577 Sharp-tailed Sandpiper, 508 Ruddy Turnstone, 180 Pied Oystercatcher, 180 Red-necked Avocet and 139 Bar-tailed Godwit.

In contrast, the first half of 2016 has been more subdued, with no especially large catches. However, the 2016 winter was highlighted by an excellent catch of 164 Bar-tailed Godwit in Corner Inlet – our best catch of this species for several years. Particular difficulties were experienced in catching our normal numbers of both Pied and Sooty Oystercatcher, with totals to early August, 2016 of only 46 Pied and 19 Sooty Oystercatcher, well short of our respective annual minimum targets of 150/50. It seems as if the oystercatchers have been learning at a faster rate than we have in the last year and they are now outsmarting us on almost every catching attempt. Sooties in particular seem to have that 'sixth sense', being able to read the signs of wader catching activities, to avoid standing anywhere near the front of even the most well camouflaged cannon net and to disappear over the horizon at the first signs of twinkling! The reduced catching success may also be a consequence of the increasingly geriatric nature of the fieldwork team, especially its long-term leader!

It is notable that almost throughout our long history the proportion of retraps in our annual catch total has been around 20%. This year it dropped a little to 16.6%, mainly as a direct result of the huge catches of Red-necked Stint at the Werribee Sewage Farm where only about 15% of the stints carry bands.

Tern Fieldwork

It was overall a good year for our long-term studies of terns in Victoria. After some marked fluctuations in the breeding population of Crested Terns in recent years at the three main colonies the total number and distribution of breeding pairs returned to a more normal pattern in the 2015/16 breeding season. This presumably indicates that the food supply (sardines and pilchards) had returned to a more normal level and distribution after some marked fluctuations in recent years. The overall number of breeding pairs of Crested Terns remained the same but the colony at The Nobbies returned to being by far the largest (4,600 pairs). An amazing 2,994 chicks were banded there in just five hours on 21 December. Breeding success this year was also particularly good, with most hatching chicks at the Mud Islands and Nobbies colonies eventually fledging successfully.

Caspian Terns also showed a slight increase in breeding pairs and produced a reasonable number of fledged young.

After many years of growth (from 1,000 pairs in 1985 to 6,000 – 6,500 pairs in recent years) the Crested Tern breeding population now seems to be flattening out. It will be interesting to see the population trajectory over the next five to ten years given that no radical changes in the habitat or factors effecting breeding success are foreseen.

A new innovation in the last two years has been the systematic recording (mostly with a camera) of the band numbers of Crested Terns spending the winter non-breeding season on the northern New South Wales coast. Steve McBride has so far recorded 79 of our birds. This work gives us a more accurate estimate of the age-structure of the Crested Tern population than any data we have been able to collect previously. Quite a few of the birds he has seen have been over 20 years of age, the oldest (from Corner Inlet) being a vintage 28 ½ year old bird.

Recoveries and Flag-sightings

Recoveries resulting from members of the public finding and reporting dead, banded birds (either in Australia or overseas) have almost disappeared. This is a worldwide phenomenon and not easily explainable. One would have expected increased and easy, simple communication options would have enhanced reporting rates. But maybe people have lost that excitement/novelty value of finding a banded bird in the field or maybe complacency has reduced the proportion of bands found which are subsequently reported to the Banding Office.

The dearth of recoveries is however more than outweighed by the huge number of flag-sightings of waders reported to our flag-sightings coordinator, mainly through the email system. Unbelievably large numbers (many hundreds) of Bar-tailed Godwit and Red Knot banded and flagged in Victoria are seen both in New Zealand, where many birds move to for winter, and in Bohai Bay, Yellow Sea, which is so extensively used as a stop-over, particularly on northwards migration. Even one of our resident wader species, Red-necked Avocet, has produced unexpectedly frequent and long movements within Australia – particularly to the Hunter Estuary at Newcastle, but also to Brisbane, Broome and South Australia.

The greatest surprise during the year was the observation of a Little Stint, in full breeding plumage, at Mai Po Marshes, Hong Kong, wearing a plain orange flag. Whether it was one of the nine Little Stints identified at the time of banding by VWSG or whether it was a bird which at the time of banding was thought to be a Red-necked Stint isn't determinable unfortunately because it was a plain rather than an engraved flag.

An exciting new flag-sighting development was two separate reports of orange-flagged Whiskered Terns seen overseas. These were seen in central Java, Indonesia, in autumn 2016 and were some 4,500km from where they would have been originally caught and flagged, at Werribee Sewage Farm. The VWSG has caught 1,403 Whiskered Tern since 1982, and the only previous recorded movement was of a flagged bird which was seen at Roebuck Plains, near Broome. These are the first overseas recoveries of Whiskered Terns marked in Australia. They support the previously held view that many of the Whiskered Terns present in summer, in Australia are non-breeding visitors from populations which breed further north.

Percentage Juveniles (Breeding Success)

The 2015 Arctic breeding season seems to have been the worst on record in terms of the production of fledged young. It follows a not-very-good year in 2014 also. Curlew Sandpiper and Sanderling seem to have had an almost total breeding failure, and only Bar-tailed Godwit and Red Knot that come to south east Australia seem to have had a good breeding year. Our birds are certainly due for a good breeding season in 2016, so let us hope that we are inundated with juvenile birds next summer!

Geolocators and Satellite Transmitters

We continued to deploy large numbers of geolocators on Ruddy Turnstone on King Island this year and more modest numbers in the south east of South Australia. Retrieval rates have been good and now average 43% overall on Turnstone over the seven year period we have been deploying geolocators on them. During the week-long visit to King Island in November a record number (20) of geolocators were retrieved from Ruddy Turnstone. There are some exciting potential developments now appearing suggesting Ruddy Turnstone may be trying to adapt (e.g. by changing their migration strategy) to the major losses of habitat they have experienced in the critical Yellow Sea stop-over region.

A new development was the deployment of special light-weight (0.3g) geolocators on Red-necked Stint just before they departed on northward migration in April, 2016. This deployment of 61 geolocators on

Red-necked Stint was hugely facilitated via a generous donation of $7,500 from one of the VWSG's long-time members, Xenia Dennett. This paid for $7,500 of the $12,000 cost of the geolocator units – the rest being paid for out of VWSG accumulated reserves. Xenia has recently made a further similar donation and this will be used in the 2016/17 summer, probably, for further geolocators or for satellite transmitters, if the new, low-weight version (2.5g) becomes commercially available in time.

The two satellite transmitters put on to Grey Plover in South Australia by Maureen Christie's team in November, 2015, have performed brilliantly with both birds successfully migrating northwards, including a long stop-over in the Yellow Sea, and eventually going on to breed on Wrangel Island off the north coast of Chukotka, eastern Siberia. This is the first evidence of any bird from Australia visiting this remote Arctic Island. At the time of writing this, both are now on their way back from the Arctic, with one having made a surprising major detour via the New Siberian Islands.

Considerable thanks are due to Tony Flaherty, Manager of the Mount Lofty Ranges Natural Resource Management Region in South Australia, who provided funding for the transmitters.

Equipment
The usual strong maintenance work on our equipment has been continued unobtrusively by Paul Buckhorn and Rod McFarlane. Most recently, new heads have been put on some of the projectiles to improve their closeness-of-fit in the barrels, which had been affected by rusting of the projectiles due to their frequent immersion in saltwater. The trailer, which has a hard life being driven in an overloaded condition along salty, sandy beaches and over uneven ground, has also received some significant 'servicing' in early 2016. This purpose-built trailer – financed by a generous donation many years ago from Woodside Petroleum – is a critical component of our equipment. Special thanks to Paul who had the foresight to install a stainless steel floor in the trailer because of the regular carriage of seawater-soaked nets etc.

Financial
As usual the VWSG spent most of its income from members' subscriptions on printing the Bulletin. Now that some members have opted to receive their Bulletin in an electronic format maybe our costs in this area will reduce. It is only through generous donations from individuals (such as Xenia Dennett) and organisations (such as the Victorian Government's CoastCare Scheme) that we are able to cover most of our annual fieldwork needs and other expenditures. To assist us to remain financially viable, the VWSG has increased its annual subscription to $30 (from $20) – the first subscription increase for more than 20 years!

Members
We were extremely saddened that Rosemary Davidson, who had been our Treasurer/Secretary for the last 20 years, died in late 2015. Helen Vaughan has kindly taken on her Treasurer role.

We have kept our promise – Rosemary's last wish – to continue to use her house at Yanakie as our base when making extended visits to Corner Inlet during the winter. Her children have supported this and near neighbour, member Neville Hatten, has also most generously offered to continue to make his house available to us so that everybody in the team can have a bed.

Prue Wright has also now kindly agreed to take on the responsibility, from Doris Graham, for conservation activities in Victoria.

Marcel Klaassen (Professor at Deakin University) and Joris Driessen (who has now taken over responsibility from Roger Standen for the VWSG and AWSG leg-flag databases) have both been elected to the VWSG Committee.

We would like to thank Roger Standen enormously for the huge amount of work he has done over the last three years to pick-up the leg-flag database operations after Heather Gibbs sadly died, and to move everything forward to even more efficient ways of processing incoming data in the future.

Doris Graham has been elected a Life Member of the VWSG. She has input to our activities in a huge variety of ways over the last 25 years and continues to take an active interest in our successes (and occasional failures!).

The Future
Almost all of VWSG's fieldwork activities are part of a range of long-term projects, some of which were formulated at the time of our formal inception 38 years ago. These are continually kept under review,

and sometimes terminated, as new projects are started (e.g. those with geolocators and, we hope, with satellite transmitters). Our human resources are at times stretched to the limit and very occasionally over the last couple of years we have had to cancel or defer activities due to the lack of an adequate team. Overall, however, we receive terrific support from our members both in the field and in the whole range of other activities carried out behind the scenes, at 'home'. We've only been able to achieve the results we have by the sustained input of many, many individuals and we look forward to that continuing in the future.

Can we also again thank others who have helped the VWSG in so many different ways – volunteers who have greatly strengthened our fieldwork teams, landowners who have given permission to operate on or traverse their land, financial supporters – both individual and government – and especially to Parks Victoria whose Foster, Queenscliff and San Remo offices have helped us so much, especially with boat transport.

It is now really pleasing to see that, particularly with the aid of staff and students at Deakin University, and at the University of Queensland, we have been able to get a lot of our data published in high quality scientific papers and used in tangible ways for conservation purposes. It is particularly pleasing to see that there are some positive signs of beneficial conservation moves at the most critical stopover location for our migratory waders – the Yellow Sea. Knowledge, which derives from careful research, is the necessary foundation for all conservation.

Pacific Gull taking a bath (Photos Doris Graham)

Doris Graham – camera in hand at Barry Beach in Corner Inlet (Photo Roz Jessop).

VWSG Honorary Life Membership Awarded to Doris Graham

At the 2016 VWSG Annual General Meeting, Roz Jessop will propose that Doris Graham becomes an Honorary Life Member of the VWSG.

Doris joined the VWSG in 1992 and has attended almost every VWSG field work session and many AWSG expeditions to NW Australia since then. Doris soon volunteered to become the assistant editor for the VWSG Bulletin (1995/96) a role she still undertakes. Her scientific background gives her the ability to pick up all those little grammatical and spelling errors to improve the flow of the bulletin.

For many years Doris along with Malcolm Brown organized the production of leg flags for both Victoria and NW Australia. Many pleasant hours were spent at various households throughout Victoria making thousands of leg flags for a wide variety of species. These pleasant sessions, vastly improved by the consumption of wine, were the result of a lot of hard work by Doris, auditing the flags, organizing the purchase of the plastic, the cutting of blanks for the different species and coordination of equipment and invitations for leg flag making days in the "off season" so we didn't run out during the summer. The end of the production of the plastic Darvic combined with the groups move to engraved flags which are available commercially has greatly reduced the need for plain flags over the last few years.

Doris with Graeme Rowe sorting a batch of engraved leg flags for Victoria.

Doris also took on the role of Conservation Office for the group from 2003 to 2016. Many hours were dedicated every year to liaising with other groups, attending hearings and writing quality submissions regarding conservation issues relating to shorebirds throughout Victoria such as housing developments at Queenscliff, the proposed expansion of the Port of Hastings, collection of beach cast algae in SA and potential loss of shorebird habitat at the Moolap Saltworks in Geelong. Doris also prepared and gave many talks on waders to conservation groups, Sunday markets, BirdLife and Bird Observer Club events etc. as part of her role, as well as writing papers for scientific journals and preparing posters for presentation at conferences.

Doris was ecstatic when Clive asked her to present a synopsis written by Clive Minton, Jim Wilson and Mark Barter on behalf of Australia on her favourite wader, the Curlew Sandpiper, at a special International Wader Study Group meeting held at Langebaan near Cape Town in South Africa in 1998. An abstract can be found at:
https://sora.unm.edu/sites/default/files/journals/iwsgb/v087/p00005-p00007.pdf

Doris's keen interest in photography has enabled the group to make a photographic record of the plumage of different aged shorebirds at different times of the year when they are residing in both Victoria and NW Australia.

Please join with me in proclaiming Doris an Honorary Life Member of the VWSG.

Doris at her 80th birthday party with Marg Reni – great fun had by all!! (Photo by Paul van Loon)

Total Number of Waders Caught by Species - VWSG 2015			
SPECIES	**New**	**Retrap**	**Total**
Bar-tailed Godwit	86	53	139
Common Greenshank	2	0	2
Ruddy Turnstone	264	244	508
Red Knot	73	1	74
Sanderling	79	6	85
Red-necked Stint	3838	592	4430
Sharp-tailed Sandpiper	555	22	577
Curlew Sandpiper	574	75	649
Broad-billed Sandpiper	1	0	1
Pied Oystercatcher	116	64	180
Sooty Oystercatcher	17	32	49
Black-winged Stilt	2	0	2
Banded Stilt	74	5	79
Red-necked Avocet	106	74	180
Pacific Golden Plover	3	0	3
Grey Plover	3	2	5
Red-capped Plover	30	0	30
Double-banded Plover	75	4	79
Hooded Plover	10	2	12
Masked Lapwing	3	0	3
20 Species	**5911**	**1176**	**7087**
Table prepared by Helen Vaughan and Clive Minton			

The 2015 catch total of 7,087 was much higher than in recent years. This was mainly because of two massive catches of Red-necked Stint near Werribee Sewage Farm in January, 2015. The overall total for Red-necked Stint was 4,430. The other notable totals were 649 Curlew Sandpiper; 577 Sharp-tailed Sandpiper; 508 Ruddy Turnstone; 180 Pied Oystercatcher and 180 Red-necked Avocets. By contrast, the total for Sanderling, 85 was well below the usual level.

Retraps 1,176 formed a slightly lower percentage 16.6% of the total than usual c. 20%. This was mainly an effect of the 13.3% retrap rate for the very large Red-necked Stint total.

Total Waders Caught by Species 1975 to December 2015 by VWSG			
Species	**New**	**Retrap**	**Total**
Latham's Snipe	347	14	361
Australian Painted Snipe	1	0	1
Black-tailed Godwit	4	0	4
Bar-tailed Godwit	5622	806	6428
Short-billed Dowitcher	1	0	1
Whimbrel	49	6	55
Eastern Curlew	873	89	962
Marsh Sandpiper	2	0	2
Common Greenshank	541	64	605
Terek Sandpiper	37	1	38
Grey-tailed Tattler	38	3	41
Ruddy Turnstone	5933	3056	8989
Great Knot	700	89	789
Red Knot	5264	744	6008
Sanderling	5732	2127	7859
Little Stint	9	0	9
Red-necked Stint	127842	33850	161692
Long-toed Stint	1	0	1
Pectoral Sandpiper	2	0	2
Sharp-tailed Sandpiper	10668	470	11138
Curlew Sandpiper	27333	5167	32500
Cox's Sandpiper	1	0	1
Broad-billed Sandpiper	7	0	7
Pied Oystercatcher	3403	1720	5123
Sooty Oystercatcher	1092	410	1502
Black-winged Stilt	53	0	53
Banded Stilt	2112	8	2120
Red-necked Avocet	908	131	1039
Pacific Golden Plover	270	26	296
Grey Plover	190	32	222
Red-capped Plover	774	187	961
Double-banded Plover	4020	1019	5039
Lesser Sand Plover	115	11	126
Greater Sand Plover	31	3	34
Black-fronted Plover	57	4	61
Hooded Plover	66	6	72
Red-kneed Dotterel	136	11	147
Masked Lapwing	196	5	201
38 Species	**204430**	**50059**	**254489**

Table prepared by Clive Minton and Helen Vaughan.

The VWSG has now caught over a quarter of a million birds since it first began wader banding on the shores of Werribee in 1975. There are now 12 species where the catch total is greater than 1,000, Red-necked Avocet being the most recent species to join this list.

Retraps over the whole period of 40 years comprised 19.7% of the total birds caught.

A total of 38 different species have now been caught.

New and Retrapped Waders Caught Each Calendar Year by VWSG			
Calendar Year	**New**	**Retrap**	**Total**
* 1975	9		9
* 1976	616	4	620
* 1977	482	12	494
* 1978	1296	42	1338
1979	7436	486	7922
1980	6121	1206	7327
1981	4561	869	5430
1982	3774	796	4570
1983	2875	628	3503
1984	4272	1045	5317
1985	4073	1051	5124
1986	7144	2057	9201
1987	5350	1559	6909
1988	8019	2697	10716
1989	5437	1584	7021
1990	4094	1950	6044
1991	3224	850	4074
1992	4652	861	5513
1993	8831	2588	11419
1994	4839	1753	6592
1995	2708	625	3333
1996	5263	1035	6298
1997	4366	1050	5416
1998	8083	1408	9491
1999	6515	1591	8106
2000	10350	2594	12944
2001	4839	1320	6159
2002	10421	2162	12583
2003	8495	2854	11349
2004	5110	1224	6334
2005	6320	1893	8213
2006	6676	1467	8143
2007	4689	924	5613
2008	4611	1317	5928
2009	3965	831	4796
2010	3006	759	3765
2011	4291	830	5121
2012	3598	869	4467
2013	4404	1084	5488
2014	3704	1008	4712
2015	5911	1176	7087
Totals to end 2015	**204430**	**50059**	**254489**
Average annual total for 1979 - 2015 = 6812 (* excluded)			
Table prepared by Helen Vaughan and Clive Minton			

The 2015 total of 7,087 was the highest yearly total since 8,143 waders were caught in 2006. In recent years we have deliberately been more selective in our catching and more effort has gone on targeted captures for the purpose of deploying and retrieving geolocators. 2015 was unusual because of the two exceptionally large catches at Werribee on 16-17 January 1,422 and 1,754 respectively. The second of these mostly comprised of Red-necked Stint but the first had an excellent total of 418 Curlew Sandpiper and 179 Sharp-tailed Sandpiper (2 Red Knot and 1 Broad-billed Sandpiper also!).

Note the huge jump in annual catch total in 1979, when cannon netting was first used for waders in Australia.

Total waders Caught Each 6 months 1979 to 2015 – VWSG			
Calendar Year	**January to June**	**July to December**	**Total**
1975			9
1976			620
1977			494
1978			1338
1979	4289	3633	7922
1980	4127	3200	7327
1981	2113	3317	5430
1982	2394	2176	4570
1983	2882	621	3503
1984	2654	2663	5317
1985	3972	1152	5124
1986	5000	4201	9201
1987	3135	3774	6909
1988	5235	5481	10716
1989	3854	3167	7021
1990	1661	4383	6044
1991	2376	1698	4074
1992	3357	2156	5513
1993	5287	6132	11419
1994	2789	3803	6592
1995	1521	1812	3333
1996	1802	4496	6298
1997	1913	3503	5416
1998	5568	3923	9491
1999	4142	3964	8106
2000	5987	6957	12944
2001	3851	2308	6159
2002	8174	4409	12583
2003	3033	8316	11349
2004	1288	5046	6334
2005	5003	3210	8213
2006	5192	2951	8143
2007	3646	1967	5613
2008	3812	2116	5928
2009	2726	2070	4796
2010	2136	1629	3765
2011	1967	3154	5121
2012	3199	1268	4467
2013	3270	2218	5488
2014	2768	1944	4712
2015	4651	2436	7087
Totals to end 2015	**130774**	**121254**	**254489**

Table prepared by Helen Vaughan and Clive Minton
Note: Six month data are not available for years 1975 - 1978.

Over the 37 years of cannon netting the numbers of waders caught in each half of the year have been more or less equal when averaged over a number of years. However, there have been marked fluctuations from year to year and 2015 was one such year. Because of the large January catches (already mentioned in a footnote to a previous Table) nearly twice as many birds were banded in the first half of the year compared than in the second half of the year.

Location of Waders Caught in Victoria, South Australia & Tasmania			
	To Dec 2014	**2015**	**Total**
Victoria			
Werribee	67876	4717	72593
Western Port/Flinders	65482	1004	66486
Queenscliff/Swan Bay	31975	0	31975
Corner Inlet	31888	540	32428
Anderson Inlet(Inverloch)	22306	7	22313
Sandy Point/Shallow Inlet	2788	0	2788
Laverton	956	0	956
Mud Islands	757	0	757
Killarney Beach	512	0	512
Barwon Heads	845	0	845
Other	628	0	628
South Australia	*18923*	*507*	*19430*
Tasmania	*2556*	*312*	*2868*
Total	**247492**	**7087**	**254579**
Other includes Geelong (Point Henry/Belmont), Bendigo Sewage Farm, Seaford Swamp, Braeside/Croyden, Gippsland Lakes and Toowong Table prepared by Helen Vaughan and Clive Minton			

In the early days of the VWSG all waders were caught at Werribee Sewage Farm. In recent years the proportion has been much lower, with catching there virtually confined to three days in the Christmas/New Year period and possibly one or two additional days in the October to March period (usually January). However, the Werribee numbers were given a huge boost in 2015 by the two large catches in January and Werribee topped the list for the first time for a number of years.

The Queenscliff/Swan Bay area was a main stay of our catching activities for more than 20 years. Its use by waders has been greatly reduced in recent years due to the lack of fresh deposits of sand on its eastern shores. This has made Sand Island less suitable for wader roosting.

The long-running (since 1993) catch programme in the south east of South Australia has now produced a total of 19,430 birds caught. The King Island total – comprised mostly of Ruddy Turnstone – has now reached 2,868 over nine years.

Number of Waders Processed by the VWSG Each Month to December 2015													
	J	F	M	A	M	J	J	A	S	O	N	D	TOTAL
Latham's Snipe	51	44	0	0	0	0	0	0	106	99	35	61	396
Australian Painted Snipe	0	0	0	1	0	0	0	0	0	0	0	0	1
Short-billed Dowitcher	0	0	0	0	0	1	0	0	0	0	0	0	1
Black-tailed Godwit	1	0	0	0	0	1	0	0	0	1	1	0	4
Bar-tailed Godwit	889	1414	777	99	24	842	127	286	77	335	294	566	5730
Whimbrel	3	2	41	0	0	1	0	0	1	4	3	0	55
Eastern Curlew	23	181	24	0	24	18	21	76	175	149	180	100	971
Common Greenshank	69	135	123	0	0	0	0	0	0	41	177	60	605
Marsh Sandpiper	0	0	0	0	0	0	0	0	0	0	0	2	2
Terek Sandpiper	17	2	1	1	2	0	1	1	0	1	1	12	39
Grey-tailed Tattler	31	0	1	3	0	4	0	0	0	0	1	1	41
Ruddy Turnstone	440	711	2907	1954	39	23	77	103	132	216	1470	701	8773
Great Knot	197	87	26	0	0	30	21	6	16	118	78	130	709
Red Knot	928	417	302	203	47	491	469	139	96	1000	546	287	4925
Sanderling	376	1654	2060	770	0	0	1	5	0	265	893	725	6749
Little Stint	2	2	0	0	0	0	0	0	0	0	1	4	9
Red-necked Stint	2843	1852	7083	2837	546	749	1032	968	1104	2140	3724	4151	29029
Long-toed Stint	0	0	0	0	0	0	0	0	0	1	0	0	1
Pectoral Sandpiper	0	2	0	0	0	0	0	0	0	0	0	0	2
Sharp-tailed Sandpiper	1832	943	240	3	0	0	0	16	635	564	748	3212	8193
Curlew Sandpiper	1627	1709	1729	289	223	128	274	528	348	1140	943	1703	10641
Broad-billed Sandpiper	1	2	0	0	0	0	0	0	0	0	0	3	6
Pied Oystercatcher	170	258	408	626	817	1029	828	502	235	41	41	63	5018
Sooty Oystercatcher	22	108	86	211	255	376	299	144	0	1	5	3	1510
Black-winged Stilt	6	9	0	0	0	0	1	12	0	4	2	18	52
Banded Stilt	107	50	12	41	59	0	0	0	15	0	0	162	446
Red-necked Avocet	344	0	0	0	14	0	11	78	279	171	47	89	1033
Pacific Golden Plover	40	27	62	2	0	0	0	0	0	28	66	65	290
Grey Plover	38	14	7	7	0	9	0	0	2	102	44	1	224
Red-capped Plover	44	89	68	124	210	110	77	29	12	23	39	44	869
Double-banded Plover	0	4	235	375	757	968	1113	1014	1	0	0	0	4467
Lesser Sand Plover	54	5	13	7	3	2	2	0	0	1	15	12	114
Greater Sand Plover	21	3	6	0	0	1	1	0	0	0	1	0	33
Black-fronted Dotterel	0	7	1	0	11	16	7	9	2	0	4	8	65
Hooded Plover	7	3	3	4	2	15	0	0	0	2	7	1	44
Red-kneed Dotterel	0	10	0	20	0	44	11	17	12	8	23	1	146
Masked Lapwing	5	11	93	17	5	13	4	1	1	5	21	19	195
Cox's Sandpiper	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	10188	9755	16308	7594	3038	4871	4377	3934	3249	6460	9411	12204	91389

"Processed" means that two or more of the following were recorded for a bird; bill length, total head length, wing length, weight, primary moult.

This table principally serves as an indicator to data analysers of the amount of biometric data available on each species for each different month of the year. Originally the table was extensively used when preparing the fieldwork program with effort being deployed into filling remaining gaps in the table. However this is no longer necessary as almost all gaps haven been filled within the limits of when birds are present in our study area and available to be sampled. You can't catch birds if they aren't there i.e. if they have all migrated away from the area, for instance to breed in the Northern Hemisphere!

The 91,389 birds processed indicate that approximately 35% of the waders caught by the VWSG had biometric data collected from them. An additional number (large) also had their primary moult recorded.

Numbers of Waders Leg-flagged by VWSG										
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Total**
Latham's Snipe	0	0	0	0	0	0	0	0	0	278
Australian Painted Snipe	0	0	0	0	1	0	0	0	0	1
Black-tailed Godwit	0	0	0	0	0	0	0	0	0	4
Bar-tailed Godwit	186	268	351	308	243	207	10	153	87	4170
Whimbrel	0	1	0	0	0	2	0	0	0	46
Eastern Curlew	0	0	8	0	38	9	0	4	0	603
Marsh Sandpiper	0	0	0	0	0	0	0	0	0	2
Common Greenshank	0	0	25	0	0	0	0	4	2	462
Terek Sandpiper	0	0	0	0	0	0	0	0	0	13
Grey-tailed Tattler	0	0	0	0	0	0	0	0	0	5
Ruddy Turnstone	328	497	238	348	455	170	317	375	259	4597
Great Knot	36	1	7	0	4	5	0	2	0	396
Red Knot	248	5	136	17	50	75	4	20	73	4057
Sanderling	506	261	89	277	439	280	159	179	78	4064
Little Stint	0	0	0	0	1	0	0	0	0	7
Red-necked Stint	1727	2754	2055	1496	2043	497	1943	1856	991	68794
Pectoral Sandpiper	0	0	0	0	0	0	0	0	0	1
Sharp-tailed Sandpiper	285	276	496	11	110	99	135	106	553	6493
Curlew Sandpiper	94	308	122	382	47	235	381	120	575	12244
Cox's Sandpiper	0	0	0	0	0	0	0	0	0	1
Broad-billed Sandpiper	0	0	0	0	0	0	0	1	1	5
Black-winged Stilt	0	6	0	0	2	0	5	0	2	35
Banded Stilt	0	0	0	54	332	15	1097	53	74	1777
Red-necked Avocet	0	0	0	0	0	199	63	169	105	676
Pacific Golden Plover	0	0	0	0	2	1	0	0	3	70
Grey Plover	5	0	16	0	1	0	0	10	3	121
Red-capped Plover	1	6	3	5	7	21	4	19	28	192
Double-banded Plover	10	45	2	11	37	72	17	121	75	757
Lesser Sand Plover	0	0	0	0	0	0	0	0	0	55
Greater Sand Plover	0	0	0	0	0	0	0	0	0	16
Hooded Plover	1	0	1	1	7	0	3	8	7	28
Black-fronted Dotterel	0	0	0	0	0	0	0	0	0	2
Red-kneed Dotterel	0	0	0	0	0	0	0	0	0	3
Masked Lapwing	1	5	0	0	1	2	0	1	3	44
Total	**3428**	**4433**	**3549**	**2910**	**3820**	**1889**	**4138**	**3201**	**2919**	**110019**
Table prepared by Helen Vaughan and Clive Minton										

The totals in the right hand column include all birds flagged by VWSG (including in South Australia and on King Island, Tasmania) since leg flagging was commenced in December 1989. Most of these are plain leg flags but engraved flags are included. Engraved flags have been widely used on the larger waders over the last 10 years.

Red-necked Stint comprise some 60% of the total. Nowadays a lesser emphasis is placed on Red-necked Stint because a lot of flagging data now exists for this species. Thus only 991 Red-necked Stint were flagged out of a total of 3,838 individuals banded for the first time in 2015. Elimination of leg-flagging is sometimes used when a super-large catch has been made as we are under time-pressure to have all birds banded and released within four hours of firing the net.

Numbers of Waders Leg-flagged in South Australia (orange/yellow)																		
Species	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Total**
Latham's Snipe	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Grey-tailed Tattler	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bar-tailed Godwit	0	0	0	3	0	8	0	0	0	0	0	0	0	12	6	0	0	29
Common Greenshank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	6
Ruddy Turnstone	234	226	73	193	76	141	74	258	84	141	96	109	268	45	117	322	254	2711
Great Knot	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	6
Red Knot	0	0	0	0	0	1	0	11	0	0	0	0	0	1	0	1	0	14
Sanderling	63	420	2	315	328	76	220	250	506	244	87	261	439	268	159	211	85	3934
Red-necked Stint	126	383	22	319	163	93	174	465	54	90	179	208	356	92	369	390	124	3607
Sharp-tailed Sandpiper	0	2	0	27	7	73	27	21	0	15	0	0	74	40	1	23	5	315
Curlew Sandpiper	24	11	0	190	13	2	103	8	21	33	1	4	15	0	7	8	0	440
Broad-billed Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Banded Stilt	0	0	0	0	0	0	0	334	0	0	0	54	332	12	998	53	0	1783
Pacific Golden Plover	0	2	0	0	1	0	16	13	0	0	0	0	2	1	0	0	1	36
Grey Plover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	5	15
Red-capped Plover	0	0	1	7	5	0	7	4	1	0	0	2	3	8	0	18	14	70
Double-banded Plover	0	0	4	5	1	0	0	27	2	0	1	5	29	12	0	3	0	89
Black-fronted Plover	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hooded Plover	0	0	0	0	1	0	0	0	1	0	1	1	5	0	3	14	12	38
Masked Lapwing	0	0	0	0	4	2	2	4	1	0	0	0	1	0	0	0	3	17
Total	**447**	**1045**	**106**	**1062**	**599**	**396**	**623**	**1395**	**670**	**523**	**365**	**644**	**1524**	**495**	**1660**	**1060**	**505**	**13119**
Table prepared by Helen Vaughan and Clive Minton																		

The table shows all waders leg-flagged in South Australia since flagging was commenced there in 1999. In 2015 the numbers of Sanderling and Red-necked Stint leg-flagged were much lower than in most recent years, as birds proved difficult to catch on our late season visit.

VWSG FIELDWORK PROGRAMME 2016

DATE	*PLACE AND OBJECTIVES*	**Tide time and height (m)**	
Sun 3 Jan	**Yallock Creek -** Small waders and Red-necked Avocet	08.28	2.77
Fri 15 -17 Jan	**Yallock Creek and Stockyard Point** Small waders and Red-necked Avocet	18.46 07.15 19.36 07.53	2.78 3.04 2.80 2.98
Tue 19 Jan	**Barralliar Island -** Small waders	09.12	2.81
Sat 30 Jan	**Rhyll -** Bar-tailed Godwit	07.00	2.89
Sat 6 - 28 Feb	**AWSG NWA 2016 Wader and Tern Expedition to Broome and 80 Mile Beach.**		
Wed 10 Feb to Wed 17 Feb	**King Island -** Ruddy Turnstone	14.44 07.10	1.36 to 1.25
Wed 2 Mar	**Count of Nooramunga part of Corner Inlet**	08.27	2.51
Thurs 3 Mar to Sun 6 Mar	**Corner Inlet** Bar-tailed Godwit, Red Knot and Oystercatcher	08.58 to 10.40	2.52 to 2.47
Sat 12 Mar	**Stockyard Point -** Pied Oystercatchers	17.37	3.03
Wed 23 -31 Mar (Easter)	**South Australia** Ruddy Turnstone and Sanderling	14.31 to 18.20	0.74 to 0.94
Sat 9 Apr to Sun 10 Apr	**Yallock Creek** Deployment of geolocators on Red-necked Stint	14.26 15.23	3.04 3.19
Sat 7 May to Sun 8 May	**Rhyll** Pied Oystercatcher and Bar-tailed Godwit	14.26 15.23	3.04 3.19
Mon 23 May to Wed 25 May	**Roussac Point, Charles Hall Road and Barry Beach** Pied and Sooty Oystercatcher	14.49 15.35 16.15	2.42 2.59 2.62
Wed 22 Jun	**Stockyard Point -** Pied Oystercatcher	14.33	3.05
Fri 1 Jul	**Count of Nooramunga part of Corner Inlet**	09.00	2.49
Sat 2 Jul to Tue 5 Jul	**Corner Inlet** Pied and Sooty Oystercatcher and wintering Bar-tailed Godwit and Red Knot	10.04 to 13.35	2.49 to 2.61
Tues 19 July	**Rhyll, Phillip Island** Pied Oystercatcher and Bar-tailed Godwit	12.16	2.73
Fri 29 July to Sun 31 July	**Barry Beach, Roussac Point, Charles Hall Rd.** Pied and Sooty Oystercatchers	8.06 to 09.53	2.57 to 2.52
Sat 6 Aug	**Stockyard Point** Pied Oystercatcher	15.38	3.05
Sat 27 Aug	**A.G.M.** At Clive's house, 165 Dalgetty Rd, Beaumaris 10am net mending, 4pm AGM, 6.00pm barbecue, 7–10pm Talks/Pictures		
Sat/Sun 8-9 Oct **Tues/Wed 18/19 Oct** **Sun/Tues 23/25 Oct** **Tues/Thurs 8/10 Oct**	**Yallock Creek** Retrieval of geolocators from Red-necked Stint**. Actual dates will depend on recce information on returned birds.**	18.03 & 06.53 15.02 & 15.52 07.09 to 08.39 07.04 to 08.21	2.70 & 2.86 2.82 & 2.87 3.08 to 2.70 2.87 to 2.70

DATE	PLACE AND OBJECTIVES	Tide time	Tide time
Wed 9 Nov	**Mud Islands** Crested Tern adults & Caspian Tern chicks	12.28 low tide	0.6
Tues 15 Nov to Thurs 24 Nov	**King Island** Ruddy Turnstone – geolocator retrieval	12.14 to 07.52	1.33 to 1.44
Fri 25 Nov to Sat 3 Dec	**South Australia** Ruddy Turnstone – geolocator retrieval	0851 to 1402	0.76 to 0.73
Sat 3 Dec to Thurs 8 Dec	**Thompson Beach (SA)** Deployment of satellite transmitters	0622 to 0753	2.49 to 2.10
Wed 14 Dec	**Mud Islands** Crested Tern & Caspian Tern chicks	12.04	1.39
Wed 21 Dec	**The Nobbies – Phillip Island** Crested Tern chicks	11.54 low tide	0.41
Thurs 22 Dec	**Corner Inlet – Clonmel Island** Caspian & Crested Tern chicks	14.38 low tide	0.53
Wed 28 Dec to Fri 30 Dec	**Werribee S F** Small waders	14.10 to 05.18	0.79 to 0.89

Swimming pool with a view!! – Cape Barren Geese on Phillip Island (Photo Roz Jessop)

Recoveries of Waders 2015/16

Joris Driessen, David Trudgen, Roz Jessop, Penny Johns, Rob Patrick, Prue Wright, Maureen Christie and Clive Minton

The 'Recoveries Report' used to be the most exciting part of the Annual Bulletin. However, there has been a steady drop-off in the number of reports received by the Banding Office from the general public in recent years. Nowadays by far the greatest volume of information on migratory movements of individual birds derives from the flag-sighting programs, particularly when individually identifiable engraved leg-flags (ELFs) are used.

Listed below are the very small number of recoveries reported during the last year. Most of these relate to Pied Oystercatchers and in many cases these relate to birds carrying individually identifiable leg-flags. In these cases the data would have been equally appropriately listed in the 'Flag-sightings Report'.

Pied Oystercatcher

101-41689	Adult	2.8.15	Barry Beach	21.11.15	Karlbeethong, NSW	Seen (ELF)	320 km ENE
101-32513	2nd Year	2.9.12	Stockyard Point	21.9.13	Stockyard Point	Retrapped	-
				27.11.15	Manuka, King Island, TAS	Retrapped	222 km SW
101-04626	Adult	29.12.95	Queenscliff	10.2.01	Queenscliff	Seen	-
(Elapsed time: 20 years)				9.12.15	Mud Islands	Dead	8 km E
101-34331	1st Year	23.6.14	Corner Inlet	3.1.16	Eden, NSW	Seen (ELF)	325 km NE
101-32473	Adult	6.7.12	Barry Beach	1.11.13	Brandy Creek, NSW	Seen (ELF)	355 km NE
				19.7.15	Merimbula, NSW	Seen (ELF)	370 km NE
				3.1.16	Eden, NSW	Seen (ELF)	359 km NE
101-03700	Adult	13.8.94	Barry Beach	17.1.16	Flinders Island, TAS	Dead	185 km SE
(Elapsed time: 21 years, 5 months)							
101-34288	2nd Year	30.7.14	Barry Beach	21.1.16	Scamander Barway, TAS	Seen (ELF)	345 km SSE
101-34395	3rd Year	12.8.14	Roussac's, Foster	27.2.16	Anna Bay, NSW	Seen (ELF)	844 km NE
				9.3.16	Anna Bay, NSW	Seen (ELF)	844 km NE
101-15410	2nd Year	24.6.98	Roussac's, Foster	28.6.16	Tathra, NSW	Seen	402 km NE

Only birds which have made an interstate movement, or where the elapsed time between banding and recovery was more than twenty years, are listed.

Only one movement greater than 402 km was recorded during the year. This is a bird which moved to the northern NSW coast (844 km NE) from Roussac's Farm, Corner Inlet.

The greatest elapsed time between banding and recovery was 21 years and 5 months. This bird was banded at Barry Beach as an adult in August 1994 and found dead at Flinders Island in January 2016. Although this was an old bird we have records of a 29 year-old Pied Oystercatcher alive and nesting annually, at Inverloch.

Subsequent to this table and summary being prepared, Joris Driessen/David Trudgen further accessed the main flag-sightings database and prepared the following text:

A total of 156 sightings of Pied Oystercatcher were received, 91 from Victoria, 21 from SA, 28 from NSW and 16 from Tasmania. Of these, interstate movements of VIC-flagged birds totalled 44, with 28 reported from NSW, three from SA and 13 from Tasmania. No interstate movements were recorded for SA or TAS-flagged birds.

As in previous years sightings from NSW came predominantly from the southern half of the state, south of Sydney. However, Yellow D3 and Yellow VW were recorded in Red Rock and (near) Newcastle respectively. The former is nearly 1,100 km away from its banding location at Roussacs Beach, Corner Inlet, in 2003.

Two VIC-flagged birds were recorded in the Coorong in October (twice) and December 2015 respectively. This is the first time in three years we have received evidence of westward movements into South Australia.

Sightings of VIC-flagged birds in Tasmania came predominantly from King Island (11), with the remainder seen on the mainland. Of interest is Yellow KJ, banded in Corner Inlet in 2012, seen in Southport, Tasmania, in December 2015, 500 km from its banding location.

Sooty Oystercatcher

101-07081	Adult	1.8.04	Roussac's Farm, Corner Inlet	24.9.15	Rye Back Beach	Seen	123 km W
				31.1.16	Rye Back Beach	Seen	123 km W

Again, subsequent to this table being prepared, Joris Driessen/David Trudgen further accessed the main flag-sightings database and prepared the following text:

A total of 18 sightings of Sooty Oystercatcher were received, 14 from VIC, two from SA and two from TAS. Of these only three were interstate movements: an SA-flagged bird (Black J5) was seen at Killarney Beach, far west VIC on 01.11.2015, VIC-flagged birds (Yellow 4L and 5P) were seen on Flinders Island and King Island respectively. Three birds were seen twice during 2015/2016.

The oldest recorded Sooty Oystercatcher (Yellow B4) was 18 years old, first caught in 2000 at West Head, Flinders, where it was seen again in March and April 2016. Other 'oldies' include a 16 year old (Yellow 4D) and two 15+ years old (Yellow B4 and X3). Age class ranged from 4 to 7+ for the remainder of sightings.

Ruddy Turnstone

052-60811	1st Year	15.11.11	Yanerbie, Streaky Bay, SA	1.12.15	Dripping Wells, King Island, TAS	Retrapped	1169 km SE
JAPAN 5A54180	Juv.	27.8.13	Hokkaido, Japan	11.11.15	Carpenter Rocks, SA	Retrapped	9041 km S

It is pleasing to record that one of the relatively small number of Ruddy Turnstone we banded at Yanerbie, near Streaky Bay in South Australia, in recent years has now moved to King Island.

A Japanese banded Turnstone was caught during our routine cannon netting operations at Carpenter Rocks in South Australia.

Bar-tailed Godwit

073-59213	2nd Year	23.6.09	Corner Inlet	17.10.09	Bribie Island, QLD	Seen	1420 km NNE
			5.4.10	Coromandel, South Auckland, NZ	Seen	2532 km E	
			19.3.15	Corner Inlet	Seen	-	

It is interesting that this bird, banded in its second year during winter in Corner Inlet, has been subsequently seen in Queensland and then in New Zealand before being seen back again in Corner Inlet. It is probably the first bird which has ever been reported back in Victoria after having once crossed to New Zealand.

Sanderling

042-53159	Adult	4.3.07	Brown Bay, SA	14.3.09	Brown Bay, SA	Retrapped	123 km W
				29.4.16	China - Hong Kong	Seen (Band number read!)	7288 km NNW

A nice record of one of our South Australian Sanderling seen on migration at Mai Po Marshes on northward migration.

Sightings of Migratory Waders Leg-flagged in Victoria, South Australia and King Island, Tasmania in 2015/2016

Joris Driessen, Roger Standen, Clive Minton, Roz Jessop, Maureen Christie and Margaret Bennett.

Introduction

This year's report contains a comprehensive set of flag sightings from all known sources. Flag sightings come in from a range of regular reporters, plus individuals who incidentally record flagged birds. A huge thank you goes out to all those who continue to send in sighting reports.

The tables present all reported sightings of birds flagged in VIC, SA and TAS including plain flags and engraved leg flags (ELFs) that were seen between July 1, 2015 and June 30, 2016, with the exception of sightings at or close to banding sites. Banded Stilt observations are not included.

Because sightings are received until well after the preparation of the annual report, the tables should not be interpreted as a definitive set of sightings for the season. Given past experience with annual resighting rates it is considered that the vast majority of data has been received for 2015/2016. Note that many of the sightings are of the same birds many times over, particularly in areas where dedicated wader watchers are active.

A total of 2,043 sightings were processed for this report, of which 1,931 involved birds seen away from their banding location, a slight increase on the 1,856 observations in 2014/2015.

Victoria

A total 1,816 VIC-flagged sightings were reported, of which 1,717 observations involved birds away from the main banding sites (Western Port, Corner Inlet and Werribee S.F.). In comparison, 1,704 sightings were reported in 2014/2015. As in previous years, Bar-tailed Godwit, Curlew Sandpiper and Red Knot make up the bulk of the observations (Table 1). This is largely as a result of titanic efforts in mainland China (Bohai Bay Team), New Zealand (Adrian Riegen, Tony Habraken *et al.*) and the Republic of Korea (Andreas Kim). About 20% of sightings of VIC-flagged birds originate from within Australia (340 observations). A breakdown of the latter by state is presented in Table 2.

Cannon loading at Yallock Creek.

The team at Yallock Creek.

Table 1. Sightings of Victorian flagged waders seen away from the banding site, overseas and across Australia

Species	**Australia**	**China - mainland**	**China - Hong Kong**	**Indonesia**	**Japan**	**Mongolia**	**New Caledonia**	**New Zealand**	**Papua New Guinea**	**Democratic People Republic of Korea**	**Republic of Korea**	**Russian Federation**	**Republic of China (Taiwan)**	**Total overseas**	**Total sightings**
Bar-tailed Godwit	121	46			14		1	206	1	7	229			504	625
Curlew Sandpiper	91	37	17	1		2							3	60	151
Eastern Curlew	4													0	4
Great Knot	9	1						1			1			3	12
Little Stint			1											1	1
Red Knot	52	427						322					2	751	803
Red-necked Avocet	20													0	20
Red-necked Stint	25	26	2									2	7	37	62
Ruddy Turnstone	10	1			1			6					3	11	21
Sanderling	2	6		2										8	10
Sharp-tailed Sandpiper	6												2	2	8
Total	**340**	**544**	**20**	**3**	**15**	**2**	**1**	**535**	**1**	**7**	**230**	**2**	**17**	**1377**	**1717**

Note the huge number of Bar-tailed Godwit sightings in New Zealand (206) and on the Republic of Korean side of the Yellow Sea (229). By contrast, in Red Knot sightings were mainly split between New Zealand (322) and the Chinese side of the Yellow Sea (427). Also, there were pleasing numbers of sightings of Curlew Sandpipe in China (37). Twenty Red-necked Avocets – all of course still in Australia – was a valuable total too. A notable omission compared with previous years is the lack of reports of Sanderling in the Russian Federation. Most make a stop-over on one or both migrations in the area of Sakhalin Island, on the east coast of Siberia. This suggests that there must have been no personnel out searching for flags in this area during the last year.

Table 2. Sightings of Victorian flagged waders seen away from the banding site within Australia

Species	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**	**Total Australia**
Bar-tailed Godwit	49		64				8	121
Curlew Sandpiper	1		5			19	66	91
Eastern Curlew	2					2		4
Great Knot			7				2	9
Red Knot	12		20	1		1	18	52
Red-necked Avocet	14		1			5		20
Red-necked Stint	3		2	2	3	1	14	25
Ruddy Turnstone		1		3		4	2	10
Sanderling						1	1	2
Sharp-tailed Sandpiper	4		2					6
Total	**85**	**1**	**101**	**6**	**3**	**33**	**111**	**340**

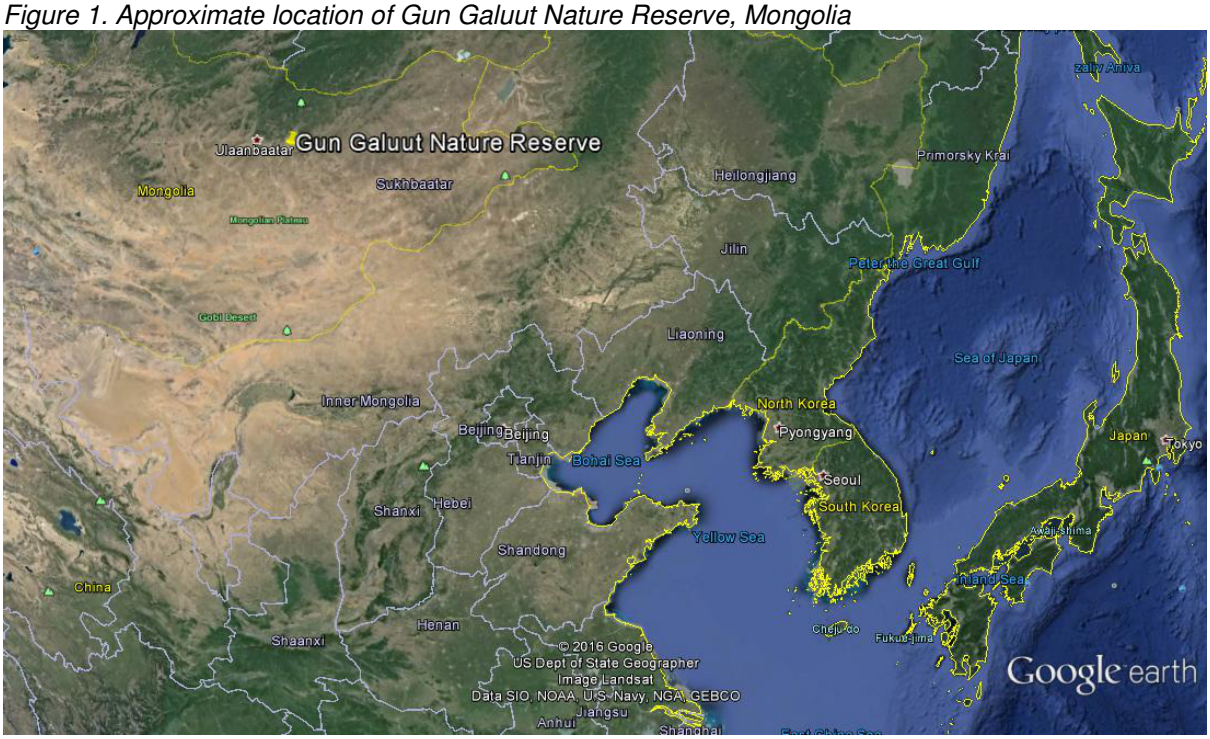
The large number of Bar-tailed Godwit sightings in Queensland (64) and New South Wales (49) are almost all on southward migration indicating that this is the main route they use on their journey back to Victoria. A similar pattern is also apparent in Red Knot (20, 12), but in this species there is also a significant number (18) of sightings in northern WA. Red-necked Stint are also more frequently seen in WA than at east coast locations.

The past season resulted in a number of highlights for VIC-flagged birds. The main highlights are summarised below.

A VIC-flagged Red-necked Stint was recorded near Tiksi in the Russian Arctic by Alexander Hellquist in July 2015 and 2016, 12,500 km away from its banding location. Normally, few observations from such northerly latitudes reach us, making the few which we do receive particularly valuable.

A Curlew Sandpiper was seen with an orange flag at a small lake in Gun Galuut Nature Reserve (16.7.15) in north-east Mongolia (Figure 1) by Purevsuren Tsolmonjav. The site lies at an altitude of 1316m. It is not unusual for the species to travel that far west, but we get very few records from there. The (presumably) same bird was seen again on 09.08.2015 by Gombobaatar Sundev.

Figure 1. Approximate location of Gun Galuut Nature Reserve, Mongolia



The Democratic People's Republic of Korea Team recorded seven VIC-flagged Bar-tailed Godwit, including 'K8', flagged at Mann's Beach on 23.06.2009 (aged 1), which has only been recorded on one other occasion, in May 2011 in Japan.

A VIC-flagged Little Stint was seen at Mai Po, China - Hong Kong on 02.05.2016 by Jon and Jenny Holmes. This is the first time a flagged Little Stint from Victoria has been seen anywhere else. Only nine known Little Stints have been flagged in Victoria since 1978.

Bar-tailed Godwit '0T' flagged age 3+ at Mann's Beach, Corner Inlet in February 2010 had only one sighting to its name, the first of which occurred in Japan within two months of it being flagged. Five and a half years later Thomas Gouëllo made one of this season's most spectacular observations: '0T' foraging on New Caledonia (!) on 09.10.2015.

Two VIC-flagged Sanderlings and a Curlew Sandpiper were seen in Indonesia at Cilacap Jawa Tengah (21.10.2015, 18.01.2016) and Limboto Lake, Gorontalo (13.08.2015) respectively.

Paul Barker saw Bar-tailed Godwit 'C3' on Logea Island, Papua New Guinea on 23 October 2015, quite a late date for a Godwit to still reside that far north. Originally flagged off Mann's Beach on 23.06.2009 (aged 1), the bird has been seen numerous times at Yalu Jiang NNR in mainland China, as well as on

Phillip Island and in Republic of Korea. Few observations originate from PNG, making this observation quite valuable.

Liz Crawford and Chris Hunter reported on a Bar-tailed Godwit seen in the Hunter Estuary, NSW, carrying orange 'SS'. The leg flag looked yellow. This is a good example of the challenges facing the field spotters in working out where some of the birds were flagged. Godwit 'SS' was flagged at Barwon Heads VIC on 18.1.11 as an adult. It was subsequently seen at the Hunter in October 2011, April 2012, and in September 2012, 2013 and 2015. This suggests that it regularly uses the Hunter Estuary for migration or it has relocated there, although regular summer inspections have not noted it (Photo by Chris Hunter and Liz Crawford).

Bar-tailed Godwit Orange 'CEY' banded off Mann's Beach on 11.12.14, regularly stops over at Sone Shinden, Kokura-Minami-Ku in Japan. It has been seen there in April 2014, 2015 and 2016. Another bird seen there regularly (since 2012 when first flagged) is godwit Orange 'AJU' that was seen for the fourth time in April 2016. Interestingly, most these sightings of returning birds have been single observations except for one multiple three days apart. Whether this means that they do not stay at Sone Shinden for very long or it is just a coincidence that they have only been reported once is not known.

A very unusual report, also from Sone Shinden, was of Bar-tailed Godwit Orange 'CNB'. The difference from nearly all our other reports was that this bird was seen on southward migration in September 2015, but then again on its northward journey in April 2016. It is interesting to see how some of these sites are used on both journeys. Because return migration is much more spread out in time than the more concentrated northward migration, search effort tends to be lower during this time of year, making observations such as 'CNB' of particular value.

Regular Bar-tailed Godwit visitors to the Republic of Korea that are reported by Andreas Kim were there again this year. The now famous Orange 'T0' has now been there every year since it first migrated in 2011. Andreas is building a great body of work with his sightings of these birds that repeatedly use the Aphae Island and Mokpo areas on northward migration. Again he shows that birds use the site for refuelling and not just a quick stopover. This is illustrated by 'CKX' (see photo by Andreas Kim) that was seen by Andreas from April 3-24 this year, spending a minimum three weeks at the site.

A Ruddy Turnstone flagged aged 1 at Flinders in November 2014 was seen sneaking around the coast on migration at Ceduna in SA on 09.04.16. Flagged 'WAH', it may have moved as a young bird to a new summer location close to there or it may have been making its way on migration from Victoria. Hopefully it will be seen next summer to show us where it spends its non-breeding season. A similar tale is told by Ruddy Turnstone 'YSJ' - also aged 1 when flagged at Port Fairy on

20.10.13 and seen in May 2016 by Andrew Brooks at Ceduna. Andrew's sightings are a good illustration of the amount of valuable information that can be generated when a interested person starts looking in a sparsely populated areas from which we usually receive very few records.

John Allcock reported at least five individually identified Curlew Sandpiper flagged in Victoria and seen at Mai Po (China – Hong Kong) in April 2016. He also reported seeing unreadable flags these may or may not have been different from the five he read as well as plain flagged birds. This highlights the value of engraved flagging for obtaining much more detailed information from the sightings reported across the flyway.

Bar-tailed Godwit Orange 'CHV' was banded aged 1 at Mann's Beach on 11.02.2014 and was seen at Gladstone on 01.10.2015, possibly on return from its first migration, or on a partial migration. However, it had returned to Corner Inlet by March 2016. Presumably this is one of the Corner Inlet birds that stays there rather than moving across to NZ for the non-breeding season.

An example of how flocks travel together is provided by two Bar-tailed Godwit that were caught as adults on 01.02.2011 at Corner Inlet ('PL' and TL'). They have since been seen at Arao Beach in Japan - 'TL' on 03.05.2011 and 'PL' for at least a month in April/May 2015. Thus, both birds were known to use the same route on migration. However, on 26.04.2016 they were seen together there on the same beach! As time goes on recording of more and more of these little anecdotes show how spatially particular migration routes can be for some shorebirds.

South Australia

A total of 178 SA-flagged sightings were reported, of which 167 observations (Table 3) involved birds away from the main banding sites (Thompson Beach, Yanerbie Beach), this substantial increase on the 110 observations reported in 2014/2015 was largely due to an increase in Sanderling sightings (Bohai Bay as well as within Australia) and Ruddy Turnstone sightings (within Australia).

Table 3. Sightings of SA-flagged waders seen away from the banding site overseas and across Australia (countries are referred to by their colloquial names for layout convenience)

Species	Australia	China (mainland)	China (Hong Kong)	Indonesia	Japan	New Zealand	Republic of Korea	Russia	Taiwan	Total overseas	Total sightings
Bar-tailed Godwit		1				6				7	7
Curlew Sandpiper	3	1								1	4
Great Knot		1								1	1
Red Knot	1	3				3				6	7
Red-necked Avocet	2									0	2
Red-necked Stint	10	1							1	2	12
Ruddy Turnstone	26	3			2				5	10	36
Sanderling	22	45	2	1	14		3	8	3	76	98
Total	**64**	**55**	**2**	**1**	**16**	**9**	**3**	**8**	**9**	**103**	**167**

Note the good number of sightings in China (45) and Japan (14).

Two SA-flagged Sanderlings were seen in north Sakhalin at Piltun Gulf on 13.08.15 by Vladimir Zykov. Orange 'N1'/Yellow) was flagged at Canunda NP in 2011 and the Orange 'ACR'/Yellow was flagged at Port MacDonnell in 2015. These were followed by two more birds on 19.08.15 at Chaivo Bay, Sakhalin. Orange 'E5'/yellow was flagged in 2011 at Canunda NP while Orange '32'/Yellow was flagged at Yanerbie in 2012. An additional factor about these sightings is that 'E5' and 'N1' were banded on the same day (10.11.11) and then seen 50km apart within five days of each other on northern migration.

A Sanderling photographed in Japan by TOMISAWA Naohiro was able to be identified due to the number of shots of the band that could be blown up and connect to gain the full band number. It was band #04253121, first banded at Brown Bay on 4.3.2007 and caught again in 2010. The photographs provided showed significant wear on the lower flag.

Another pair of Sanderling that were caught in the same net catch at Canunda NP on 1.12.12 (both as adults) were seen together in Rudong County, China. 'CP' and 'DJ' were together on 5.9.15 as they made their way south.

A very unusual record of a Sanderling flagged in SA was reported to us in October 2015. It was a sighting from 23.10.11 from inland China. The record was the subject of several email trails but it seemed to be a solid report. The provider, Prof Ma Ming from the Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences said they regularly had waders such as Sanderling, Ruddy Turnstone and sand plovers in the central north of China. It is unclear why a Sanderling would travel in that direction and be around in late October. Clearly this bird was an adult as it was carrying our flags so it was not a juvenile bird lost on it first migration. It was a very long way from anywhere that might be expected for a coastal hugging species like Sanderling.

Tasmania

A total 49 TAS-flagged sightings were reported, of which 47 observations involved birds away from the main banding site (King Island). This represents a slight increase on the 42 observations reported on in 2014/2015.

Table 4. Sightings of King Island (TAS) flagged waders seen away from the banding site overseas and across Australia

Species	**Australia**	**China (mainland)**	**China (Hong Kong)**	**Japan**	**New Zealand**	**Taiwan**	**Total overseas**	**Total sightings**
Pacific Golden Plover						2	2	2
Red-necked Stint	2		1				1	3
Ruddy Turnstone	24	3		1	1	13	15	44
Total	**26**	**3**	**1**	**1**	**1**	**15**	**18**	**47**

Note that, as usual, Taiwan features very strongly in the overseas flag-sightings of Ruddy Turnstones.

A Pacific Golden Plover flagged on King Island, TAS Orange / Blue was seen on two consecutive days by Wu-Cheng Wen at Dapeng Bay, China. A rather fortunate observation, as only two plovers have ever been flagged during nine years of catching expeditions on the island.

A King Island flagged Red-necked Stint was seen by Kevin Lok at Mai Po, Hong Kong on 28.04.2016.

A Ruddy Turnstone carrying a geolocator put on at King Island, stayed in NSW rather than returning to King Island where we may have retrieved the unit. It was Orange 'WMA'/Blue. It was first sighted at Newcastle on 23.10.2015 and then several times through to the last sighting reported on 17.02.2016. Retrapping this bird in the future might cast some light on its movements since then.

Half of all Ruddy Turnstone sightings are from the Nightcliff Rocks, Darwin (NT), with the remaining observations scattered across NSW, VIC, SA and WA.

.

Sightings of Migratory Waders Leg-flagged elsewhere and then seen in Victoria, South Australia or Tasmania in 2015/2016

Joris Driessen, Roger Standen, Roz Jessop, Maureen Christie and Clive Minton

A total of 84 birds banded overseas or interstate were recorded across VIC (43), SA (30) and TAS (11), up from 40 sightings reported in 2014/2015 (VWSG Bulletin 38). This increase is largely a result of the introduction of dedicated flag searches in Corner Inlet, which were trialled on several occasions in 2015/2016. The aim is to make such surveys an annual occurrence in order to increase our knowledge on the presence of waders flagged overseas in VIC.

Ten of the VIC sightings were of interstate birds, 33 were seen away from the flagging area but within the state and 12 were flagged overseas.

Table 1. Sightings of overseas-flagged, interstate and VIC-flagged (away from banding site) waders in Victoria

Species	China (mainland)	China (Hong Kong)	New Zealand	Russia	Total overseas	Australia				Total AU	Total
						SA	TAS	WA	VIC		
Curlew Sandpiper	2	1			3				19	19	22
Eastern Curlew					0				2	2	2
Greenshank	1				1					0	1
Red Knot	1		4	1	6			3	1	4	10
Red-necked Avocet					0				5	5	5
Red-necked Stint					0	1	1		1	3	3
Ruddy Turnstone			1		1	1	3		4	4	5
Sanderling					0	1			1	2	2
Sharp-tailed Sandpiper	1				1					0	1
Total	**5**	**1**	**5**	**1**	**12**	**3**	**4**	**3**	**33**	**43**	**55**

All five sightings of China-flagged birds were from Chongming Dao National Nature Reserve, with the single Hong Kong-flagged Curlew Sandpiper from Mai Po. Several sightings of birds with New Zealand flags are made every year. The numbers remain small and possibly this is as a result of low search effort in important areas such as Corner Inlet. A single colour-banded Red Knot from an unknown origin was seen in February 2016.

A very interesting observation of a Russian-flagged Red Knot 'CKR' was made during dedicated flag searches in Corner Inlet on 18.10.2015. First banded in Meinypilgyno, Chukotka on 01.07.2011 it was equipped with a geo-locator. On its first southward migration from Russia, according to the geolocator, it flew directly from the Gulf of Carpentaria to New Zealand, whereas in 2015 it moved right down through Victoria before going to its non-breeding territory in New Zealand. Pavel Tomkovich has rightly asked; Why this change in strategy?

Furthermore, 'CKR' has an extensive resighting history, emphasising the wide-reaching activity of banders and observers across the flyway: Pavel Tomkovich reported the bird attending broods in 2011-2013 and 2015. On migration it has been seen in Bohai Bay, China in April 2012, April/May 2013 and May 2014. Adrian Riegen noted that it was seen in New Zealand in the summer of 2011/12, 2012/13 and 2014/15.

South Australia

Eleven of the SA sightings were of interstate flagged-birds, 14 were seen away from the flagging area but within the state and five were flagged overseas.

Table 2. Sightings of overseas-flagged, interstate and SA-flagged (away from banding site) waders in South Australia

Species	China (mainland)	Russia	Thailand	Total overseas	Australia				Total AU	Total
					SA	TAS	VIC	WA		
Great Knot				0				1	1	1
Red Knot			1	1	4		1		5	6
Red-necked Stint		2		2	1	1	2		4	6
Ruddy Turnstone				0	9	3	3		15	15
Sharp-tailed Sandpiper	2			2					0	2
Total	**2**	**2**	**1**	**5**	**14**	**4**	**6**	**1**	**11**	**30**

Ceduna was an odd spot to see a Sharp-tailed Sandpiper flagged in Chongming Dao but Andrew Brooks saw Black/White 'KY' there in late October 2015. It was banded as an adult on 12.8.15 on its southward migration. Was it still moving around to where it wanted to stay for the summer or did it make its base there? Another Chongming Dao-flagged Sharp-tailed Sandpiper was seen in the Coorong by David Dadd on 13.03.2016.

Andrew also saw a Great Knot Yellow 'WWY' at Ceduna on that day. This bird was flagged aged 1 on 08.03.12 at Roebuck Bay and was seen there during the first year of its life. Since then it has been seen twice - both in September 2014, back at Roebuck Bay, so it is unusual that it would travel to southern Australia in 2015.

In December 2015 and again in March 2016, Neville Hudson recorded a Red Knot with Black/Yellow flags indicating birds flagged on the Kamchatka Peninsula in Russia at Snapper Point,

At Peter Point, Ceduna, a Red Knot with Thailand flags Black/Green was seen by Andrew Brooks on 25.10.2015. As far as we know this is the first sighting of a Thailand bird for SA.

Tasmania

All ten sightings in Tasmania were of interstate flagged-birds, seven from SA and three from VIC.

Table 7. Sightings of overseas-flagged, interstate and TAS-flagged (away from banding site) waders on King Island (Tasmania)

Species	SA	VIC	Total
Red-necked Stint	2	3	5
Ruddy Turnstone	3		3
Sanderling	2		2
Total	**7**	**3**	**10**

Red-necked Avocet and Australian Pelicans at Thompsons Beach SA (Photo Roz Jessop)

Tern Breeding and Banding Report 2014/15

(Accidentally omitted from last year's VWSG Bulletin)

Clive Minton, Roz Jessop, Susan Taylor, Dave Cropley and Robyn Atkinson

Caspian Tern

Location	Breeding pairs	Chicks banded
Mud Islands (Port Phillip Bay)	25	17
Corner Inlet	60	13
Totals	**85**	**30**

Caspian Tern breeding colonies in the late 2014/early 2015 nesting season were slightly larger than in the previous year (85 pairs vs. 75 pairs) and rather more chicks were banded and given engraved leg flags (30 vs. 20).

All the birds at Mud Islands again nested on an offshore sandbank. This has built up further over the past year and provided a surprisingly safe nesting location. The absence of wind-blown storm tides in the critical period also favoured breeding success.

The overall breeding success on West Clonmel Island in Corner Inlet was again poor. The Caspian Terns avoided nesting on the higher, but safer, vegetation-topped dunes and instead selected low sandy hillocks. The area is notoriously susceptible to wind-blown sand and storm tides and as usual one or two severe events happened during the main nesting period in December/January. Although some early failures resulted in replacement clutches the overall breeding success (chicks reared to fledging) was very low.

Crested Tern

Location	Breeding pairs	Chicks banded	Banded adults
Mud Islands (Port Phillip Bay)	1800	1057	234
The Nobbies (Phillip Island)	4000	1750	-
Corner Inlet	600	294	31
Totals	**6400**	**3101**	**265**

The number of pairs of Crested Terns at our three study colonies increased from 5700 in 2013/14 to 6400. The Mud Islands colony doubled, to 1800 pairs, and was at the highest level for many years. It was located at the usual site on the southern shore of the island with no birds this year attempting to nest elsewhere on that shore or at Fort Island. The Nobbies population returned to a more normal level 4000 pairs compared with 2500 the previous year. There was a corresponding major reduction in the Corner Inlet breeding population, to a more normal 600 pairs after the sudden boost to over 2000 pairs in the previous two years.

Breeding success was generally better than that in 2013/14. A total of 3,101 chicks were banded. 1,570 of these were banded in one afternoon at The Nobbies, Phillip Island. At last, the Mud Islands colony had a reasonable breeding outcome with probably more than 50% of the eggs laid being converted to fledged young. In contrast survival of chicks was again low at The Nobbies, only this year it was the early hatching chicks which survived and the later hatching birds which experienced a shortage of food supply and suffered a much higher level of predation by Silver Gulls because of the unusually late nesting season of the Silver Gulls in 2014. In Corner Inlet it was mainly storm tides which limited breeding success.

Recaptures of breeding banded adult Crested Terns again provided useful information on survival rates and longevity, as well as on site-faithfulness. Of the 234 adults recaptured at Mud Islands 2 were 26 years old and another was 25 years old.

Fairy Tern

Fairy Terns nested on Mud Islands in quite good numbers in early 2014, with nests with eggs being recorded in January on a newly formed sand island off the south-west shore. This is the same island used by the Caspian Terns in the last two seasons. The Fairy Tern colony in 2014/15 was again located close to the Caspian Tern colony on the same sand island. 35 nests with eggs were recorded on 17 December. This had reduced to 15-20 pairs present when a visit was made on 6 January 2015. 4 chicks were banded.

No Fairy Terns were recorded nesting at Corner Inlet in 2014/15. An area regularly used by them in past years on the east end of Dream Island has been obliterated by storm tides during the winter. A few pairs may have tried to breed at other locations but they could not have been successful as no nesting birds were present during a further comprehensive search in late January.

Gull-billed Tern
The regular numbers seen at wader roosting sites in Western Port and Corner Inlet during the last three years seem to have disappeared. They have probably returned to inland locations, with breeding being recorded at Lake Callabonna in South Australia.

Whiskered Tern
The late December visit to the Western Treatment Plant of Melbourne Water at Werribee again resulted in a good catch of adult Whiskered Terns (189 in total). Most were in partial or full breeding plumage and are therefore likely to be part of the Victorian breeding population. Five birds banded in previous years were recaptured, indicating some site-faithfulness but also showing just how large the Whiskered Tern population must be.

Crested Tern banding at the Nobbies, Phillip Island (Photo G. Burgan, PINP)

From the Adelaide Advertiser

ADVERTISER.COM.AU FRIDAY JUNE 24 2016 NEWS 29

'Bumper crop' of plover chicks

Revival of beach birds takes flight

PROTECTED: Hooded plovers move across Fleurieu Peninsula beaches.

JADE GAILBERGER
ENVIRONMENT REPORTER

THE survival rate of the hooded plover bird on the Fleurieu Peninsula is at a 10-year high.

The number of hooded plover chicks surviving until adulthood has more than doubled since monitoring began a decade ago.

The coastal shorebird, known for its distinctive black hood and throat, is listed as vulnerable with fewer than 800 in South Australia and barely 7000 nationwide.

But during the 2015-16 breeding season, 19 chicks fledged, compared to barely eight or nine recorded in previous years.

At least 70 per cent of nests produced eggs that hatched, which was again twofold - a result of increased volunteer efforts to protect the bird, new beach signs, banners stating "chicks on beach, dogs on a leash", and greater community involvement across the Fleurieu Peninsula.

Councils and Natural Resource Management staff also erected temporary fencing at most remote nesting sites during the breeding season, adding extra protection from people, cars and animals.

Environment Minister Ian Hunter said the "bumper crop" of hoodies was the greatest breeding success recorded since monitoring began in 2006 because of the collaborative work and chick wardening by volunteers.

"As only 20 pairs are known to breed on the Fleurieu, it's important for the whole community to help protect them," he said.

"Over the next few months, the birds will form small flocks and move from beach to beach to feed, before establishing new nests from autumn onwards.

"We look forward to an even better season next year."

Tern Breeding and Banding Report 2015/16

Clive Minton, Roz Jessop, Susan Taylor, Robyn Atkinson and Rob Patrick

Caspian Tern

Location	Breeding pairs	Chicks banded
Mud Islands (Port Phillip Bay)	32	15
Corner Inlet	65	25
Totals	**97**	**40**

The Caspian Tern colonies at Mud Islands and Corner Inlet had slightly higher numbers of breeding pairs and produced rather more chicks than in the 2014/15 breeding season. Most chicks which fledged at Mud Islands were banded (15). A larger number (25) were banded at Corner Inlet. However a return visit to this colony was not possible later in the breeding season so quite a few additional chicks probably fledged without being marked.

Crested Tern

Location	Breeding pairs	Chicks banded	Retrapped banded adults
Mud Islands (Port Philip Bay)	1600	1333	107
The Nobbies (Phillip Island)	4600	2994	285
Corner Inlet	200	10	3
Totals	**6400**	**4337**	**395**

The number of pairs of Crested Tern breeding at the three main Victorian colonies was the same as in the previous year. However the distribution changed slightly, with only 200 pairs this year in Corner Inlet, where breeding success was also very low.

It was a bonanza season for chicks at The Nobbies and Mud Islands colonies with food supplies apparently sufficient this year for a high proportion of the young hatched going on to successfully fledge. A record 2994 chicks were banded during a five hour visit to the colony at The Nobbies on 21 December (2015). On this date there were still 1000 unhatched eggs. It is probable that nearly 4000 chicks fledged altogether at The Nobbies, Phillip Island, from 4600 breeding pairs. This is an unusually high success rate, especially for a colonial breeding seabird.

A total of 395 already-banded breeding adult Crested Terns were recaptured at the nest. The oldest of these was 27 years – a chick from the Mud Islands colony now breeding at The Nobbies colony. This is the oldest recapture so far of a breeding adult Crested Tern in Victoria.

Fairy Tern

Fifteen pairs of Fairy Terns nested on the south west side of Mud Islands on the same sandbank which they used the previous season and which has also been used for the last three or four years by the Caspian Terns. It was not possible to make a follow-up visit in early January so breeding success was not measured.

Fairy Terns apparently again bred on Ram's Island, part of French Island, but details are not available.

By contrast, no Fairy Terns were found nesting anywhere in the Corner Inlet complex. The area most favoured in recent years, at the east end of Dream Island, has been much changed by winter storms and the geography is not now as suitable for safe nesting.

Tern Recovery Report 2015/16

Joris Driessen, Roger Standen, Clive Minton, Roz Jessop, Robyn Atkinson and Susan Taylor

Caspian Tern

091-59284	Chick	19.12.14	Corner Inlet	22.8.15	Bribe Island, Queensland	Seen (engraved flag)	1519 km NNE
091-58199	Chick	6.2.13	Corner Inlet	20.2.15	Lake Wollumboola, NSW	Seen (engraved flag)	542 km NE
				30.1.16	Lake Wollumboola, NSW	Seen (engraved flag)	1372 km NE

There was a total of 51 sightings of orange-flagged Caspian Terns seen interstate in 2015/16 all of these were banded as chicks on Mud Islands (flag on left leg) or in Corner Inlet (flag on right leg). Those on which the engraved flag code of numbers can be read in the field are technically recoveries rather than flag sightings. A summary is given in the Tern Flag Sighting Report but a sample (of two) is given above.

The first bird illustrates a typical winter movement into southeast Queensland.

The looks as if the second bird has settled to become a breeding bird in southern NSW, some 500 km from its natal area in Corner Inlet.

Crested Tern

From Mud Islands						
071-95368	Chick	17.12.88	18.11.03	The Nobbies	Breeding	42 km ESE
(27 years, 4 months)			10.4.16	Ballina, NSW	Seen	1330 km NE
			29.4.16	Cabarita, NSW	Died	1372 km NE
072-65629	Chick	17.12.95 (20 years, 3 months)	1.4.16	Fairhaven	Dead	64 km W
074-31757	Chick	17.12.14	31.1.16	Boondall, QLD	Dead	1441 km NE
072-27314	Chick	19.12.92	5.11.08	Mud Islands	Breeding	-
		(23 years, 2 months)	24.11.11	The Nobbies	Breeding	42 km SE
072-04437	Chick	16.12.89	12.3.16	Ballina, NSW	Seen	1330 km NE
(26 years, 4 months)			10.4.16	Ballina, NSW	Seen	1330 km NE
			14.5.16	Ballina, NSW	Seen	1330 km NE
From The Nobbies						
074-32368	Chick	22.12.14	13.10.15	Byron Bay, NSW	Dead	1349 km NE
From Corner Inlet						
071-83405	Chick	10.1.88 (28 years, 6 months)	24.7.16	Ballina, NSW	Seen	1260 km NE
From South Australia (Troubridge Island)						
073-38807	Chick	2.12.05	16.12.15	The Nobbies	Breeding	753 km SE

This list only contains details of birds which have moved interstate or birds which have survived for more than 20 years since they were banded. It also excludes most of the birds seen live by Steve McBride near Ballina in NSW. These are summarised in a separate article in this Bulletin.

The bird from Corner Inlet was 28 ½ years old when it was seen at Ballina in NSW in July 2016. This is the oldest Crested Tern so far banded by VWSG.

Note the recovery in Queensland. This is unusual, with Crested Terns rarely travelling further north in winter than the northern NSW coast.

Most Crested Terns eventually breed at or relatively close to their natal colony. The bird from South Australia found breeding at The Nobbies is therefore exceptional.

Little Tern

042-73973	Adult	18.3.15	Barry Beach	7.5.16	Imazu, Japan	Seen in breeding colony	8352 km N

This bird was in a flock of c. 100 birds in non-breeding plumage when it was banded. Japanese Little Terns regularly migrate to Australia for the Northern Hemisphere winter.

Fairy Tern

042-63640	Adult	12.1.13	Burrill Lake, NSW	10.4.16	Werribee S.F.	Seen (colour marked)	607 km SW

This is almost the longest movement ever recorded for a Fairy Tern. Birds breeding on the southern NSW coast quite often come southwards into eastern Victoria after the breeding season. This is a particularly long movement, but there was a similar one (also, like this one, seen by Danny Rogers!) about three years ago. Fairy Terns are a resident species and most remain within a relatively small area (100km?) all their life.

042-71958	Adult	31.10.14	Thompsons Beach, SA	19.11.15	Goolwa, SA	Found dead	112 km S

This adult moved from 50 km N of Adelaide, SA, to 60 km S. of Adelaide!

Whiskered Tern and Sharp-tailed Sandpipers at Werribee (Photo Digger Jackson)

Sightings in 2015/16 of Terns Leg-flagged in Victoria

Joris Driessen, Roger Standen, Clive Minton, Robyn Atkinson, Roz Jessop, Rob Patrick and Susan Taylor

This brief report summarises the sightings of orange flagged terns seen away from the banding area. Caspian Terns continue to dominate these sightings, partly because they move up the east coast where numerous observers are active and partly because of their large size that enables the flags to be seen more readily than on the smaller terns. While thousands of Crested Terns are banded every year, no flags are applied. Relatively few birds on the other species of tern are banded, but signtings come from these species.

A total of 70 tern sightings were received for the 2015/2016 season, eight of which were recorded near banding sites. Out of 51 Caspian Tern observations, 41 were of engraved leg flags read in the field, a very good resighting return of individually identifiable birds. Several individuals were recorded a number of times in their wintering areas.

Table 1. Sightings of VIC flagged terns in 2015/2016

Species	NSW	QLD	Indonesia	Japan	Total
Caspian Tern	26	25			51
Common Tern	1				1
Crested Tern	1				1
Little Tern	6			1	7
Whiskered Tern			2		2
Total	**34**	**25**	**2**	**1**	**62**

As in previous years, the majority of Caspian Tern observations were from Toorbul (Bribie Island) in QLD and the Hunter Estuary in NSW. A number of birds are building up an extensive resighting history, e.g. Orange '77' flagged on the Mud Islands in November 2012 has been recorded on 13 separate occasions since.

Another Caspian Tern, banded as a chick in the 2011/12 breeding season in Corner Inlet, has been recorded wintering at the same place (Bribie Island) in south east Queensland in each of the five subsequent Austral winters (i.e. 2013-16 inclusive).

A Crested Tern with a black band was seen by Steve McBride on Flat Rock Beach, north of Ballina (NSW). Although not individually identifiable, black bands were only used to band chicks on the Mud Islands in November-December 2001, making this bird 15 years old.

A VIC-flagged Whiskered Tern was recorded on two occassions (06.05 and 18.06.2016) at the Sidoarjo (fish ponds), East Java, Indonesia. These are hugely important observations, setting several new records: David Drynan at the ABBBS confirmed that these movements are the largest ever recorded by about 4,000km, are the only two sightings of this species outside of Australia and are one of a few species banded in Australia ever to be resighted in Indonesia.

A Little Tern flagged at Barry Beach on 18.03.2015 as an adult was identified from photos, allowing the band numbers to be read when on its breeding grounds at Imazu Yodoe-cho, Yonago city in Japan on 07.05.2016. A photo of the breeding site is shown thanks to Keisuke Kirihara. It appears to be a tiny spit of sand within a much built up area, rather different from sites where Little Terns try to breed in Victoria.

A Common Tern was seen carrying an orange flag at Airforce Beach, Salty Lagoon on the northern NSW coast in March 2016 by Steve McBride. It seemed that this bird must have been one of 34 that were flagged on 09.02.2010 at Corner Inlet.

Age-structure of Crested Tern wintering flocks

Clive Minton and Steve McBride

Most Crested Terns which breed, or are bred, at colonies on the Victorian Coast leave Victoria in late summer/autumn and spend the austral winter along the New South Wales coast, particularly the northern NSW coast. A sprinkling of recoveries is reported from there each year via the Australian Bird and Bat Banding Scheme in Canberra. Most are reports of dead birds and relate to birds in their first year or two of life. Starvation, because they are not very experienced at catching fish, and entanglement in fishing line etc., when they are still young and naïve, are the main causes of death.

During the winter of 2015, and even more so during the winter of 2016, a keen birdwatcher (Steve McBride) living in northern NSW has been recording the metal band numbers of Crested Terns he has observed in the Ballina area. With good binoculars, good eyesight and considerable patience it is possible to determine the numbers on the metal band carried by any Crested Terns (about 5% of the population).

This information enables a much more accurate estimation of the age-structure of the Crested Tern population than can be obtained from banding recoveries which, as mentioned earlier, are biased towards young, inexperienced birds.

The actual ages of the 79 birds seen so far are given in the attached Table. This also shows the origin of each bird in terms of the three main breeding colonies on the Victorian coast. The relative numbers relate to the different numbers of Crested Tern chicks banded over the years at each colony.

The Table shows that the first young birds reach the northern NSW 'wintering areas' in as little as two months after they have been banded as an unfledged chick. The numbers of birds at each age level in part reflects how many chicks were banded in a particular year. The Corner Inlet colony has, for instance, varied markedly in size and in breeding success from year to year.

It is interesting that 10 of the 79 birds were more than 20 years old, the oldest being 28 years and 6 months since it was banded. Given that The Nobbies breeding colony only came into existence in 1994, it is likely that the proportion of "old" birds will increase further in the future.

Hopefully Steve McBride will continue with these extensive, time-consuming sightings efforts to increase the total volume of data available. The VWSG values them greatly.

We are hoping to get experienced help to optimise the analysis and to calculate, in particular, annual and long-term survival rate information.

	Age when resighted (years)/Banding location		
Year of resighting	**Mud Islands**	**The Nobbies**	**Corner Inlet**
2015 (2-26.7.15)	4,10,21	7months, 7 months, 2, 4, 7, 7, 11, 11, 11, 14	20
Total	3	10	1
2016 (2.2.16 to 15.8.16)	2 months, 4 months, 1, 5, 6, 11, 11, 21, 22, 23, 23, 26, 26, 27	3 months, 3 months, 4 months, 5 months, 7 months, 7 months, 2, 2, 3, 3, 3, 5, 5, 5, 6, 7, 7, 7, 8, 8, 8, 8, 10, 11, 12, 12, 12, 12, 12, 12, 13, 13, 13, 15, 15, 15, 16, 19	3, 3, 3, 11, 13, 13, 13, 19, 19, 21, 28
Total	14	39	12

Shorebirds and Art: The Flyway Print Exchange three years on

Kate Gorringe-Smith (www.kategorringesmith.com.au)

In June 2013 I put out a call for artists to participate in an art project I had dreamt up. At that point my hope for The Flyway Print Exchange was that it would generate interest in the complexities of the flyway, unify culturally disparate artists and create a memorable body of work.

By the end of 2013 I had 20 artists involved from nine EAAF countries. Each had made their edition of 20 prints and posted them to me – a humbling experience as, despite not knowing me personally, all the artists agreed to make and donate their work to raise money and awareness for shorebirds! The prints are beautiful and diverse, and although the project actually introduced many of the artists to migratory shorebirds, they all created works of art that inspire viewers to consider closely the birds and ideas so lovingly and skilfully depicted.

In 2014 I posted one print by each artist along the Flyway and back to follow the birds' journeys. They flew from Melbourne to Auckland, then to Singapore, Alaska, and back to me – from Flyway artist to Flyway artist. These 'Travelled' prints represent the birds' journeys in a more tangible way than the images alone. The Travelled prints, sent without protection, became torn and worn, marked by addresses, postmarks, tape and stamps – the wear mirroring that borne by a migrating birds' plumage.

Without exception, in all of the projects' exhibitions, the travelled prints draw the most attention. The pristine prints make a lovely collection, but the travelled prints tell the story. Weighing about the same as a small shorebird, these artworks have done the distance and bear the scars, silently alluding to the hardships of migration.

The beauty of the story has made the project a great success. In Australia it has been exhibited fifteen times in three states. It has also been shown in Singapore, Indonesia and Hong Kong. By the end of the year the Northern Territory will be added to this list.

Print sales have raised over $17,000, the first $10,000 of which funded the 2015 BirdLife Australia Indigenous Research Grant. Last summer the project was exhibited at Melbourne's Immigration Museum alongside a related public art project, and 4,000 people contributed to the public art project, stamping circles of paper with shorebird images and answering questions such as 'Where is home for you?' – questions that the tale of shorebirds can open up in a poetic and also non-judgemental way.

In addition, for four of the Australian exhibitions, local artists were invited to create works inspired by shorebirds' journeys along the Flyway, which were then displayed alongside The Flyway Print Exchange. It made for an even richer exhibition, and was a lovely way to engage local communities with their local shorebird populations and habitat.

The project continues to travel, with its first New Zealand exhibition scheduled to coincide with the 10th Australasian Shorebird Conference in Miranda in October. It is also heading along the south coast of NSW this summer.

As the Flyway Print Exchange takes on a life of its own, I have two more shorebird-related projects underway. The first, 'From a Home to a Home: a Story of Migration,' is a one-off exhibition and will be at Brunswick Street Gallery from November 25 – December 8, 2016. Fifteen artists from seven Flyway countries will be looking at their own migrant and refugee experiences through the lens of shorebird migration. My starting point was the idea that shorebirds never settle in one home, so are driven to fly between their two homes – embodying the migrants' readiness to settle in a country as safe and plentiful as Australia while their hearts may still yearn for the home they have left behind, whether by choice or necessity. This exhibition will have a range of media, from printmaking and sculpture to traditional Chinese papercutting, artists' books, video, animation and installation. I hope this exhibition will engage a broad audience with the story of the Flyway. I am currently crowd-funding this project through the Australia Cultural Foundation (donations are tax deductable!!).

My second project, which is still in its draft stage, aims to join communities around Australia and New Zealand. If it comes to fruition, 'The Overwintering Project' will focus on our migratory shorebirds' overwintering sites, and will seek to engage communities around Australia and New Zealand with their local shorebird habitat and species. I am still ironing out the details, but I hope the project will create a profile of each site that pinpoints why the shorebirds go there specifically – which unique properties of that site make it perfect shorebird habitat. I'll then be encouraging local communities to hold art

exhibitions in which artists can produce work about whichever aspect of the area excites them, whether it is the birds, or the local geology, hydrology, flora etc.

Art is a wonderful way to engage individuals and communities with complex ideas. It makes stories tangible and allows people to respond in an emotional way, engaging them through their senses and imagination as well as rationally.

Please contact me if you'd like any more information about any of my projects, or if you have a shorebird site that would be suitable to explore through The Overwintering Project.

Kate Gorringe-Smith
0432322408
kategorringesmith@gmail.com
www.kategorringesmith.com.au

Conservation Report

Prue Wright

I have just taken over the conservation portfolio from Doris Graham, this will be a hard act to follow! I hope I can do it justice. I have had brief involvement with the Moolap Saltworks conservation plan, which is now closed. Birgita Hansen wrote a submission earlier in the year on the behalf of the VWSG. I would appreciate any information on local issues that VWSG involvement would be appropriate. Let's hope for a year when conservation takes its place in the hearts of our governments!

Beach-Cast Marine Algae Fishery in the South East of South Australia

Maureen Christie, Doug Watkins, Ken Gosbell, Jeff Campbell

Members have been kept informed of the long drawn out struggle to ensure that the beachwrack harvesting industry in the SE of SA is conducted in a manner that adequately protects both migratory waders (particularly turnstone and sanderling) and beach nesting residents. This is not intended as a blow by blow account, rather a brief note setting out what the conditions were on Australian Kelp Products P/L licence Y078 at the commencement of public consultation in March 2014, and what they are now.

Conditions at commencement

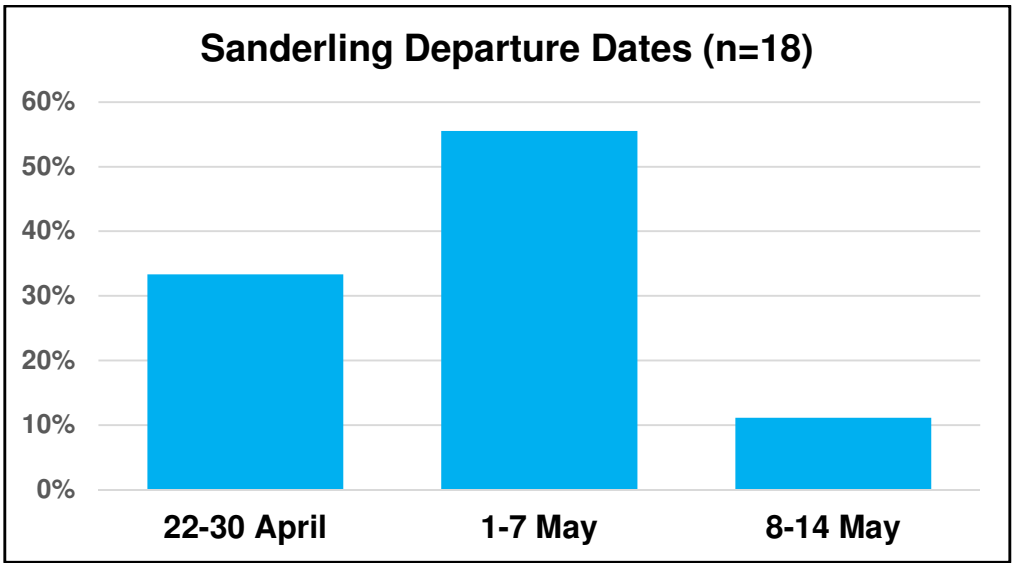
1. Permitted a take rate of 75% of the beachwrack along most of the licence area.
2. Heavy machinery permitted.
3. Two agents permitted.
4. No harvesting within 4 metres of the foredune.
5. Need to maintain a Threatened, Endangered and Protected Species (TEPS) log book and record interactions.

Current conditions

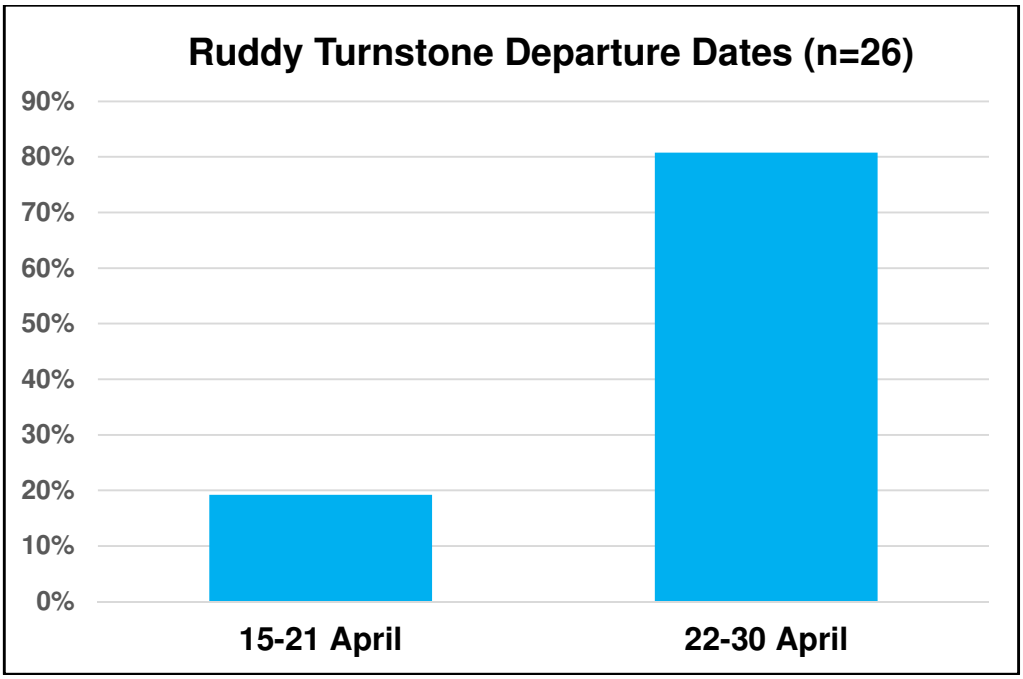
1. No heavy machinery throughout the fishery.
2. Two agents permitted. An agent is defined as a team consisting of 3 people and a 4 wheel drive utility with a trailer of GVM of 3.5 tonne. Harvesting is to be by hand, assisted by a mechanical winch if required
3. No harvest is permitted within 100 metres either side of any nesting areas where of Hooded Plover are currently nesting and/or caring for dependent young.
4. Creation of 'Managed Zones' in the Internationally Significant sites of Wrights Bay, and Stinky Bay/Nora Creina as well as that section of Rivoli Bay that is not closed completely. These zones will be managed for the period September 1 to May 15. Harvest is permitted on 8 days per month. PIRSA must be notified before the agent enters the beach. Every day that an agent harvests counts as a day towards the 8 day limit, regardless of the length of time spent or the number of agents in the field.
5. There is an 'understanding' that all best efforts are to be made to harvest only fresh beach-cast weed.
6. Need to maintain a TEPS log book.

FoSSE co-ordinated the campaign that lasted over two years and culminated in an appeal through the Administrative Appeals Tribunal of the Commonwealth Minister's Declaration of an Approved Wildlife Trade Operation. This has resulted in a new model for the fishery being developed. Without the long term data from VWSG banding, flagging and the geolocators we would have had no hope of achieving this. AWSG count data has also been critical. It was acknowledged by the Tribunal that FoSSE was the only party to bring scientific data to the table. Nothing quite compares to data sets of 20 years plus. Thank you to the many committed and dedicated volunteers who have made this possible.

Timing of departure of individual Sanderling from south-east South Australia based on light level geolocators, 2010-2014.



Timing of departure of individual Ruddy Turnstone from south-east South Australia based on light level geolocators, 2010-2014.



South Australian Team Report

August 2015 – July 2016
Maureen Christie and Jeff Campbell
Friends of Shorebirds SE Inc.

Yet again this has been an extremely busy year. Some highlights:

Premier's NRM and Landcare Awards
Winners of the Science and Innovation award and finalists in the Big Picture award.

Flyway Print Exchange and Birds Without Borders exhibition in the Riddock Gallery, Mount Gambier from 18 September to 25 October, and afterwards in Portland for the Bonney Upwelling Festival. This project was outlined in last year's report. A memorable moment at the Riddock opening was a meeting with Charlie Miller – a Second World War spitfire pilot who had flown over some of the same waters that our migrants do. He was in awe of them.

Ruddy Turnstone ATZ. Created a pull-up banner of ATZ's double migration and presented a copy to Newbery Park Primary School, who donated ATZ's geos.

Local team catches, geolocators and VWSG visits
This season we were presented with challenges at both the beginning and the end of the season. First, there were several King Island flagged waders amongst the first arrivals at Green Point in early September, including one with a geolocator. Although no King Island flags were present on the 12th, a catch of 15 turnstone and 54 RNS started our season. The final challenge of the season was the need to deploy 14 geo's in April. At Blackfellows Caves on April 20, we caught 7 turnstones. Disappointing that 2 were juveniles, but 5 geo's were deployed on retraps. At Nene Valley on April 23 we caught eight. Another 8 geo's deployed with the added bonus of 3 retrieved. So we fell short of our target by 1 geo which has been turned off and stored for next season.

With VWSG visits in November and March, the combined effort of all the teams resulted in 7 retrieved geos and 29 deployed. A DEWNR Volunteers Grant means that our contribution to the geolocator project now totals $30,090.

Predator Control - Threat Abatement Project
We have a support role in this long term Natural Resources South East project. They have carried out manual fox baiting over 25,000 ha from the Victorian Border to Robe since 2008. By initiating aerial baiting, the area covered has been increased to 64,000 ha and extending to the Murray Mouth. We continue with our work of protecting nests, monitoring, banding and flagging beach nesting species. This year is the first year that having several monitoring teams has really paid dividends. Vicki Natt at Kingston, Cath Bell at Robe, Wendy and David Trudgen at Beachport, Maureen Christie at Carpenter Rocks and the Campbell family in the Port MacDonnell area. Four of these teams include licensed banders. All teams have nest protection gear. Cath monitors the high profile Robe pair. Banding chicks has been producing interesting results (see separate article). Two members accompanied Ross Anderson to the Beach Nesting Birds Forum at Point Nepean.

We continue with our Dog's Breakfast program. Our volunteer vets, District Council By-laws Officers and the Coastal Team of DEWNR all continue to support this project, even though we still struggle to reach our target audience. This year a change of venue meant better numbers at Kingston. But lousy weather meant failure at Beachport. It seems we are destined never to have success at all four sites. We are seeking suggestions as to what we should do next year.

As a group we are still struggling with the problem of too few volunteers and too many miles of beach. We appreciate all of the help we receive from Barry Schriever, member of the Coastal DEWNR team who is responsible for fox baiting. Barry is responsible for over half of our entries to the 'My Hoodie Portal'!

Beach-Cast Marine Algae Fishery in the South East of South Australia
Outcomes are reviewed in a separate article. Last year's report discusses the issues.

Young Carers - Friendship Force. A group of about 12, 8–13 year olds who take on responsibilities in their home life far beyond their years have a 'time out' get-together once a week after school. Four afternoons in September/October were spent doing all things hoodie..... hoodie masks for Plover Appreciation Day, badges, cards to sell to earn money for Hoodies, corflute signs to warn 'hoodies on beach'. The program finished with a day on the beach. Then, in February, we were invited to a social gathering – where we were presented with the results of their fund raising - $170 'for hoodie protection'. Especially rewarding as this was all done on their own initiative.

Thompson Beach, Gulf St. Vincent. Once again we had three visits to this most challenging of catch sites. 14-20 November; 8-14 March and 4-9 April. Adelaide and Mount Lofty Ranges NRM, represented by Tony Flaherty, continues to enthusiastically (and financially) support our efforts. DEWNR SE assist by lending equipment. And a dedicated team continues to join in field work. See the separate article by Tony for details of the Grey Plover satellite transmitter project.

International Turnstone sightings
A turnstone flagged in Taiwan was seen at Port MacDonnell in September 2008. Then, 11 November, at Livingston Bay, we caught an unflagged turnstone banded as a juvenile in Hokkaido, Japan, on 27 August, 2013. We regularly have South Australian flagged turnstone seen elsewhere in the flyway, but these are the only records of internationally banded turnstone in the SSE.

General
All SA and King Island data is entered by David Trudgen. David is also responsible for maintaining the VWSG Oystercatcher Database. Flag making is organised by Jeff and Sarah Campbell. Newsletters continue to be issued from time to time. Jeff continues as both Shorebirds 2020 count coordinator and the Beach Nesting Birds Coordinator, as well as being our unofficial 'Conservation Officer'.

A very successful AGM and working bee was held at the Campbell family home in Mt Gambier.

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 Department of Environment, Water and Natural Resources South East who have provided encouragement and practical help. Ross Anderson deserves special mention for all of the support he gives us, both as our Community Liaison Ranger and as a member.

SOUTH AUSTRALIAN TEAM CATCHES 01.08.15 TO 31.07.2016

DATE	PLACE	Bar-tailed Godwit	Ruddy Turnstone	Red Knot	Sanderling	Red-necked Stint	Sharp-tailed Sandpiper	Curlew Sandpiper	Pied Oystercatcher	Sooty Oystercatcher	Banded Stilt	Grey Plover	Red-capped Plover	Double-banded Plover	Hooded Plover	Other	Terns	TOTALS
Dec. 2014	Morella, the Coorong+										5							5
Dec. 2014	St Kilda, Gulf St Vincent+										6							6
Jan. 2015	Lake Callabonna+										15							15
Dec. 2015	St Kilda, Gulf St Vincent+										5							5
12.9.15	Green Point		15			54												69
20.4.16	Blackfellows Caves		7			3												10
23.4.16	Nene Valley (3 geos)		8															8
2015-16	Breeding Season ** #								4				16		27			47
SA team this year			30		0	57	0	0	4	0	31	0	16	0	27	0		165
B/F SA team	1.12.00 – 31.7.2015		596	13	106	435	107	18	40	8	1742		27	25	35	3	320	3475
SA TEAM TO DATE			**626**	**13**	**106**	**492**	**107**	**18**	**44**	**8**	**1773**	**0**	**43**	**25**	**62**	**3**	**320**	**3640**
Eyre Peninsula			**68**		**262**	**393**	**23**	**8**	**12**	**4**	**15**		**21**			**2**	**1**	**809**
Thompson Beach																		
Separate table		**18**	**15**	**1**		**31**	**40**	**1**	**3**			**15**	**4**			**12**	**23**	**163**
Special geo trips																		
8.11.15 (1 geo)	Blackfellows Caves		18															18
10.11.15 (1 geo)	Pelican Point		10			4	5						2			1		22
11.11.15 (1 geo)	Livingston Bay		28			9												37
Total geo trips			**56**			**13**	**5**						**2**			**1**		**77**
B/F geo trips	23.4.2009 - 31.7.2015		326		648	327	77	13	2	1							7	1401
GEO TRIPS TO DATE			**382**	**0**	**648**	**340**	**82**	**13**	**2**	**1**							**7**	**1478**

** chicks/'runners; #noose mat; + Reece Pedler's PhD project (Banded Stilt chick retraps not included in totals)

	OTHER	**SE**	**Yanerbie**				**TERNS**	**SE**	**Yanerbie**	**Thompson Beach**	
Black-fronted Dotterel	3					Crested	199	1			
Golden Plover	1	1				Fairy	104		5		
Broad-billed Sandpiper		1				Caspian	1		4		
							Whiskered	6		14	
							Little	17			
TOTAL								327	1	23	

THOMPSON BEACH CATCHES

DATE	PLACE	Common Greenshank	Bar-tailed Godwit	Ruddy Turnstone	Great Knot	Red Knot	Red-necked Stint	Sharp-tailed sandpiper	Curlew Sandpiper	Grey Plover	Pied Oystercatcher	Red-capped Plover	Fairy Tern	Caspian Tern	Whiskered Tern	TOTALS
2012 November			12		4	1	20	39				3				79
2013 November			6													6
2014 November		4		1	2			1	1	10	3		5	4	14	45
2015 March (2 visits)		1								3						4
B/F totals		**5**	**18**	**1**	**6**	**1**	**20**	**40**	**1**	**13**	**3**	**3**	**5**	**4**	**14**	**134**
2015/16 Summer																
14-20 Nov	)															
8-14 March	) Multiple sets, 2 catches															
4-9 April	)															
17.11.2015	township	1														1
18.11.2015	township			14			11			2		1				28
Totals 2015/16		**1**		**14**			**11**			**2**		**1**				**29**
TOTALS TO DATE		**6**	**18**	**15**	**6**	**1**	**31**	**40**	**1**	**15**	**3**	**4**	**5**	**4**	**14**	**163**

SOUTH AUSTRALIAN TEAM CATCHES - Month Waders Caught in 1.12.200 TO 31.07.2016													
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Ruddy Turnstone	5		11	233	38	16	46	87	92	1	97		626
Red Knot				1		12							13
Sanderling		17	2	82				5					106
Red-necked Stint		34	34	105	4	20	49	93	86	43	1	23	492
Sharp-tailed Sandpiper									6	101			107
Curlew Sandpiper						2	7	6		3			18
Pied Oystercatcher	9	4	1	1	1			2			10	16	44
Sooty Oystercatcher			2	3	2						1		8
Banded Stilt	208	173	12	351		54	429	520				26	1773
Red-capped Plover	5	5	9	6				6	1	7		4	43
Double-banded Plover			4	7		4		10					25
Black-fronted Dotterel			3										3
Hooded Plover	15	5	8	3	2					5	12	12	62
Little Tern	17												17
Fairy Tern		104											104
Crested Tern	199												199
TOTALS	**458**	**342**	**86**	**792**	**47**	**108**	**531**	**729**	**185**	**160**	**121**	**81**	**3640**

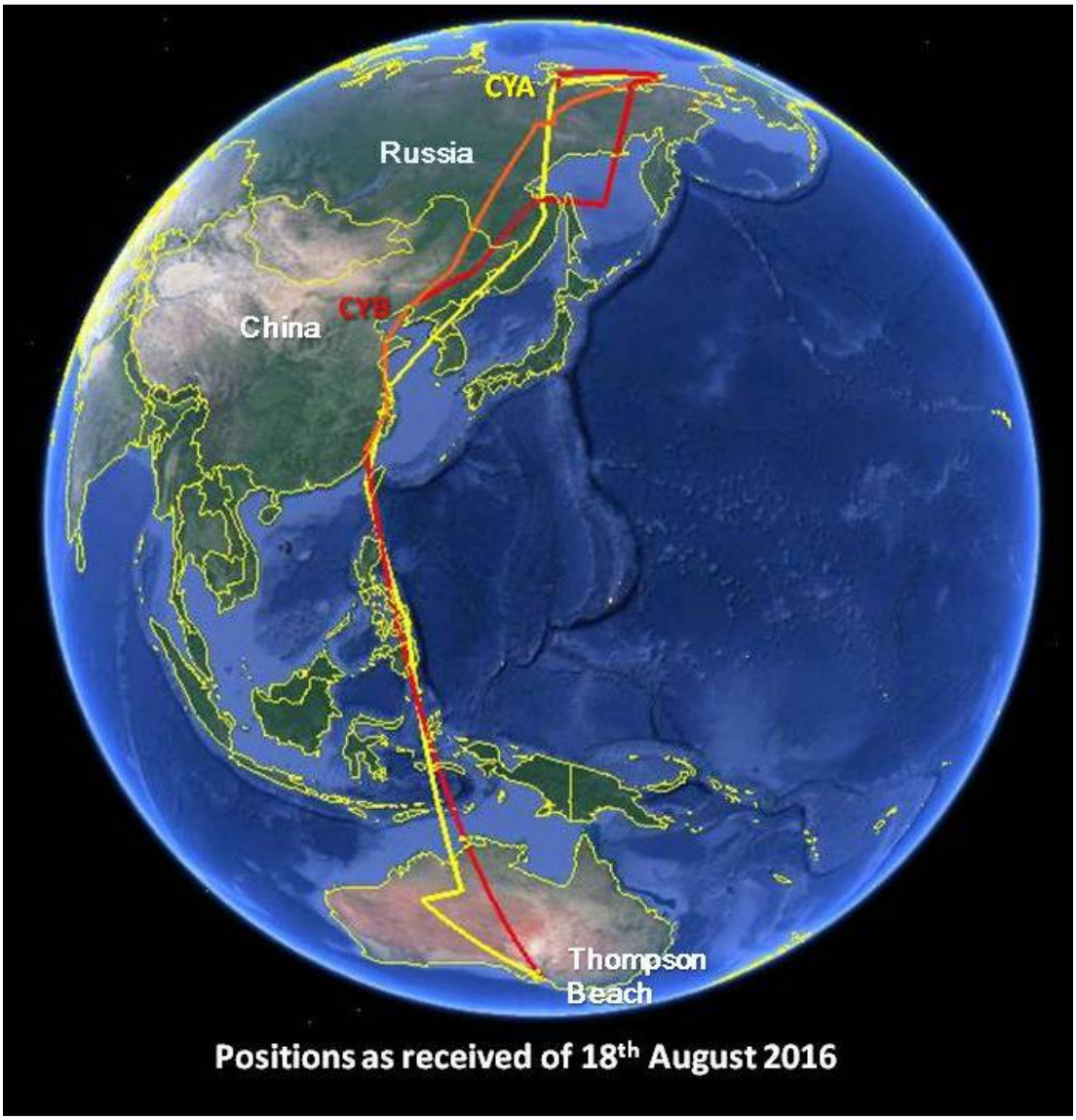
Excludes special geo expeditions by visiting Vic teams, Thompson Beach and Eyre Peninsula catches.

Satellite Tracking of Grey Plover from South Australia to Russia

Tony Flaherty

To better understand local movements and migration of shorebirds in Gulf St Vincent (and the proposed Adelaide International Bird Sanctuary), the Victorian Wader Study Group and Friends of Shorebirds SE, have deployed five satellite-tracking devices on Grey Plover since 2014 at Thompson Beach, north of Adelaide, South Australia. The work is part of banding research undertaken here since 2012, by FoSSE and the VWSG. To date the group has banded 163 shore and seabirds along this section of coast.

Satellite telemetry used 5 gram solar powered Platform Terminal Transmitters, attached using 'leg-loop harnesses'. These were programmed on a 10 hrs. ON/48 hrs. OFF duty cycle. The birds have South Australian flags of orange over yellow flag on their right leg, the two tracked birds have the letters CYA and CYB engraved on their flags.



Grey Plover tracks received as of 18 August, CYA north in yellow, CYB north in orange, southward in red.

Grey Plover in the East Asian Australasian Flyway

Knowledge of Grey Plover migration in the East Asian Australasian Flyway is limited. Over six hundred grey plover have been banded in Australia since 1960, with few recoveries, and no Australian-marked birds recorded in the breeding range. International sightings have been limited, with most being from Japan and a few from the Korean peninsula and China.

A 2001 analysis of biometric data (Minton & Serra 2001) suggested that north-western Australian Grey Plover probably utilized mainland Siberian breeding sites east of the Lena River, and that some SE Australian birds may even breed on Wrangel Island, off the coast of north-east Siberia. Until recently, there was no information on the flyway for Grey Plover breeding on Wrangel Island, until a single 2014 sighting of a Wrangel Island flagged bird in Jiangsu Province, East China.

Two Grey Plover fitted with a satellite transmitters in November 2015 at Thompson Beach, north of Adelaide have been successfully tracked on their northern migration. As with Grey Plover tracked at Thompson Beach in 2014-15, (see VWSG Bulletin No. 38, August 2015), the birds showed high site fidelity to Thompson Beach, spending most of the Austral summer roosting on the beach, claypans and back-lagoons, or flying out to feed at low tide on the extensive mudflats both night and day.

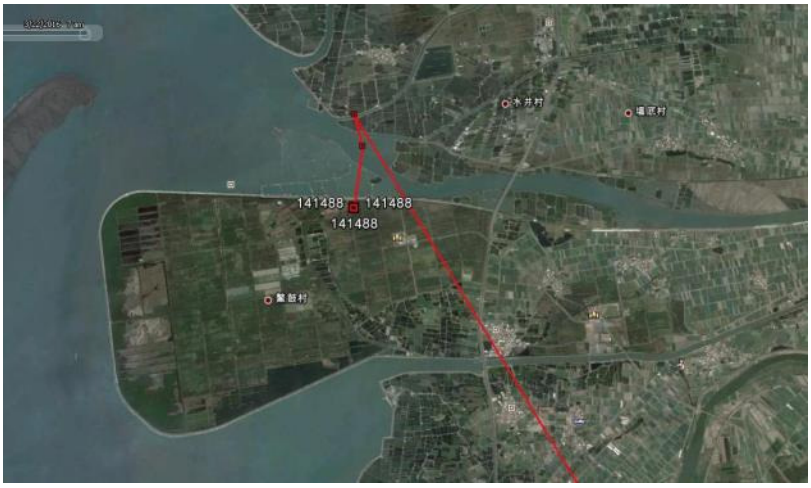
DNA testing for sex of these two birds, from shed feathers, resulted in identification of CYA as a female and an unknown for CYB. Genetic tests of feathers from birds in southern Australia suggest that many birds summering here are females.

GREY PLOVER CYA

On March 14, 2016, a high-pressure system moved in over South Australia. With favourable south-easterly winds, Grey Plover CYA took flight across Australia, passing over the central deserts and then east of Kununurra in Western Australia. She then headed over Indonesia and the Philippines. The bird arrived in western Taiwan by March 20, after a long-haul 7,340 kilometer flight.

Grey Plover CYA at Thompson Beach, before departure (Photo Peter Owen).

CYA rested up near the Beigang River north of Dongshi township. The Beigang Estuary is a Taiwanese wetland of national importance. The Beigang estuary is a mixture of farms, marsh land, fishing ponds, levees, and planted forest. Members of the Taiwan Wader Studies Group were notified, but were not able to locate the bird in the field. This group regularly searches for banded and flagged shorebirds.

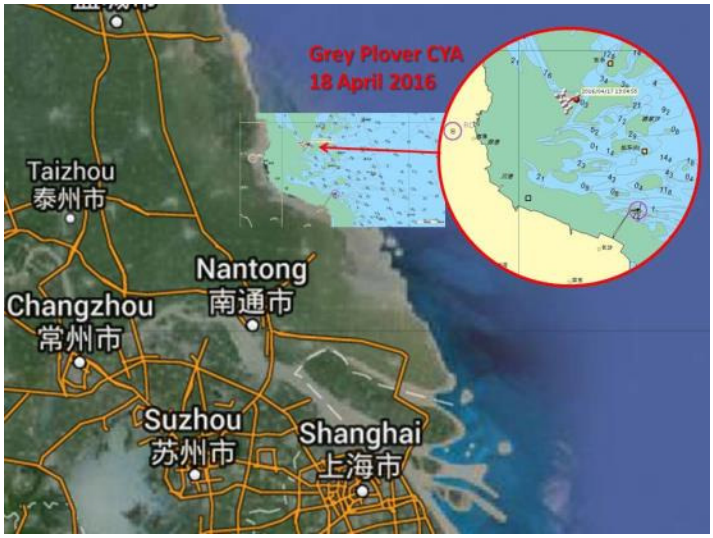


Beigang Estuary, Taiwan

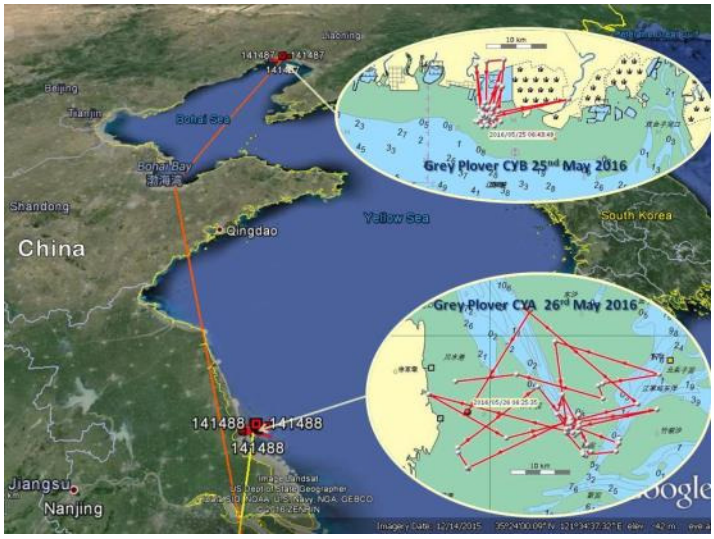
After the April 2, Grey Plover CYA headed to the Chinese mainland. By April 5, she was on the Jiangsu coast of the Yellow Sea, 180 km north of Shanghai. The outflows of the Yangtze and the Yellow Rivers have formed extensive tidal flats of the Dongsha Shoals. This area is also important for a significant proportion of the world population of the critically endangered Spoon-billed Sandpiper. Zhang Lin, one of the Spoon-billed Sandpiper Team in China, was keeping a watch out for CYA whilst taking out the ABC Radio National and BBC team making the recent Flying for your life radio series. Whilst seeing a number of Grey Plover amongst the "spoonies", he did not get glimpse of our bird.

The Dongsha Shoals offshore of Jiangsu, photo Zhang Lin

New Zealand shorebird ecologist David Melville has highlighted the development pressures on this coastal site. Jiangsu Province alone has plans to reclaim 1,800 square km between 2009 and 2020. This includes proposed port and wind farm developments on Dongsha Shoals and potential changes to the intertidal flats at spoon-billed sandpiper sites at Rudong.



The Dongsha Shoals, offshore of Jiangsu used as a major stopover by Grey Plover CYA on northward migration April / May 2016.



Key stopover sites of the Grey Plover in the Yellow Sea, on northward migration April to May 2016

After spending over fifty days offshore of Jiangsu province, CYA left China around May 30, flying north-easterly towards the Sea of Okhotsk. By the June 2, CYA was some 290 km south east of Yana Bay in the Laptev Sea. CYA appears to have made a short half day or more stopover on the June 4, 2016 in a tundra pond area 280 km south of the Siberian coast.

Wrangel Island
From there the bird flew 1,335 km east, reaching Wrangel Island on June 6. She settled into a nesting area in the tundra area nor-north west area, south of Evans Point, Wrangel Island, where she spent at least 58 days.

The Wrangel Island Reserve Manager, Alexander Gruzdev, was contacted, and it was hoped that Snow Geese researchers on the island might have been able to look for the birds. However, the two sites used by the plovers were away from the main Snow Geese study sites.

Wrangel Island (image courtesy Wrangel Island State Nature Reserve).

The start of Grey Plover nesting on Russian Wrangel Island occurs from mid to late June, after arrival in late May to June. The plovers would have been in full breeding plumage by now, living up to their northern name of Black-Bellied Plover, pairing up and searching for nesting sites, and nesting. Grey Plover appear to favour very exposed, bare ridges or banks, which may be the first areas to thaw from snow. Eggs are laid in a bare scrap, sometimes with lichen.

Grey Plover on Wrangel Island (Photo courtesy Wrangel Island State Nature Reserve).

Observations from the Canadian Arctic, note that males appear to arrive earlier to the breeding grounds. Where Grey Plover males in the East-Asian Australasian flyway abide in the in non-breeding season is another mystery.

Before laying, female Grey Plover will spend much time feeding, whist the males spend more time preening and keeping watch at the nest territory. Grey Plover may re-nest if eggs are lost shortly after laying, though in the arctic this is often less likely. Plovers spend their first to second weeks on arrival in preparations before egg laying.

The nest preparation involves, scraping a hollow and gathering lichen, greases or sedges. After this there will be a week or more of egg laying and a month of incubation. The chicks will need another month before they are fledged and able to fly. Adult females may leave the breeding ground early and leave the chicks to the males for care.

In a 1950' expedition to the Canadian north-west territories, William Drury describes the males undertaking territorial ground and flight displays. These "butterfly" flights up to thirty meters in the air with slow hesitant wing flaps, calling "kehweh", or "kuidiloo". After the slow flight the male "suddenly flew very fast, swerving and towering, and occasionally dashing at the ground".

Grey Plover Eggs and chicks on Wrangel Island (Photo courtesy Pavel Tomkovich).

After eleven days the chicks can regulate their own temperatures and no longer need to be close to their parents or each other. The adults spend more time resting, but still keep watch for predators and defend the nest area. The parents may continue brooding for a couple of days after the chicks have left the nest, although adult plovers may desert the nest several hours after the last hatched chick has been brooded.

Around August 2, CYA moved inland, ten kilometres south-sou'-east, from her established nesting territory. She spent two days in upland tundra near the Neizvestnaya River, before moving back to her original territory by August 4.

These central river valleys of Wrangel are considered to be landscapes reminiscent of the Pleistocene epoch which ended some 11,000 years ago. The upper reaches of the Neizvestnaya River hosts relict tundra-steppe plant communities from the Pleistocene and Holocene epochs, endemic to the Chukotka region. Limited glaciations during the Pleistocene have made Wrangel Island an Arctic hotspot for plant biodiversity, with more than 400 vascular plants, of which 23 are endemic.

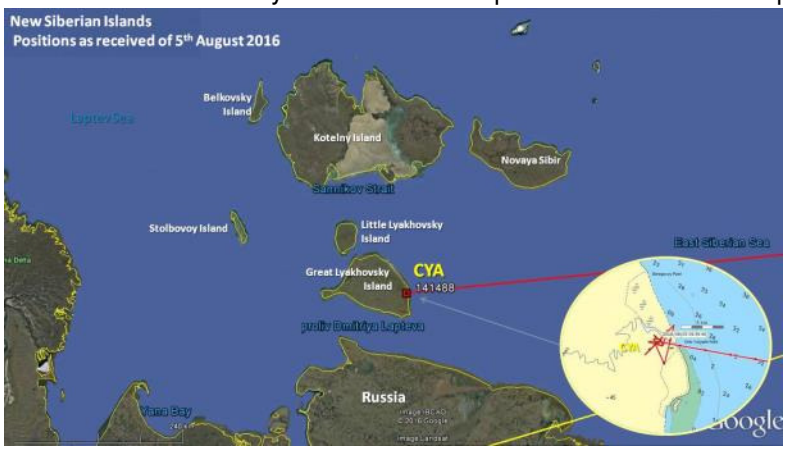
A field station called Srednaya Neizvestnaya (middle Neizvestnaya River) is close by. This was the location of a 2007 Wrangel Island expedition to study breeding waders, with a focus on Red Knot (Tomkovich & Dondua 2008). Wrangel Island Red Knot migrate along the American Pacific coast, with one resight from Wrangel Island seen in Baja California, Mexico. This expedition also observed Grey Plover on the Island. By early July, most waders' eggs had hatched, however Grey Plover were noted as the last breeder on the Island and nest occupation was only just starting. Chicks hatched in 63% of nests of Grey Plover (12 of 19).

Tomkovich and Dondua (2008) noted a high level of hatching failure, out of "*58 Grey Plover eggs from 15 clutches, 17% failed to hatch because of embryo mortality or infertility. This is an unusually high level for waders. If it is the regular level on Wrangel, it might be the result of inbreeding within the island population, a point that warrants further investigation*".

Grey Plover on Wrangel Island displaying high intensity distraction behaviour (Photo courtesy Pavel Tomkovich).

On August 5, CYA made a 1,245 flight, east, to the New Siberian Islands. This low lying group of islands with low rounded hills was formed by retreating sea levels and are composed of permafrost and soil. With a warmer climate, large chunks of the islands are falling into the sea as the permafrost thaws. CYA departed after a brief stay.

As of the last position received on the August 7, she was 280 kilometres south of the Siberian coast. This was and was very close to a tundra pond area where CYA appears to have had a short stop during northward migration. No further transmissions have been received.

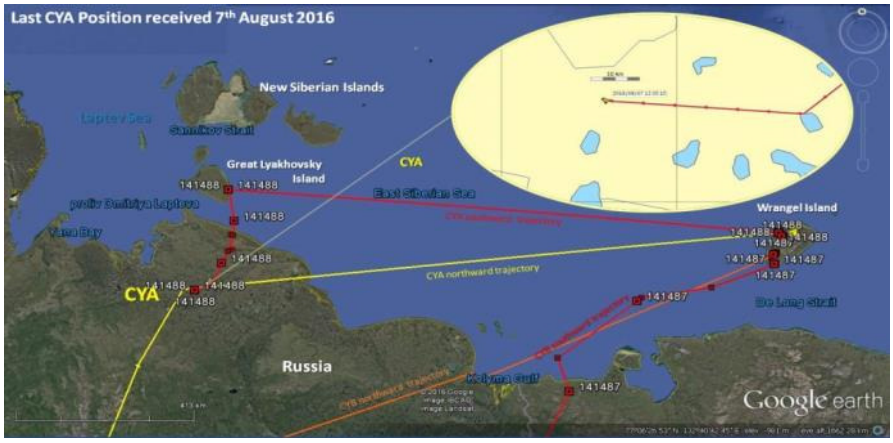


The New Siberian Island brief stop of CYA

Clive Minton commented that the move from Wrangel to New Siberian Islands "*is quite amazing! NSI is where almost all our Sanderling and at least half of our Turnstones go to breed. Of even*

more relevance however is the fact that the 2008 satellite tracking of Bar-tailed Godwit showed that after they had ceased breeding on mainland Siberia they moved northwards to NSI for a couple of weeks or more before starting their southward migration. Apparently this odd behaviour was already known beforehand. Pavel Tomkovich said that the reason was the huge concentrations of crane flies on the New Siberian Islands in July, providing ideal food for pre-migratory fattening".

Since leaving Thompson Beach in South Australia on March 14, 2016, Plover CYA travelled over 13,180 km to Wrangel. The bird was tracked for over 14,700 km for 147 days during migration, before transmission was lost on August 7. The longest non-stop flight of 7270 km over seven days from Thompson Beach to Taiwan.



The last position received for Grey Plover CYA, on August 7, 2016.

The last position received for Grey Plover CYA, on August 7 2016.

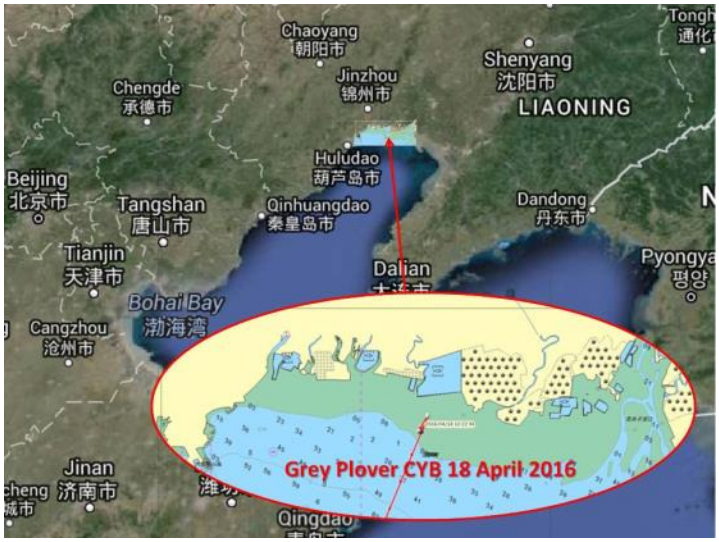
Grey Plover CYB

A high-pressure system moving over South Australia saw Grey Plover CYB depart from Thompson Beach on March 24. The bird tracked over the Australian central deserts, and by March 26 was just west of Bathurst Island headed north. By March 28 the bird was east of Luzon Island in the Philippines. CYB reached the Chinese coast by April 2, after a 7,090 kilometer non-stop flight.

Plover CYB with transmitter ready for release (Photo Tony Flaherty).

CYB rested up on mainland China in a bay east of the city of Ningde, in Fujian province. This coastline has extensive tidal mudflats and is home to large floating fishing and aquaculture villages, which date back thousands of years to the Tang dynasty.

By April 5, it made a short flight to the Sanbei Shallows of Hangzhou Bay, departing after April 7. The Qiantang or Qian River flows into the bay, which has the world's largest tidal bore. Waves of water up to 9 m high are formed by the incoming tide, travelling up to 40 km per hour.



The key stopover site for Grey Plover CYB in Liaodong Bay, China

By April 9, the bird was in Laizhou Bay, Bohai Sea, near Changyi, in the northwest corner of Shandong province. By April 11, CYB flew north across Bohai Bay and by April 16, was 445 km away, near Liaodong Bay, southeast of Jinzhou city in Liaoning Province. This part of the northern Bohai Bay was the key stopover site for the bird in China, spending some forty-three days here.

Liaohe Estuary National Nature Reserve, adjacent to the Liaodong Bay used by Grey Plover CYB (Photo Courtesy Doug Watkins).

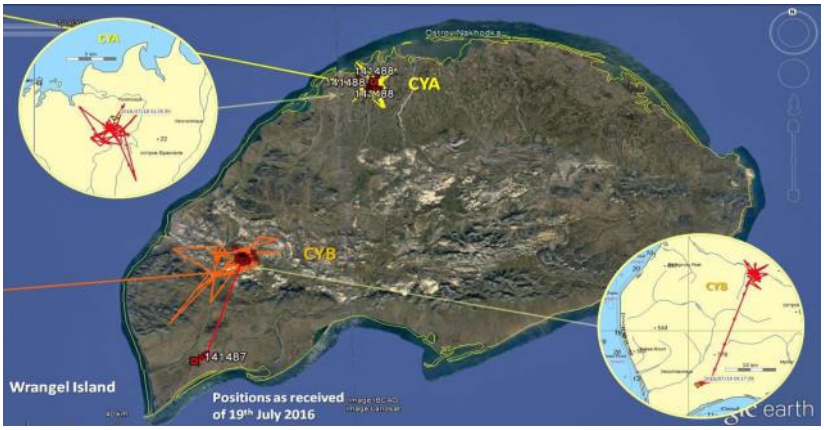
By May 27, CYB was in transit, over Inner Mongolia and the Russian Steppes and by June 3, reached Kolyma Gulf in the East Siberian Sea. CYB appears to have made a brief stay of up to seven hours here. The Kolyma River flows into the gulf through a large delta with many islands. CYB had travelled some 4,105 kilometres from its stop-over site in northern Bohai Bay in China.

CYB reached Wrangel Island by June 5, initially settling on the south western end of the island. Plover CYB was much more mobile than CYA in the nesting territory. Some eight days later, by June 13, the bird moved 90 kilometres east nor-east to the north-eastern side of Wrangel. After five days, by June 18, CYB moved back to the west of the island near the area it initially settled at on arrival.

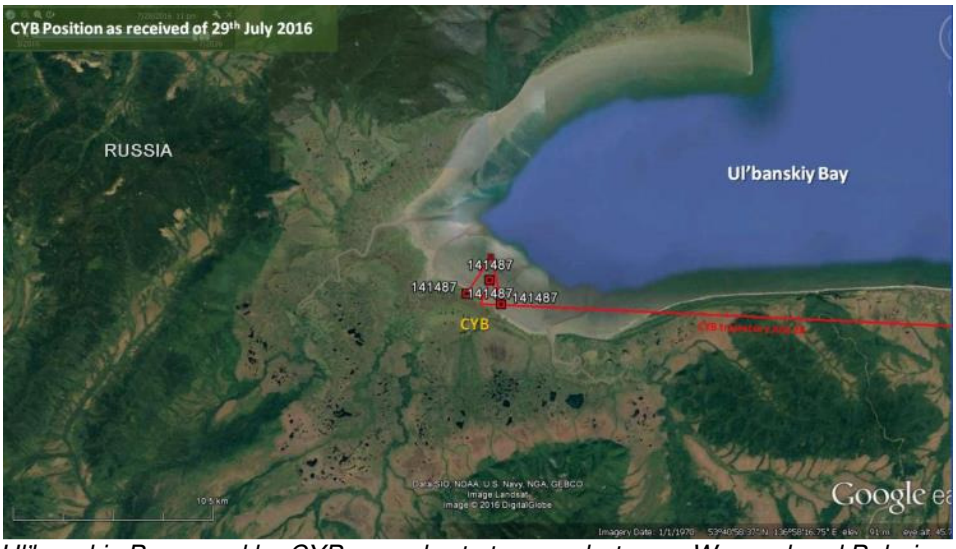
Nesting Grey Plover on Wrangel Island (Photo courtesy Pavel Tomkovich).

By July 19, Grey Plover CYB moved again, 25 kilometres south west, near the Neoshidannaya River in a mountainous tundra valley area. CYB spent some fifty days on Wrangel Island since arriving around June 5. The bird resettled a number of times, but had stayed in one general location for some thirty days so it is possible it nested successfully.

Key locations used by the Grey Plover on Wrangel Island



Grey Plover CYB left Wrangel Island on the 24 July, headed southwest and then south to the Siberian mainland. The bird flew over the Sea of Okhotsk between the Russian Kamchatka Peninsula and Kuril Islands. The bird appeared to be headed to Japan, but some 900 km northeast of the island of Hokkaido, the bird veered west to the Russian mainland. By July 28, it had settled on the tidal flats of Ul'banskiy Bay in the Tuguro-Chumikansky District of Khabarovsk Krai, Russia. Called Mercury Bay by American whalers in the 1800's, the Bay is south of Russia's Shantar Islands National Park. Although unprotected, Ul'banskiy Bay is recognized as a Russian Far East Important Bird Area, with this 80,000 hectares of forest, grassland and wetlands providing habitat for threatened shorebird such as Spoon-billed sandpiper, Nordmann's Greenshank and waterfowl such as Oriental Stork, Swan Goose and Baikal Teal.

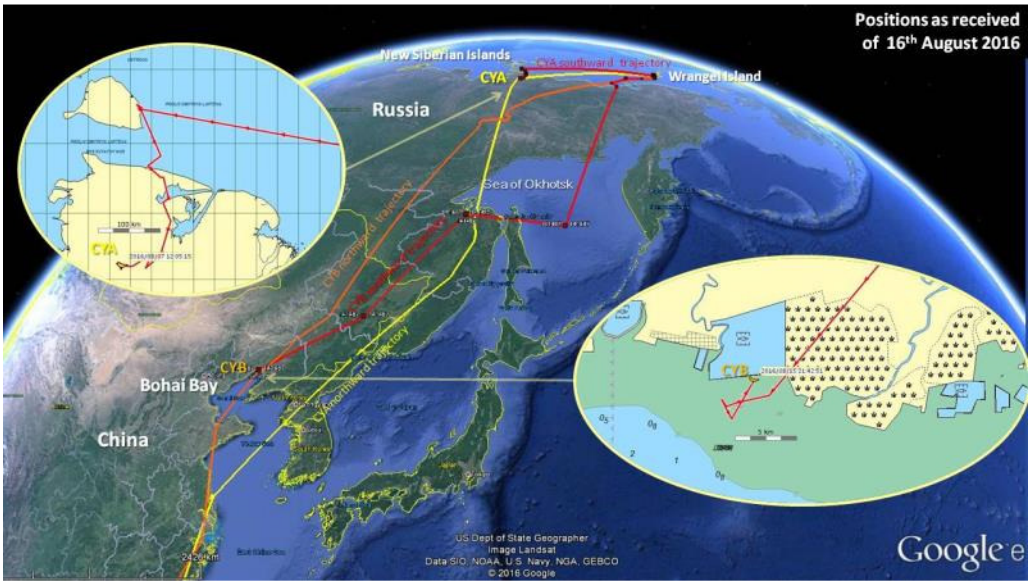


Ul'banskiy Bay, used by CYB as a short stopover between Wrangel and Bohai on southward migration. The area is recognized as one of the Russian Far East Important Bird Areas.

Clive Minton mentions that the Sea of Okhotsk is the most popular staging point north of the Yellow Sea for Great Knot, Red Knot and Bar-tailed Godwit. Pavel Tomkovitch agrees mentioning in communications that the "*Sea of Okhotsk indeed is an important staging area for many shorebirds on the southward migration, but similarly with CYB our adult Red Knot with geolocators spent only 4-9 days there before moving for a longer stay in the Yellow Sea. Thus, the Sea of Okhotsk possibly is more important for juveniles of the larger shorebirds, but this still to be learnt*".

CYB left Ul'banskiy Bay by August 6, making a 1,900 kilometre flight to reach northern Bohai Bay, China by August 11. This is the same location used on its' major northward migration stopover from April to May.

Back to Bohai. Grey Plover CYB locations in Liaodong Bay, China southward migration (August 2016) locations in red, northward (April – May 2016) locations in orange.



Grey Plover tracks received as of 16 August, CYA north in yellow, CYB north in orange, southward in red.

CYB travelled has 5,340 kilometres from Wrangel Island and has clocked up over 18,935 kilometres since leaving Thompson Beach, South Australia in 24 March 2016. The longest non-stop flight was 7,090 kilometres from Thompson Beach to Fujian province in mainland China, over at least 9 days.

The juvenile Grey Plover typically stay for some time after the adults depart. Historical records for Wrangel Island note that the last active nests being recorded on July 25. Adults may start departing in the first week of August and juveniles may stay until the second week of September.

Juvenile Grey Plover Grey Plover on Wrangel Island (Photo courtesy Pavel Tomkovich).

This work would not have been possible without the incredible efforts of the many volunteers from the Victorian Wader Study Group and Friends of Shorebirds South East, as well as support from project staff from Natural Resources Adelaide and Mt Lofty Ranges and BirdLife Australia and many local volunteers, Birds SA members and the assistance from locals of Thompson Beach and Middle Beach.

The dedication and leadership of Maureen Christie is greatly appreciated as has been the support and encouragement (despite a lack of Red Knot and Bar-tailed Godwit at Thompson Beach) of Clive Minton. Many thanks to Roger Standen for work in providing VWSG website updates.

The project has been supported by Adelaide and Mount Lofty Ranges Natural Resources Management Board and the Australian Government funded Samphire Coast Icon Project.

References

Byrkjedal, I. & Thompson, D. 1998. *Tundra plovers: Eurasian, Pacific and American Golden Plovers and Grey Plover*. London, Poyser.

Drury, William H. 1961. The Breeding Biology of Shorebirds on Bylot Island, Northwest Territories, Canada. *The Auk* 78: (2) 176-219.

Hussell, D.T., & Page G. W.1976. Observations on the Breeding Biology of Black-Bellied Plovers on Devon Island, N.W.T., Canada. *The Wilson Bulletin* 88: (4) 632-53.

Mayfield, H.F., 1973. Black-Bellied Plover Incubation and Hatching. *The Wilson Bulletin,* 85: (1) 82-85.

Melville, D. S., Chen, Y., & Ma, Z., 2016. Shorebirds along the Yellow Sea coast of China face an uncertain future – a review of threats. *Emu:* 116: 100–110.

Minton, C & Serra, L, 2001. Biometrics and moult of Grey Plovers, *Pluvialis squatarola*, in Australia. *Emu*: 101 (1) 13-18.

Minton, C 2004. What have we learned from banding and flagging waders in Australia*?* In Straw, P. 2004. *Status and Conservation of Shorebirds in the East Asian-Australasian Flyway; Proceedings of the Australasian Shorebirds Conference 13-15 December 2003,* Canberra, Australia. Wetlands International Global Series 18, International Wader Studies 17. Sydney, Australia.

Serra L., Whitelaw, D.A., Tree A.J. & Underhill, L.G., 1999. Moult, mass and migration of Grey Plovers *Pluvialis squatarola* wintering in South Africa. *Ardea* 87: 7181.

Tomkovich, P.S. & A.G. Dondua. 2008. Red Knots on Wrangel Island: results of observations and catching in summer 2007. *Wader Study Group Bull.* 115: 102–109.

Tulp, I, Schekkerman, H, Klaassen, R.H.G., Ens, BJ & Visser, G.H., 2009. Body condition of shorebirds upon arrival at their Siberian breeding grounds, *Polar Biology* 32: (3) 481-491.

The VWSG Geolocator program – the dividends keep coming!

Ken Gosbell, Clive Minton, Maureen Christie, Rob Patrick, Penny Johns and Roz Jessop

Introduction

The geolocator program was initiated by the VWSG in 2009 with trials of six geolocators deployed on Ruddy Turnstone at Flinders, Victoria, and two at Carpenter Rocks in South Australia. Since then some 610 geolocators have been deployed by the VWSG on several species in Victoria and South Australia as well as King Island. In addition 165 have been deployed on three species in NW Australia by the AWSG and GFN. The VWSG were among the first in the world to use this instrument on shorebirds while today the technique is used by almost all countries undertaking shorebird studies. We have continued to be leaders in this field through our publications and, in collaboration with Deakin University, developing new analytical techniques which are adding enormously to our knowledge of migratory shorebirds in our flyway. The following provides a snapshot of the nature and extent of our program; it does not attempt to cover in any detail the scientific outcomes of these studies as these are more adequately covered in existing or proposed publications. It must be noted that these outcomes have only been possible through the dedication and generosity of the VWSG field teams and supporters who have volunteered so many days under sometimes difficult conditions, to deploy and retrieve these loggers. Of particular significance has been the collaboration with Marcel Klaassen and his team at Deakin University who have contributed expertise as well as physical and financial resources.

Deployment and retrievals of geolocators by VWSG

Table 1 shows the summary of deployments and retrievals by VWSG since 2009. In summary, 397 have been deployed on Ruddy Turnstone, 68 on Sanderling, 23 on Eastern Curlew and 61 on Red-necked Stint making a total of 610 fitted to shorebirds expected to migrate to the northern hemisphere to breed. Over the last year we have again concentrated on Ruddy Turnstone for several reasons which include the proven site faithfulness of this species making retrieval more likely. The focus on this species has enabled a longitudinal study to be made of birds for which we have data on multiple migrations.

During the last season (2015/16) we deployed a record 168 geolocators comprising 107 on Ruddy Turnstone (29 in SA and 78 in King Island) as well as 61 on Red-necked Stint. Since the commencement of the program we have had a wish to enable the use of this technology on our smallest wader, the Red-necked Stint. With the development by our suppliers, Migrate Technology, of a 0.3g unit this became feasible and 61 geolocators were deployed at Yallock Creek Victoria, in April 2016. Of the 34 retrievals from Ruddy Turnstone this year, 31 provided data to produce at least one migration track, while four produced two years of data.

One of the features of our program has been the high retrieval rate, particularly for Ruddy Turnstone; over the last six years 141 retrievals have been made which is 49% of those deployed. Averaged over all species this is 43% which is high in comparison with many other studies but does reflect the site faithfulness of Turnstones (and the tenacity of those in the field).

Technical performance

Over more recent years the technical performance of the geolocators used has improved significantly. Since adopting the Migrate Technology Intigeo units in 2012, we have had few problems with performance, a fact borne out by 31 loggers providing useful data from the 34 retrieved during 2015/16, despite the hard wear they suffer from the rocky habitat used by this species. This Intigeo unit has the additional advantage that it provides full light values as opposed to the truncated values

used by older models used in our earlier studies. It also records conductivity and temperature measurements which have proven useful in our analysis.

Outcomes from the program
There have been a number of outcomes from this program some of which can be summarised as follows:

1. An understanding of migration strategies including tracks, timings and stopover areas for northward and southward migration. Some of these have added new knowledge or provided confirmation on migratory paths such as the use of the Pacific for south migration for some Ruddy Turnstones, the use of the coasts of Vietnam as short stopovers for Sanderling and the Daursky Wetlands in Russia as an initial stop for many Ruddy Turnstones heading south.
2. The identification of major stopover areas for both northward and southward migrations. In particular, the vital importance of the Yellow Sea has been demonstrated and reinforced for all of the species studied.
3. By using the analytical technique developed by Simeon Lisovski (Deakin University), we have now identified the breeding areas for Ruddy Turnstone, Sanderling and Great Knot. This is a major contribution to our knowledge of these species.
4. In addition we have made assessments of the probability of incubation success of nesting birds. For instance, of the 31 Ruddy Turnstones analysed from last season, seven showed signs of successful incubation. Of course we have no way of knowing how many chicks actually fledged and migrated south.
5. Deakin University undertook a special investigation on King Island turnstones into the effects of intestinal parasites on migration efficiency
6. Over the period 2009 to 2016 we have recorded 25 repeat tracks, 19 have been by Ruddy Turnstone. Of these, one bird has provided 4 tracks, while others have provided 2 and 3 tracks. This provides a significant opportunity to study any variations with time.

Conservation Outcomes
One of the objectives of the program has been to utilise the results to input to conservation strategies and programs. The identification of critical stopover areas is essential in driving the development and implementation of conservation plans by governments and organisations such as the Flyway Partnership and the results from our program have already proved useful.

The information gained from geolocators has also played a major part in local conservation issues. The proposal to harvest beach wrack (seaweed) from the beaches of the southeast of South Australia which are important to the pre migration feeding of Ruddy Turnstone and Sanderling was successfully contested on the basis of the known departure times gained through our geolocator studies.

Costs
The geolocators have been purchased at an average cost of close to $200 each. With 613 units deployed over the last seven years this equates to a cost of around $123,000.

Funding has been obtained from a wide range of sources including significant contributions made by, or organised by, VWSG members (including legacies from two deceased members). Funds were also raised by a number of special activities, particularly at the AGM, which included raffles for items such as wine (generously donated by the Myer family) and books (kindly donated by Andrew Isles). We also acknowledge the contribution by the Norman Wettenhall Trust.

Over the last two years the major funding source has been from Marcel Klaassen's Migration Ecology unit at Deakin University. It is through their wish to maintain their research program on the Ruddy Turnstone from King Island in particular, that their support has enabled the program on this site to continue to our mutual benefit.

South Australia has contributed $31,090 from sources including Nature Foundation of SA, Kimberley Clark Aust P/L, Department of Environment and Natural Resources (DEWNR), South East Natural Resource Management Board, Limestone Coast & Coorong Coastal Management Group and Newbery Park Primary School. All are greatly thanked for their most generous help which has been fundamental to us being able to undertake geolocator studies on a scale which is significant.

Table 1. Geolocators deployed/ retrieved each year by VWSG 2009 to May 2016

Year	Ruddy Turnstone		Sanderling		Eastern Curlew		Red-necked Stint		TOTAL		% retrieved by year
	On	Off	On	Off	On	Off	On	Off	On	Off	
2009	8	4							8	4	50
2010	75	33							75	33	44
2011	46	13	24	1	23	3			93	17	18
2012	32	12	44	16		5			76	33	43
2013	69	23		1					69	24	35
2014	60	22							60	22	37
2015	(107)	34					(61)		168	34	
TOTAL	397	141	68	18	23	8	61		549	167	44
%		49		26		35					

Publications

The scientific papers published so far based on the results of our geolocator studies are listed at the conclusion of this paper. Further analyses are in train and additional papers will be published in the future. Also listed are the most recent verbal presentations made on our geolocator work.

The Future

When the initial geolocator deployments and successful retrievals were made these provided for the first time a picture of the migration tracks of Ruddy Turnstone. We had little idea then of the scale that the program would develop into and the incredible amount of information it would provide across several species. Seven years later the VWSG can be very proud of the leadership in this technology that it has provided and the valuable results it has recorded and published.

Future plans for the use of geolocators in southern Australia have limitations due to there being comparatively few species of migratory waders which visit south-eastern Australia on which geolocators can be economically deployed. Species which it would be highly desirable to study – Curlew Sandpiper, Sharp-tailed Sandpiper, Red Knot, Bar-tailed Godwit for example – have low recapture rates, either because only a small proportion of the population can be captured each year because of their low populations/inaccessibility, or because of the ephemeral nature of their return patterns. However, the development of a 0.3g geolocator by Migrate Technology has enabled deployment on Red-necked Stint for the first time. A total of 61 units were put on this species at Yallock Creek in April and we eagerly await their return later this year.

With the close collaboration and co-operation with Marcel Klaassen's team at Deakin University, it is intended to continue, at least for another year, the deployment of geolocators on Ruddy Turnstone on King Island and in South Australia. In addition we will continue to support the Deakin team as they examine in more detail the data now available on multiple journeys, incubation characteristics and the marked migration ecology differences between the Ruddy Turnstone populations of the south-east of South Australia and those of King Island, which are only some 200km apart.

Conclusion

The VWSG's move into the field of geolocators in early 2009 has proved to be an astounding success. We were, and still are, one of the world leaders in the use of geolocators to study shorebird migration. VWSG members are to be congratulated on the dedication and perseverance they have demonstrated through many hours of intensive field work which has enabled the deployment of 613 geolocators over five sites in south eastern Australia and such a satisfactory retrieval rate to be achieved. This has led to so much significant information on migration and other characteristics being obtained.

Papers published:

Aharon-Rotman Y., Bauer, S. & Klaassen, M. 2016. A chain is as strong as its weakest link: assessing the consequences of habitat loss and degradation in a long-distance migratory shorebird. *Emu* 116(2) 199–207

Minton, C., Gosbell, K., Johns, P., Christie, M., Fox, J.W. & Afanasyev, V. 2010.Initial results from light level geolocator trials on Ruddy Turnstone *Arenaria interpres* reveal unexpected migration route. Wader Study Group Bull. 117 (1).
Minton, C., Gosbell, K., Johns, P., Christie, M., Klaasson, M., Hassell, C., Boyle, A., Jessop, R. & Fox, J. 2011a. Geolocator studies on Ruddy Turnstones *Arenaria interpres* and Greater Sandplovers *Charadrius leschenaultii* in the East Asian-Australasian Flyway reveal widely different migration strategies. Wader Study Group Bull. 118 (2).
Gosbell, K., C. Minton & J. Fox. 2013. Geolocators reveal incubation and re-nesting characteristics of Ruddy Turnstones Arenaria interpres and Eastern Curlews *Numenius madagascarensis*. Wader Study Group Bull. 119 (3).
Minton, C., Gosbell K., Johns, P, Christie M, Klaassen M, Hassell C, Boyle A, Jessop R, Fox J. 2014. New insights from geolocators deployed on waders in Australia. Wader Study Group Bull. 120 (1).
Lisovski, S., **Gosbell, K., Christie, M., Hoye, B., Klaassen, M., Stewart, I., Taysom, A. & Minton, C. 2016.** Movement patterns of Sanderling (*Calidris alba)* in the East Asian–Australasian Flyway and a comparison of methods for identification of crucial areas for conservation. *Emu* 116(2) 168-17.
Lisovski, S., Gosbell, K., Hassell, C., & Minton, C. (in prep). Tracking the full annual cycle of Great Knot (*Calidris tenuirostris*), a long-distance migratory shorebird of the EAAF.
Weiser, E. L. et al. 2016. Effects of geolocators on hatching success return rates, breeding movements, and change in body mass in 16 species of Arctic-breeding shorebirds. Movement Ecology 4:12.
Zhao, et al (in prep) Migration phenology and stopover site use of a long distance migratory bird along the East Asian-Australasian Flyway– a multi-population assessment.

Presentations were made at the AWSG Conference, Adelaide, September 2012 and Darwin, September 2014. A presentation is planned for the Auckland Conference in October 2016.

Unlocking some of the mysteries of migration – geolocators providing new insights of the migration strategies for 4 shorebird species. Clive Minton, Ken Gosbell

What can geolocators tell us about shorebirds breeding in the Arctic? Ken Gosbell, Clive Minton

EAAF Partnership Meeting, Alaska, June 2013. What we have learnt from Geolocators in Australia about the migration of small waders. Ken Gosbell.

IWSG Conference, Germany, 2013. What we have learnt from six years of deploying geolocators in Australia. Clive Minton

AWSG Conference, Darwin, September 2014
Latitudinal trend in deposition of migratory fuel as driver of trans-equatorial long distance migration in shorebirds. Yaara Aharon-Rotman, Clive Minton, Ken Gosbell and Marcel Klaassen

5 Years on – What have we learned from geolocators deployed in Australia. Clive Minton, Ken Gosbell, Chris Hassell, Maureen Christie and Marcel Klaassen.

Geolocator Studies on Ruddy Turnstone (2009 to 2014) reveals information on migration strategies. Clive Minton, Ken Gosbell and Yaara Rotman

Insights into migration pattern of Sanderlings using geolocators: from raw light data to ecological insights Simeon Lisovski, Ken Gosbell & Clive Minton

Spoon-billed Sandpiper and countless other waders near Rudong

Peter Madvig

In September, 2015, four Australian birders found themselves “chasing shorebirds” in China! A dream coming true – to see first of all, the rare and enigmatic, Spoon-billed Sandpiper.

The four of us, Alan, Alec, Paul, and I, had secured the excellent guiding services of Zhang Lin from Shanghai, who, incidentally, had attended the AWSG conference in Darwin in September, 2014. The eight day trip had us mainly birding the mudflats and roosting sites of the Rudong-Dongtai-Dongling area, in Jiangsu Province, concentrating on shorebirds. We did, however, also have some excellent opportunities of meeting up with a wide variety of passage migrants in shrub and woodlands, together with native birds, such as the Reed Parrotbill…!

Published in *Tattler,* no. 35, April 2015, Dr Christoph Zockler, Coordinator Spoon-billed Sandpiper Taskforce (Source: Spoon-billed Sandpiper Taskforce News Bulletin No. 13, February 2015), draws attention to the huge mudflat area, the Tiaozini sandbanks, critical for SPS. This area, which we also visited, is threatened by reclamation and massive development; local and International bodies are hoping to halt or delay these plans. We met up with several groups of people, from overseas as well as from China, counting and studying shorebirds. Detailed pamphlets in Mandarin highlighting the plight of shorebirds – especially featuring the Spoonies, are widely distributed in townships.

Not only did we observe feeding and roosting Spoon-bills (once you’ve seen their method of moving along when feeding, they stand out amongst the countless other waders), but also numerous Dunlins, Kentish Plover, Red-necked Stint, the two Sand Plover, to name just a few of the many species there. Having been spoilt by shorebird encounters over several months on Roebuck Bay and on 80 Mile Beach on two AWSG expeditions, I was never-the-less enthralled by the spectacle of the numbers and variety of waders on the mudflats. On one occasion our group counted close to 700 Nordmann’s Greenshank!!

The tides washed in very fast, so we had to make haste in retreating to the sea wall. Shorebirds flew across and proceeded to their many roosting places on reclaimed land – close to fish farms, on grassy or sandy flats, in paddies, on concrete barriers. We were thrilled to observe close up, through the opened sliding door of our vehicle, while rain squalls battered the opposite side – hunkered down waders, including the S-BS with a

lime-green flag, “J2”…! Banded in Chukotka as a 2 day old chick on 8.7.14, observed in Rudong in spring and now again here this northern autumn – wonderful!

Spoon-billed Sandpiper (Photo by Alec Gillespie)

Publications and Presentations using VWSG data

Roz Jessop

NEWSLETTERS

Members made contributions to the following:

- **“The Tattler”,** Newsletter for the East Asian-Australasian Flyway. Copies can be down loaded from the AWSG web page http://www.awsg.org.au/. You can also download previous copies of the AWSG journal Stilt from this site.
- **“VicBabbler”,** quarterly newsletter of the BirdLife Victoria
- **“Friends of the Shorebirds South East”** email newsletters prepared by Maureen Christie

Papers of interest:

Aharon-Rotman Y., Bauer, S. & Klaassen, M 2016. A chain is as strong as its weakest link: assessing the consequences of habitat loss and degradation in a long-distance migratory shorebird. *Emu* 116(2) 199–207

Dhanjal-Adams, K.L., Hanson, J.O., Murray, N.J., Phinn, S.R., Wingate, V.R., Mustin, K., Lee, J.R., Allan, J.R., Oliver, J.L., Studds, C.E., Clemens, R.S., Roelfsema, C.M. & Fuller, R.A. 2016. Distribution and protection of intertidal habitats in Australia. *Emu* 116: 208-214.

Lisovski, S., Gosbell, K., Christie, M., Hoye, B., Klaassen, M., Stewart, I., Taysom, A. & Minton, C. 2016. Movement patterns of Sanderling (*Calidris alba)* in the East Asian–Australasian Flyway and a comparison of methods for identification of crucial areas for conservation. *Emu* 116(2) 168-17.

Weiser, E. L., Lanctot, R. B., Brown, S. C., Alves, J. A., Battley, P., Bentzen, R., Bêty, J., Bishop, M. A., Boldenow, M., Bollache, L., Casler, B., Christie, M., T. Coleman, J., Conklin, J., B. English, W., Gates, H. R., Gilg, O., Giroux, M-A., Gosbell, K., Hassell, C. J., Helmericks, J., Johnson, A., Katrínardóttir, B., Koivula, K., Kwon, E., Lamarre, J-F., Lang, J., Lank, D. B., Lecomte, N., Liebezeit, J., Loverti, V., McKinnon, L., Minton, C. D. T., Mizrahi, D., Minton, C. D. T., Nol, E., Pakanen, V-M., Perz, J., Porter, R., Rausch, J., Reneerkens, J., Rönkä, N., Saalfeld, S., Senner, N., Sittler, B., Smith, P. A., Sowl, K., Taylor, A., Ward, D. H., Yezerinac, S. & Sandercock, B. K.2016 Effects of geolocators on hatching success, return rates, breeding movements, and change in body mass in 16 species of Arctic-breeding shorebirds. *Movement Ecology* 4:12.

Birds on top of the world, with nowhere to go

A Ruddy Turnstone at a snow patch edge.

Climate change could make much of the Arctic unsuitable for millions of migratory birds that travel north to breed each year, according to a new international study published today in Global Change Biology.

The University of Queensland School of Biological Sciences' researcher Hannah Wauchope said that suitable breeding conditions for Arctic shorebirds could collapse by 2070.

"This means that countries throughout the world will have fewer migratory birds reaching their shores," Ms Wauchope said.

Arctic breeding shorebirds undertake some of the longest known migratory journeys in the animal kingdom, with many travelling more than 20,000 kilometres per year to escape the northern winter. The bar-tailed godwit flies from Alaska to New Zealand in a single flight of 12,000 kilometres without landing. The study predicts that, in a warming world, migratory birds will become increasingly restricted to small islands in the Arctic Ocean as they retreat north. This could cause declines in hard-hit regions and some birds could even completely change migratory pathways to migrate closer to suitable habitat.

"Climate change is also opening up the Arctic to threats such as mining and tourism, and we must make sure we protect key places for all Arctic species, including these amazing migratory birds," Ms Wauchope said.

UQ's Associate Professor Richard Fuller from the ARC Centre of Excellence for Environmental Decisions (CEED) said most migratory populations followed well-defined migratory routes.

"This makes shorebirds an excellent group to investigate how climate change might impact breeding grounds and conservation actions that could address these impacts," Associate Professor Fuller said.

The research modelled the suitable climate breeding conditions of 24 Arctic shorebirds and projected them to 2070.
The researchers also examined the impact on Arctic birds of the world's last major warming event about 6000 to 8000 years ago.

"Climatically suitable breeding conditions could shift and contract over the next 70 years, with up to 83 per cent of Arctic bird species losing most of their currently suitable area," Ms Wauchope said.

"This far exceeds the effects of the last major warming event on Earth, but genetic evidence suggests that even then the birds struggled to deal with the warming."

She said that suitable climatic conditions are predicted to decline fastest in the areas with most species (western Alaska and eastern Russia), where Arctic birds are already becoming vulnerable to the "shrubification" of the tundra, and predators such as red foxes moving north.

The study, *Rapid climate-driven loss of breeding habitat for Arctic migratory birds,* was also co-authored by colleagues at the Australian Antarctic Division, Tasmania; University Centre in Svalbard, Norway; Akvaplan-niva, Norway; Russian Academy of Sciences in Moscow; Aarhus University, Denmark; and the US Fish and Wildlife Service in Alaska, US.

It was funded by an ARC Linkage project grant and CEED.

Media: <Hannah.wauchope@uq.connect.edu.au> +61 (0)435 006 358; Dr Richard Fuller, <r.fuller@uq.edu.au> +61 (0458 353 102).

Story Source:
The above post is reprinted from materials from the **University of Queensland** 20 July 2016.
Note: Materials may be edited for content and length

Pied Oystercatchers – are observations of their irides useful in sex determination in the field?

Margaret Rowe, Clive Minton
and
all the VWSG members who assisted in obtaining data, including the photographs

Introduction

The irides (plural of iris) of Pied Oystercatchers during the first year of life are brownish. In each iris a black 'fleck' gives the appearance of a 'distended' pupil. This 'fleck', is not part of the pupil, but part of the iris which appears to lack the brown or orange/red pigment. For this study, it will be referred to as the 'unpigmented area'. In young birds, the area lacking pigment is larger than the area of the pupil. It appears blurred at the edges and is always situated towards the bill.

Typical eye during first year of life

Typical eye in 2nd or 3rd year of life

During the first 3 or 4 years of the bird's life this unpigmented area slowly diminishes, and the pigment of the iris changes to orange/red and then progressively becomes more intense in colour. In some adult birds the irides appear to be fully pigmented, giving the appearance of a completely round pupil. In others, the size of the unpigmented area varies from very small to approximately the area of the pupil.

Examples of irides of adults designated as not fully pigmented


Examples of irides of adults designated as fully pigmented

An Alaskan study of the Black Oystercatcher[1] suggests that the irides of adult male Oystercatchers are fully pigmented, while in females a black 'fleck' remains in the iris for life. If this applies for Pied Oystercatchers in Victoria, it will assist us to sex the birds in the field.

This study of adult Pied Oystercatchers in Victoria is an attempt to examine this question and the related question of whether the area of the unpigmented 'fleck' continues to diminish as a bird ages.

Method

During VWSG fieldwork on Victorian coasts from 2012 to 2015, the eyes of Pied Oystercatchers were photographed while in the hand. Each image included an eye and the leg flag displaying the alpha-numeric code.

The images of the eyes of 201 adult birds were scored using two categories: 1. Irides fully pigmented (either fully complete pigmentation or very nearly so) and 2. Irides not fully pigmented.

For each bird, age, bill length, and metal band number were available on catch sheets that had been completed in the field. Data from previous catches of a bird were searched from the Banding Database for further information on minimum or actual ages.

It has been shown that bill length is related to sex. While the mean bill length of males is shorter than that of females, there is considerable overlap in the range of bill lengths of the sexes. In order to study possible sexual dimorphism, birds with bill lengths ≤72.1mm were regarded as male and those with bill lengths ≥79.1mm as female. As a result, 71 of the 201 adult birds with bill lengths between these limits were removed from this part of the study. One hundred and thirty birds remained, 77 almost certainly males and 53 almost certainly females. The selection of these ranges of bill lengths was based on an earlier study of Victorian Pied Oystercatchers[2]. It is recognised that this method of separation of the sexes is not 100% accurate[2].

The 130 birds were treated as two groups – one group of 56 birds with fully pigmented irides and the other of 74 birds in which the irides were not fully pigmented. The percentage of each sex was calculated for each group.

In an attempt to look for a possible increase in pigmentation of the irides as birds age from age 5 onwards, percentages of birds with fully pigmented irides were calculated for various age groups. All 72 birds of actual age or minimum age of 5 or more were included, regardless of sex.

Results
Of the 56 birds of 'known sex' with fully pigmented irides, 84% were male.

Birds of 'known sex' with fully pigmented irides (n= 56)	Males (n=47)	Females (n=9)
Percentage	84	16

Of the 74 birds of 'known sex' with irides not fully pigmented, 40% were male.

Birds of 'known sex' with irides not fully pigmented (n= 74)	Males (n=30)	Females (n=44)
Percentage	40	60

Of these 72 birds of actual or minimum age 5 or more, 61% had fully pigmented irides. Of the youngest 35 birds, 46% had fully pigmented irides. Of the oldest 35 birds, 75% had fully pigmented irides. All 5 of the oldest birds, had fully pigmented irides.

	Age range	**Percentage with fully pigmented irides**
All birds of 'known age' (n=72)	5 to 28+	61
35 youngest 'known age' (n=35)	5 to 9	46
35 oldest 'known age' (n=35)	9 to 28+	75
The 5 oldest birds	18+ to 28+	100

Implications for field work
While fully pigmented irides are much more common in male birds than in females, this characteristic cannot be used in the field as an accurate indication of sex. However, a bird with fully pigmented, or almost fully pigmented, irides is very likely to be an adult male.

While the irides of some adult birds appear to be fully pigmented by age 5 or 7, it appears that the extent of orange/red pigmentation of the irides can continue to increase over a longer period. The process usually occurs more rapidly in males than in females.

A study like this could perhaps be improved by separating the sexes genetically, and applying a grid to the images to measure the ratio of the area of the 'fleck' to that of the iris.

Thanks to all those members of VWSG who assisted in the collection of data for this study. Particular thanks are due to the photographers.

References:
Guzzetti, Brian M., Sandra L. Talbot, David F. Tessler, Verena A. Gill, and Edward C. Murphy. Secrets in the eyes of Black Oystercatchers: a new sexing technique. *J. Field Ornithol.* 79(2):215–223, 2008

Kraaijeveld-Smit, F., C. Minton, R. Jessop, & P. Collins. 2001. Sexing criteria, age structure, biometrics, and moult of the Pied Oystercatcher, *Haematopus longirostris* in Victoria. *The Stilt* 40, 29-37.

Another long distance movement of a Hooded Plover

Jeff Campbell

Following on from the report in last year's *Bulletin* (Number 38) of a colour flagged fledged Hooded Plover moving some 300 to 440 km in 2015 another colour flagged fledgling has been seen after moving approximately 300 to 350 km. The bird was banded and flagged Green/Orange Yellow/Metal (Green/Orange/Yellow/metal) as a chick on 22 January 2016 by Wendy and David Trudgen on a small beach north of Pethers in Canunda National Park and seen on Yilki Beach in Encounter Bay near Victor Harbour on 29 July 2016. The bird was seen again at the same location, and photographed by Debbie Prestwood, on 30 July amongst a flock of 10 Hooded Plover and seen and photographed again on 4 August amongst a flock of 15. This movement would appear to be the second longest known for this species and once again in an easterly direction to another site on the Fleurieu Peninsula, only approximately 10 km from the previously reported long distance movement. Thanks to Elizabeth Steele-Collins for alerting us to this and the previous sighting.

GOYM Yilki Beach 30-7-16 *(Photo Debbie Prestwood*)

In a postscript to the sighting reported in the previous *Bulletin* it is remarkable that the bird which travelled to the Sir Richard Peninsula was seen, and photographed, by DEWNR employee Barry Schriever, on Piccaninnie Ponds Beach in a group of four birds, some 200 metres from the Victorian border on 12 November 2015. This location is only around five kilometres from the natal and banding site and means that the bird had made another journey of between 300 and 440 km, with a total distance flown of at least 600 to 880 km!

OWYM Sir Richard Peninsula 21-7-15 *(Photo Rob Brinsley*)

Errata: In the last years *Bulletin* (Number 38) the flagging code for the bird which travelled to the Sir Richard Peninsula was given as Orange/White Orange/metal (OWOM). This should have been Orange/White Yellow/metal (OWYM). My apologies for the error.

Away with the Dotterels

Kailash Willis

In early September last year I found myself heading to New Zealand to do some environmental monitoring for the Department of Conservation. This is generally the same time of year that the last of the Double-banded Plover depart Australia heading for their breeding grounds in New Zealand.

While the Double-banded Plover (known as the Banded Dotterel in New Zealand) may be at the shorter end of the spectrum when it comes to distances travelled by migratory waders it is still unique in a number of ways. Unlike most migratory waders instead of heading north in pursuit of an eternal summer it chooses to spend its winters in southern Australia. There is however another interesting factor, while the Double-banded Plover can be found from the coast to the mountains of both the North and South Islands of New Zealand. Banding studies have shown that most of the birds that reach Australia come from the Mackenzie Basin and high altitude areas of the South Island. Most coastal breeding plovers are sedentary and those in the North Island overwinter in coastal estuaries.

So it was only right that one of the first species I encountered after leaving Christchurch was the Double-banded Plover. Heading up to Arthurs Pass one of the first alpine lakes you come across is Lake Lyndon. Here despite overnight snow Double-banded Plover were quite at home catching fish from the frigid water and had even started nesting.

Double-banded Plover fishing (Photo Kailash Willis)

Like many birds in New Zealand the Double-banded Plover is quite approachable compared to similar species such as the Red-capped or Hooded Plover in Australia. While this makes observing natural behaviour much easier a long lens is still necessary for photography. This lack of fear is most likely due to having evolved in the absence of mammal predators which is also why so many of New Zealand's native birds have been severely affected by the introduction of rats, stoats and possums.

Double-banded Plover on its nest in the snow (Photo Kailash Willis)

One of the main reasons that the Double-banded Plover has not been so badly affected by the introduction of predators is that it is a generalist. It can be found near alpine lakes, braided rivers, estuaries and coastal beaches throughout the north and south island as well as offshore islands.

Like most people who visit New Zealand I was excited to get down to Stuart Island as it is the easiest places to see the Southern Brown Kiwi. And while I wouldn't say that watching this unusual bird feed under a full moon amongst the sand dunes behind Masons bay wasn't a highlight I had another species in mind. The southern subspecies of the New Zealand Dotterel is found only on Stuart Island. It is larger and darker than its northern subspecies and breeds above the tree line on the mountain tops rather than coastal areas. It is one of the most threatened wader species in New Zealand with its population dropping to around 60 individuals in 1992 before cat and rat control at their breeding sites led to an increase to 250 birds in 2012. The population also has an uneven sex ratio as most predation from cats occurs at night when the males are incubating resulting in more females. This had led to female pairs establishing and this results in large clutches of unfertilised eggs. Recently the population has again decreased with winter counts recording around 150 southern New Zealand Dotterel at flocking sites. Another threat has also recently been identified, White-tailed Deer which have been caught, on motion activated cameras set up to monitor nests, eating dotterel eggs.

So to make the most of the Christmas break, after spending a few days photographing Double-banded Plover, Oystercatchers and Kiwi near Mason's Bay, we decided to head up Mount Rakeahua in search of the New Zealand Dotterel. To take advantage of the best light for photography in the early morning and late afternoon we decided to camp near the top. This meant only taking the basic necessary camera kit (roughly 10kg of gear) so I had room for all the camping essentials. After a good few hours of uphill climbing we reached the top of Mount Rakeahua to 360 degree views from the snow - capped peaks on the South Island to Masons Bay and Codfish Island. Before setting up camp I decided to have a quick scout around for the dotterels. Several hours later I found myself retracing my steps having covered pretty much all the alpine terrain without spotting a single dotterel. So it was with much relief when I finally spotted one flying in while setting up camp in the most sheltered spot we could find.

Only later on did I find out that many of the dotterels fly down to nearby inlets to feed at low tide. Not long after spotting the first one I came across another adult with three chicks which were only a few weeks old, then another recently fledged juvenile. Most of the dotterels had colour bands as the populations are now closely monitored. The next morning I was up early again and quickly located the three chicks with their ever diligent mother watching over them. Despite a constant steady breeze and cloud whipping around us they were happily feeding and only occasionally seeking warmth from their mother. Once again I was amazed at how confiding birds in New Zealand can be. By simply sitting still the dotterel chicks were soon feeding all around me sometimes approaching within a few metres. Unfortunately all too soon it was time to leave and as we headed back to the main island and work I was left hoping that next time I get a chance to visit this amazing part of the world that the dotterels will still be there making their flights to the hilltops to breed.

New Zealand Dotterel chicks at Mount Rakeahua (Photos by Kailash Willis)

Report on visit to King Island November 26 to December 3 2015

Clive Minton

Population Count

Ruddy Turnstone locations on the west coast of King Island were visited and counted on the first day (26 November). As usual, Seal Bay – just to the east of the southwest tip of the island – was also counted because experience has shown us that there is a large interchange of birds between this and the Surprise Bay/Denby Bay areas, depending upon weather conditions.

The total number of birds counted is below the unusually high figure of 754 for November 2014 and above the exceptionally low figure of 546 in November, 2013 (when at least some birds in the Whistler area must have been missed). The figure is close to the total recorded in March 2014 and March 2013, and a little lower than the adjusted figure (i.e. gaps filled in) for Feb 2015. It appears that the rapid decline in the Turnstone population noted during the earlier years of our visits (2007-2012) may have now slowed.

Geolocators

Altogether we retrieved a record 20 geolocators, 17 deployed in February 2015 and three from March 2014. Our previous best total for a visit was 11.

All 18 new geolocators which we took to King Island on this visit were used up by being redeployed on birds from which geolocators were removed.

Percentage Juveniles

There were only two juveniles in the total of 120 Ruddy Turnstones caught. This suggests that 2015 was an exceptionally poor breeding year for turnstones in the arctic. This is in line with information provided to us by the Russians and also early catch data on other species. Turnstones seem to be particularly prone to having occasional years with almost complete breeding failures. In the previous nine years for which we have percentage juvenile data from King Island there were three such breeding failures, corresponding to the 2006, 2008 and 2012 arctic breeding seasons (all with percentage juveniles less than 1.2%). In most other years breeding success was fairly constant (ranging between 13.4 and 17.9 % juveniles). The only exception was the bonanza figure of 30.6% juveniles following the 2014 arctic summer.

It is not clear why turnstones should exhibit such extreme variation in breeding success. A similar pattern is also shown by the Sanderling. These species both breed in the very high arctic and it may be that when poor weather occurs there during the breeding season it is so bad that virtually no eggs/chicks can survive.

Deakin University Avian Disease Studies

Comprehensive blood and faecal samples were obtained on all turnstones by Simeon Lisovski and his field assistant Jay Hutchinson. It is encouraging that of the 17 geolocators put on in February 2015 and retrieved during this visit, there were almost equal numbers (9:8 respectively) which had been placed on birds which were treated with the anti-helminth medicine compared with those put onto untreated controls. The migration data downloaded from the geolocators will now be examined in detail to see whether there are any migration differences in these two groups of birds. The hypothesis is that the treated birds may have been able to gain weight before and during migration more successfully than untreated birds and hence may have been able to make a more efficient migration.

Saltmarsh Presentation

Vishnu Prahlad, a lecturer at UTAS supported by John Elders, a PhD student, has been studying saltmarsh wetlands throughout Tasmania. Vishnu and John gave a presentation on their work and this was attended by a number of members of the VWSG. Vishnu and John visited saltmarsh wetlands at Yellow Rock, Ettrick, Tuffu Terraces, Stokes Point, Fraser River, Blowhole Creek and Sea Elephant Estuary. The mapping work includes identification of fauna and flora and wildlife, particularly birds. There was also discussion of how the wetlands are changing as sea level rises due to climate change. The island members of the VWSG and KINRMG Inc. have volunteered to assist Vishnu to monitor the wetlands and provide him with data.

Acknowledgements
The VWSG thanks the late Nigel and Mavis Burgess for making the original invitation to us to visit King Island in 2007 and for their support over many years. Margaret Bennett kindly looks after our equipment on the island between visits, performs pre-trip reconnaissance, accommodates one team member and assists with airport and vehicle logistics. Jenny Marshall most generously vacates her large house so that we can be based there in comfort and Graham and Margaret Batey kindly allow two of our team members to sleep at their house. The Tasmanian Parks and Wildlife Services are again thanked for loaning us a trailer and we enormously thank Angus Roberts, the master of the SeaRoad Ferry, for again bringing over and returning Clive's vehicle and all the main catching and processing equipment.

The Tasmanian Wildlife Authorities are also thanked for providing banding and ethics approval. Banding is carried out under the auspices of the Australian Bird and Bat Banding Scheme in Canberra.

Deakin University are also thanked for providing the finance for the purchase of geolocators.

Table 1. Ruddy Turnstone Counts on King Island 26.11.15 to 3.12.15

	Number of Ruddy Turnstone		
Location	**26.11.15 – 3.12.15**	**23.11.14 - 1.12.14**	**22.11.13**
Seal Bay	150	0	0
Stokes Point	60	74	33
Last gate at Surprise Bay to Stokes Bay	10	32	32
Surprise Bay/Denby Bay	1	182	125
Dripping Wells	60	55	60
Burgess Bay (Currie)	90	80	69
Manuka (South, Central, & North)	127	145	88
Porky Beach	0	20	37
Unlucky Bay	13	20	11
Whistler Point/South Whistler/ Duck Bay/Green Island	95	112	36
The Springs	25	34	55
Total	**631**	**754**	**546**
Coverage of the whole of the west coast of King Island.			

VWSG King Island Trip 10 to 17 February 2016

Penny Johns

Population count

Table 1 shows the number of Ruddy Turnstone counted at each of the usual locations along the whole of the west coast of King Island. The main count was made on February 10 but some adjustments were made later in the light of further information.

The total count of 597 is the lowest yet made in the February/March/April period. This is the tenth year of counts since they commenced in March 2007.

The lower figure for 2016 is consistent with the extremely low number of juveniles produced in the 2015 arctic breeding season. If the usual proportion of juveniles had been present (11%) then this would have increased the population to around 560. This would then have been almost the same as the revised figure of 670 for February 2015.

It would appear that there is still a continuing decline in the numbers of Ruddy Turnstone taking place, although the rate of decline may now not be quite as fast as it was five or more years ago.

Percentage Juveniles

The arctic summer of 2015 was clearly a disastrous breeding season for Ruddy Turnstone. Only one juvenile was caught in 75 birds (1.3%).

Geolocators

The team just managed to catch enough Ruddy Turnstone to deploy all of the 60 geolocators.

Deakin University Studies

No marked differences were found in the geolocator tracks of Ruddy Turnstone which had been treated with anti-intestinal parasite medication in February 2015. However it will need the data we can retrieve from geolocators deployed this year before we can be certain of the results of this experiment. The objective is to see whether freeing Ruddy Turnstone from intestinal parasites when they are putting on weight before and during migration leads to any increase in the efficiency of the northward migration or in an increased survival in birds.

No gulls were cannon netted this year. Data from previous years suggest that gulls are not playing a key role in the annual cycle of the avian viruses which are present in significant quantities in the Ruddy Turnstone of King Island.

Table 1. Counts of Ruddy Turnstone on King Island, February 10-17, 2016

West Coast	**Feb 2016**		**Feb 2015**	**Mar 2014**	**Mar/Apr 2013**	**April 2011**	**Mar/Apr 2010**	**1985***
Seal Bay	56		77	43	12	n.c.	60	
Stokes Point	40		49	62	60	30	20	
Stokes Point to Surprise Bay	29		66	52	12	70	110	
Surprise Bay (including Denby Beach)	90		71	106	80	75	105	
Dripping Wells	65		30	45	75	62	65	
Ettrick Beach	0		0	0	0	0	0	60
Currie Golf Course (Burgess Bay)	65		66	42	75	85	90	330
Currie Harbour	0		0	26	20	15	25	
Dirty Bay	0		0	?	0	13	30	
Manuka - South	6}		24}	40}	65}	45}	10}	
Manuka - Central	58}	97	84}	50}	70}	50}	150}	67
Manuka – North (Whalebone)	33}		63}	60}	30}	60}	15}	
South Porky	35		38	0	25	9	0	28
Unlucky Bay	1		19	15	25	48	10	20
North of Bungaree Creek	0		0	0	n.c.		0	35
Duck Bay/Green Island Point/South Whistler	53		60	35	70	70	115	260
Whistler Point	42		0	0	0	4	40	106
The Springs	24		23	28	26	50	45	
Total	**597**		**670**	**604**	**645**	**686**	**890**	

* Count by D. B. Whitchurch

HAVE YOU SEEN?

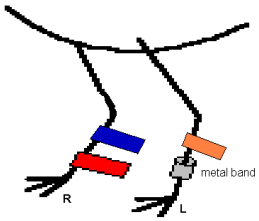
By Roz Jessop

Always read flag combinations from top to toe

RED-CAPPED PLOVER WITH ENGRAVED LEG-FLAGS?
In 2008 Deakin University commenced a banding study of Red-capped Plover at Cheetham Wetlands and Truganina Swamp, west of Melbourne – near Altona and Altona Meadows. Dr Mike Weston and students have flagged over 100 Red-capped Plover on the upper leg with an orange leg-flag engraved with two letters. They would greatly appreciate any sightings you may make. Masked Lapwings have also been marked with engraved flags at Phillip Island.

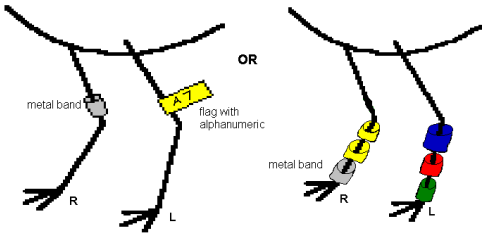
Please send details (including date and place) to
Dr Mike Weston, Deakin University,
221 Burwood Hwy, Burwood, 3125.
Email: mike.weston@deakin.edu.au
Phone: (+61 3) 9251-7433

HOODED PLOVER, OYSTERCATCHER OR GREY WADER WITH FLAGS?

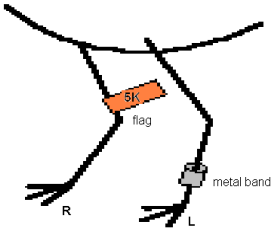


Hooded Plover with colour bands or flags?
Phillip Island Nature Park has an ongoing study colour flagging Hooded Plover chicks on Phillip Island. Any sightings of colour marked or alpha numeric flagged Hooded Plover should be sent to Jon Fallaw jfallaw@penguins.org.au or flag sightings for SE of South Australia to twinpeppercorns@gmail.com

Pied and Sooty Oystercatchers with colour bands or flags?
Any sightings of Pied and Sooty oystercatchers with colour bands or flags should be sent to David Trudgen
wandtrudgen@gmail.com



Beach nesting bird sightings can also be reported through a membership of the MY BEACH BIRD PORTAL https://portal.mybeachbird.com.au/



"Grey" waders and terns with engraved or plain flags or colour bands? Any sightings of grey waders or terns with engraved flags or plain colour flags should be reported to Joris Driessen
flagging@awsg.org.au

Wader Breeding Success in the 2015 Arctic Summer, based on Juvenile Ratios of birds which spend the non-breeding Season in Australia

Clive Minton, Roz Jessop & Chris Hassell

Introduction

Wader populations in many of the Flyways around the world are closely monitored. There is a strong downward trend in many populations, particularly over the last 20 years (Amano *et al.* 2010, Wilson et al. 2011, MacKinnon *et al.* 2012). Populations will only change if there are changes in one or more of the three key parameters – reproductive rate, survival rate or age of first breeding. If population changes are to be explained ongoing measurements of the above need to be made.

For the last 38 years in south-east Australia and 18 years in north-west Australia the main catching programs of the Victorian Wader Study Group and the Australasian Wader Studies Group respectively have been oriented to obtaining annually an estimate of the proportion of young birds in the population of each of the main migratory wader species during the non-breeding season. The proportion of juveniles in catches, albeit some six months on average after these birds have first fledged, is taken as a proxy for breeding success. This method of gaining an estimate of reproductive success is used because it is impractical to obtain comprehensive fledging rate data on the breeding grounds, particularly for a range of species on an annual basis and over an extended period of years.

Each year since 2000 the results of the 'percentage juvenile' monitoring have been published in Arctic Birds Bulletin and (or) on the Arctic Birds website, as well as in the AWSG journal Stilt (Minton *et al*. 2000, Minton Jessop & Hassell 2016). Earlier data, going back to the 1978 breeding season for some species in south-east Australia, was published in a previous paper (Minton *et al.* 2005). There are now, therefore, breeding success measurements for a range of species going back 38 years in south-east Australia and 18 years in north-west Australia.

This paper gives the results obtained during the 2015/2016 non-breeding season in Australia. These indicate the apparent breeding success of a wide range of wader species during the 2015 northern hemisphere wader breeding season.

Methods

Throughout the period of monitoring a standard method of collecting data has been used so that results can be comparable from year to year and for each species/region. Details have been provided each year (Minton *et al*. 2000, 2016), and as the same methods were used in the 2015/2016 season they are not repeated here in detail. As usual, only birds caught by cannon-netting are included. Samples were obtained only when it is considered that virtually all adult birds and juvenile birds were present in the study area, and therefore were available for sampling.

Note, again, that the breeding success index obtained refers to the proportion of juvenile birds present in the population some six months after fledging. Actual breeding success will have been higher. Mortality is typically quite high in all species soon after fledging, especially if a long-distance migration has to be undertaken in this period. Since, however, the key information required in this study is comparative data (year-to-year and species-to-species variations, long-term trends) it does not matter if the figures are not the 'actual' reproductive rate. It can be reasonably expected that there are unlikely to be marked year-to-year variations in mortality between the date of fledging and the middle of the subsequent non-breeding season some six months later.

Results

The 2015/2016 data is presented in the usual format in Tables 1 – 4.

In south-east Australia results are given for the usual seven main study species (Table 1). The Red Knot sample was again small and, this year, Sanderling also proved particularly hard to catch. Nevertheless the outcomes of the breeding season were especially clear, with five of the seven species having particularly poor breeding success. On Curlew Sandpiper and Ruddy Turnstone there was an almost complete breeding failure. By contrast, Bar-tailed Godwit had a good breeding outcome and Red Knot an especially good breeding success.

Good data was collected on all the usual main wader study species in north-west Australia (Broome and 80 Mile Beach). Additionally, this year, good samples were obtained of seven additional species which are not able to be caught annually for breeding success estimates (Table 2). Breeding success

rates were extremely low for many species, with only three out of seventeen species monitored being rated 'good' or 'very good' – Broad-billed Sandpiper, Oriental Plover and Eastern Curlew. As in south-east Australia, Curlew Sandpiper and Ruddy Turnstone had almost total breeding failures, and in this region Red Knot also.

Discussion

The 2015 northern hemisphere breeding season was clearly the worst recorded so far in wader populations which migrate to Australia. Most of the high-Arctic breeding species had an almost total breeding failure. The poor results, however, seemed to occur almost throughout the northern hemisphere breeding range. Even Greater Sand Plover, mainly nesting in Mongolia and northern China, had their second lowest breeding success recorded in 18 years of monitoring (Table 4). For Curlew Sandpiper in north-west Australia and in south-east Australia it was the lowest ever result (Table 3). It was noticeable that, unusually, Sharp-tailed Sandpiper fared slightly better than Red-necked Stint and Curlew Sandpiper.

The only exceptions to the widespread disastrous 2015 breeding season were Bar-tailed Godwit in north-west Australia, which had an average result, and Bar-tailed Godwit and Red Knot in south-east Australia which were classed as 'good'/'very good' respectively. The latter two of these breed further east than all the other species, with the Red Knot spending the breeding season in the far north-east of Siberia in Chukotka and the Bar-tailed Godwit in Alaska. Presumably whatever unfortunate combination of weather conditions and predation levels which caused the markedly unsuccessful breeding did not extend to those regions.

One of the important outcomes of these long data series of the percentage of juveniles in wader populations in the non-breeding areas in Australia is that there is no apparent downward trend in annual productivity (Tables 3 and 4 and Minton et al. 2005). This is somewhat surprising given the marked downward trajectory of many of these wader populations. It suggests that the decrease in population levels is entirely the result of reduced survival rates. This is logical given that the population decreases seem to be closely linked with extensive losses of intertidal feeding habitat at the critical migratory stopover locations for most species in the Yellow Sea. The apparent lack of a trend in breeding success rate also suggests that this parameter is not density dependent on the breeding grounds for these wader populations.

Conclusion

It is particularly unfortunate that there should have been such a marked and widespread poor breeding outcome in 2015 for most of the wader populations which spend their non-breeding season in Australia. Given the downward pressures on many of these populations what is ideally needed is above average breeding output, preferably over an extended period. Let us hope that, in particular, the 2016 reproductive rates return to normal or, preferably, above normal levels. The VWSG and AWSG will continue their annual monitoring programs.

Acknowledgements

Greatest thanks are, as always, owed to the fieldwork teams of VWSG and AWSG which have persevered over many months each non-breeding season to obtain the necessary catch samples. This requires between 30 and 50 days of fieldwork by a large (15-25 people) team on each occasion, often working in less than comfortable climatic conditions. Repeated attempts sometimes have to be made to fill particularly difficult slots in the required spectrum of data.

Thanks are also due to the various Parks authorities in Victoria, Western Australia, South Australia and Tasmania who granted the necessary ethics and scientific research permits, as well as the Australian Bird and Bat Banding Scheme in Canberra.

Chris Hassell was again funded by the 2014 Spinoza Prize to Theunis Piersma from the Netherlands Organisation for Scientific Research (NWO).

References

Amano, T., Szekely, T., Koyama, K., Amano, H., and Sutherland, W. J. (2010). A framework for monitoring the status of populations: an example from wader populations in the East Asian–Australasian Flyway. *Biological Conservation* 143(9), 2238–2247. doi:10.1016/j.biocon.2010.

Arctic Birds website: http://www.arcticbirds.net/doc.html and http://www.arcticbirds.net/docs/minton_AB2014.pdf.

MacKinnon, J., Verkuil, Y. I., and Murray, N. J. (2012). IUCN situation analysis on East and Southeast Asian intertidal habitats, with particular reference to the Yellow Sea (including the Bohai Sea). Occasional Paper of the IUCN Species Survival Commission No. 47. International Union for Conservation of Nature, Gland, Switzerland, and Cambridge, UK.

Minton, C., R. Jessop, P. Collins & K. Gosbell. 2005. Monitoring Wader Breeding Productivity by the proportion of first year birds in wader populations in S.E. Australian non-breeding areas. Pp. 73-85. *In:* Straw, P. (Ed.) Status and Conservation of Shorebirds in East Asian-Australasian Flyway. Proceedings of the Australian Shorebirds Conference, Canberra, Dec. 2003. IWSG Special Publication 17 and Wetlands International Global Series 18.
Minton, C., R. Jessop, P. Collins & C. Hassell. 2000. 1999 Arctic breeding success from Australian perspective. *Arctic Birds* 2: 19-20.
Minton, C., R. Jessop & C. Hassell. 2016. Wader breeding success in the 2014 Arctic summer, based on juvenile ratios of birds which spend the non-breeding season in Australia. *Stilt* 68: 46-48.
Wilson, H. B., Kendall, B. E., Fuller, R. A., Milton, D. A., and Possingham, H. P. (2011*a*). Analyzing variability and the rate of decline of migratory shorebirds in Moreton Bay, Australia. *Conservation Biology* 25(4).

Table 1. Percentage of juvenile (first year) waders in cannon-net catches in south-east Australia 2015/2016.

Species	No. of catches		Total caught	Juveniles		Long term median* % juvenile (years)		Assessment of 2015 breeding success
	Large (>50)	Small (<50)		No.	%			
Red-necked Stint *Calidris ruficollis*	7	7	1904	115	6.0	16.0	(37)	Poor
Curlew Sandpiper *C. ferruginea*	1	5	206	4	1.9	10.0	(36)	Very Poor
Bar-tailed Godwit *Limosa lapponica*	0	1	30	8	26.7	18.0	(26)	Good
Red Knot *C. canutus*	0	1	15	15	100	62.5	(19)	Very Good
Ruddy Turnstone *Arenaria interpres*	1	15	305	7	2.3	9.3	(25)	Very Poor
Sanderling *C. alba*	0	1	29	2	6.8	12.2	(24)	Poor
Sharp-tailed Sandpiper *C. acuminata*	3	3	459	41	8.9	14.8	(34)	Poor

All birds cannon-netted in the period 2 November to 25 March except Sharp-tailed Sandpiper and Curlew Sandpiper to end February only and some Ruddy Turnstone and Sanderling to early April and one Sanderling catch in late April (2015) .*Does not include the 2015/2016 figures.

Table 2. Percentage of juvenile (first year) waders in cannon-net catches in north-west Australia in 2015/2016.

Species	No. of catches		Total caught	Juveniles		Assessment of 2015 breeding success
	Large (>50)	Small (<50)		No.	%	
Great Knot *Calidris tenuirostris*	8	4	1,642	93	5.7	Poor
Bar-tailed Godwit *Limosa lapponica*	4	6	194	20	10.3	Average
Red-necked Stint *C. ruficollis*	4	4	487	54	11.1	Poor
Red Knot *C. canutus*	1	4	109	3	2.7	Very Poor
Curlew Sandpiper *C. ferruginea*	2	4	281	2	0.7	Very Poor
Ruddy Turnstone *Arenaria interpres*	1	4	84	1	1.2	Very Poor
Sanderling *C. alba*	0	5	7	0	-	Very Poor
Grey Plover *Pluvialis squatarola*	0	2	18	1	7.1	Below Average
Non-arctic northern migrants						
Greater Sand Plover *Charadrius leschenaultii*	5	5	523	55	10.5	Poor
Terek Sandpiper *Xenus cinereus*	0	10	131	12	9.2	Below Average
Grey-tailed Tattler *Heteroscelus brevipes*	3	7	380	34	8.9	Poor
Oriental Plover *C. veredus*	0	5	32	14	44	Very Good
Black-tailed Godwit *L. limosa*	1	2	94	8	8.5	Below Average
Oriental Pratincole *Glareola maldivarum*	1	2	92	24	26.0	Average
Common Greenshank *Tringa nebularia*	0	3	52	4	7.7	Below Average
Eastern Curlew *Numenius madagascariensis*	0	2	45	5	11.1	Good
Broad-billed Sandpiper *C. falcinellus*	0	5	30	15	50.0	Very Good

All birds cannon-netted in period 1 November to mid-March

Table 3. Percentage of juvenile birds in wader catches in south-east Australia 1998/1999 to 2015/2016.

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Average (17yrs)
Ruddy Turnstone *Arenaria interpres*	6.2	29	10	9.3	17	6.7	12	28	1.3	19	0.7	19	26	10	2.4	38	17	2.3	14.7
Red-necked Stint *Calidris ruficollis*	32	23	13	35	13	23	10	7.4	14	10	15	12	20	16	22	17	19	6.0	17.5
Curlew Sandpiper *C. ferruginea*	4.1	20	6.8	27	15	15	22	27	4.9	33	10	27	(-)	4	3.3	40	5.1	1.9	16.5
Sharp-tailed Sandpiper *C. acuminata*	11	10	16	7.9	20	39	42	27	12	20	3.6	32	(-)	5	18	19	16	8.9	18.5
Sanderling *C. alba*	10	13	2.9	10	43	2.7	16	62	0.5	14	2.9	19	21	2	2.8	21	14	6.8	15.0
Red Knot *C. canutus*	(2.8)	38	52	69	(92)	(86)	29	73	58	(75)	(-)	(-)	78	68	(-)	(95)	(100)	(100)	58.1
Bar-tailed Godwit *Limosa lapponica*	41	19	3.6	1.4	16	2.3	38	40	26	56	29	31	10	18	19	45	15	26.7	23.9

All birds cannon-netted between 15 November and 25 March, except Sharp-tailed Sandpiper and Curlew Sandpiper to end February only and some Ruddy Turnstone and Sanderling to early April and one Sanderling catch in late April (2015). Averages (for previous 17 years) exclude figures in brackets (small samples) and exclude 2015/2016 figures

Table 4. Percentage of first year birds in wader catches in north-west Australia 1998/1999 to 2015/2016

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Average (17yrs)
Red-necked Stint *Calidris ruficollis*	26	46	15	17	41	10	13	20	21	20	10	17	18	24	15	19	10	11.1	20.1
Curlew Sandpiper *C. ferruginea*	9.3	22	11	19	15	7.4	21	37	11	29	10	35	24	1	1.9	23	18	0.7	17.6
Great Knot *C. tenuirostris*	2.4	4.8	18	5.2	17	16	3.2	12	9.2	12	6	41	24	6	6.6	5	6	5.7	11.6
Red Knot *C. canutus*	3.3	14	9.6	5.4	32	3.2	(12)	57	11	23	12	52	16	8	1.5	8	13	2.7	16.9
Bar-tailed Godwit *Limosa lapponica*	2.0	10	4.8	15	13	9.0	6.7	11	8.5	8	4	28	21	8	7.6	17	5	10.3	10.8
Non-arctic northern migrants																			
Greater Sand Plover *Charadrius leschenaultii*	25	33	22	13	32	24	21	9.5	21	27	27	35	17	19	28	21	20	10.5	23.4
Terek Sandpiper *Xenus cinereus*	12	(0)	8.5	12	11	19	14	13	11	13	15	19	25	5	12	15	12	9.2	13.6
Grey-tailed Tattler *Heteroscelus brevipes*	26	(44)	17	17	9.0	14	11	15	28	25	38	24	31	20	18	16	19	8.9	20.5

All birds cannon-netted in the period 1 November to mid-March. Averages (for previous 17 years) exclude figures in brackets (small samples) and exclude 2015/2016 figures

VALE: Rosie Davidson

Rosie passed away 21 November 2015. Below is a transcript of the eulogy given by Dr Clive Minton at the formal celebration of her life.

I am sure everyone here today is well aware that Rosemary had a lifelong interest in "life outdoors", with a special interest in natural history, particularly plants and birds. It was the latter which first brought us into contact, in 1991, and which, during the last 25 years, has given us such shared joys.

'Us' is the Victorian Wader Study Group and today I am speaking on behalf of all our members Australia-wide. From our first meeting Rosie participated actively in our fieldwork activities-banding and counting waders (shorebirds). This was not only on her usual local patch' –Corner Inlet –but also on forays further afield to north-west Australia (Broome and 80 Mile Beach), the south-east of South Australia and King Island, Tasmania.

It was not long after our first meeting that her extremely generous nature came to the fore and we were invited to base ourselves at Rosie and Alistair's lovely house at Yanakie whenever we were operating in the area. Yanakie-based visits have become one of the most attractive and well attended activities of each VWSG year and have enormously helped to bind the team into a happy, stable, efficient and enjoyable group. It is typical of Rosie's kindness and thought for others that when we had our last phone conversation, last Friday, she was repeatedly emphasising that she wanted us to continue to use the Yanakie house as our Corner Inlet base in the future. I assured her that nothing would please us more, and, subject to her family's approval, this is what we will do. To me, personally, the view from the living/dining room is the best in Victoria and every thought of the Yanakie house brings back such happy memories.

Rosemary was Treasurer and Secretary of the VWSG for 22 years. Her quiet efficiency and excellent organisation were recognised and appreciated by everyone. Her contribution to the organisation and smooth running of the AGM was outstanding, from arranging and shopping for food and its preparation together with Pat, to the agenda items for the meeting. She was meticulous in everything she did and the group greatly benefited from the stable financial platform which she helped create and manage, simply and without fuss.

Rosie contributed enormously also to what we have achieved through dedicated fieldwork over many years, in what have sometimes been far from ideal weather conditions. She has shared in the excitement of new findings and, like all of us, marvelled at the incredible migratory achievements of these shorebirds which move each year between Australia and their breeding grounds in Siberia and Alaska. Who would have believed, for example, that every Eastern Curlew leaving the coast of Victoria in early March flies, on the first leg of its northward migration, the 9000km to the Yellow Sea in China non-stop in just 9 days? And Rosie, again like all of us, achieved great satisfaction from knowing that the scientific data we generated is being used to help protect these birds throughout the Flyway.

I have had many communications concerning Rosie over the last few days from VWSG members in Victoria and interstate. The most featured words to describe her were "gentle, kind, warm, generous, organised……". She was loved by everyone. I never heard a critical word spoken of her. But I do remember a few **by** her, especially when her high standards were not met by others! It is typical of her 'thought for others' that she continued to take part in Corner Inlet visits, long after her failing health made it too difficult to clamber in and out of boats in winter, just so she could do all the cooking and catering for the team at the Yanakie house.

Rosie really loved the Yanakie house. It was an especially welcome side benefit in recent years that our visits down there provided extra opportunities for her to enjoy sharing its attributes with a wide range of other people. This last year also saw her commission a special wire sculpture of an Emu and its chick, now installed in the 'turning circle' at the front of the Yanakie house in what will be a permanent memorial to Rosie. It was wonderful to see the perseverance and braveness which enabled her to continue, right to the end, to live a life which still encompassed the activities she enjoyed most - walking, gardening, birding and being with family.

Rosie will be enormously missed by her family, her greatest interest in life and one of her special joys in recent years. She was enormously proud of their diverse achievements and greatly relished the way that their lives grew to take them to different parts of the world. The contact with, the pride in, and the

love of her grandchildren particularly buoyed her during the difficult times with her health and medical treatments.

Rosie, everyone in the Victorian Wader Study Group sends you their thanks for everything that you have contributed to their lives over the past 25 years. They also send their condolences to your wonderful family. Sweet dreams Rosie and we hope all the birds are singing to you in heaven.

VWSG Financial Report 2015/2016

The adjacent statement gives details of the income and expenditure incurred by the VWSG during the year ending 30 June 2016. It also provides a statement of the financial position of the Group at year end.

The Group has been using reserves for three of the last four years. This has been for a variety of reasons, on both the income and expenditure side. In the current year, 2015-2016, expenditure exceeded income by almost $6,720. The prime reason was the introduction of a large geo-locator program, for Red-necked Stint. This research became possible because of a very generous gift from Xenia Dennett. To date much of the King Island geo-locator program for Ruddy Turnstone has been funded by Deakin University, and Friends of Shorebirds SE (Maureen Christie) has funded geo-locators used in South Australia.

With developments in technology it is highly likely that the Group will wish to expand its program through the use of satellite transmitters, geo-locators, hybrids and engraved flags, which greatly add to the base costs of fieldwork.

Subscription income increased this year, mainly because of a number of members paying backsubscriptions. However, the dollar value of the increase ($720) and indeed the total ($2,625) is small in relation to total expenditure. There were as usual some new members but it should be expected that the ageing membership base will lead to a reduction in subscription income at current rates. The committee therefore determined that a motion should be put to the Annual General Meeting to increase the cost of membership, which has not changed in many a year, to $30 (students $15) from the current $20.

A number of members generously added to their membership with donations, most notably Deryn Thomas who contributed $130 of the $540.

A most welcome large grant from Coastcare of $6,295 was a significant bolster to income.

A number of significant costs are not reflected in the financial statements. As a volunteer group many of the operating costs are met by members themselves. These expenses, for example air flights to King Island and fuel to drive to catching sites, would exceed the costs for administration and equipment which are formally recorded in the financial statements opposite. If people's time is included then a costing exercise carried out in 2015 (and published in *Stilt*) showed that for VWSG this amounted to over $500,000 each year.

Parks Victoria meet the costs of boats to transport people and equipment to difficult locations for wader and tern banding and counting.

Angus Roberts of Sea Road Mersey kindly arranges the transport of a vehicle and equipment to King Island twice a year.

We are grateful for the donation of items for the raffles which this last year raised $655. Thank you Mr Baillieu Myer, AM and Elgee Park Winery, Flinders General Store, Dr David Seay, Barberella Hair, Fitzroy.

Overall, partly because of the considerable reserves built up over earlier years, the financial position of the VWSG remains satisfactory.

Helen Vaughan and Clive Minton

Victorian Wader Study Group Inc. ABN 12 794 488

Income and Expenditure Statement for the year ended 30 June 2016.

Income		**Expenditure**	
Subscriptions	2,625.00	Printing of Bulletins	2002.00
Donation, Xenia Dennett	7,500.00	Postage, photocopying etc.	96.75
Other donations	540.00	Secretarial Assistance	5778.72
Interest cheque account	7.39	Bank Charges	22.00
Interest, cash reserves	229.10	Incorporation fee	54.00
Interest term deposit	1578.06	King Island shortfall	67.00
Grant from CoastCare	6295.00	Flowers (Rosemary Davidson)	96.00
Sub-total	**$18774.55**	**Sub-total**	**$8,116.47**
Sale of T shirts	138.00	Geo-locators	12,047.74
Sale of glue	15.00	Leg-flags	1,984.90
Excess AGM meals	257.00	Black Powder	240.00
Proceeds from raffle	655.00	Cable, drums	365.00
Excess from Corner Inlet, SA stays	51.55	Electric fuses	1,811.00
		Projectile steel/shackles	261.00
		Batteries	124.41
		Wire junction blocks	141.00
		Radio	313.19
		Trailer, equipment repairs	974.55
		Miscellaneous equipment	230.39
Sub-total	**$1,116.55**	**Sub-total**	**$18.493.26**
TOTAL INCOME	**$19,891.10**	**TOTAL EXPENDITURE**	**$26,609.73**
Cash Balance at 01/07/2015		Cash balance at 30/06/2016	
Westpac Cheque Account	3,526.36	Westpac Cheque Account	6,580.59
Westpac Cash Reserve	24,851.92	Westpac Cash Reserve	12,066.92
Westpac Term Deposit	32,400.23	Westpac Term Deposit	35,541.25
Macquarie Cash Account	224.85	Macquarie Cash Account	230.67
Petty Cash	162.10	Petty Cash	4.00
Unpresented cheque	(24.00)		
NET TOTAL	**$61.142.06**	**NET TOTAL**	**$54,423.43**

VWSG Inc. Membership List
August 2016

Bev & Geoff Abbott
Ruby Albury
Charles & Jocelyn Allen
Malcolm Allen
Terri Allen
Mark Anderson
Peter Anton
Robyn & Steve Atkinson
Rose Baulch
Graham & Jenny Beal
Robert Brinkman
Andy Bennett, Kate Buchanan
Margaret Bennett
Rob & Gail Berry
David Billinghurst
Malcolm & Judy Brown
Paul & Anna Buchhorn
Jeff & Sarah Campbell
Mervyn & Ann Chappel
Rob Clemens
Richard Chamberlain
Smathie Chong
Maureen Christie
Allan Clarke & Marj Reni
Bretan Clifford
Pete Collins
Mike Connor
Dave Cropley
Michael Dawkins
Bob Dawson
Xenia Dennett
Barbara Dickson
Joris Driessen
Dianne Emslie
Alice Ewing
Jon Fallaw & Becky Hayward
Maureen & Robin Fitzgerald
Amelia Formby
Colin & Angela Gibbs
Don & Joyce Gillespie
Kate Gorringe-Smith
Ken & Carlene Gosbell
Andrew & Kath Gosden
Olivia Gourley
Doris Graham
Nathan Gregory
Nicole Grenfell
Patrick-Jean Guay
Jim & Surong Gunn
Angie Gutowski
Birgita Hansen
Neville Hatten, Robin Borland
Peter Hermans
David & Margaret Hollands
Vivien Holyoake
Andrej Hohmann
Patsy Hohnen
Tracey-Ann Hooley
Tania Ireton
Roz Jessop
Penny & Murray Johns
Steve Johnson
Greg Kerr
Debbie King
Marcel Klaassen
Irma Kluger
Tessa & Angus Lamin
Brett Lane
Bruce Lavender
Hannah Lee
Mark Lethlean
Simeon Lisovski
Janet Limb
Moira Longden
Richard & Debbie Loyn
Callum Luke
John & Susie Lyons
Meg Macmillan
Clare McCutcheon
Joan McDonald
Rod McFarlane & Helen Vaughan
Pat Macwhirter
Grace Maglio
Ila Marks, Eric Miller & Heidi
Brian Martin
Gary Matthews
Golo Maure
David Melville
Clive & Pat Minton
Stewart Monckton
Lorraine Moore
Maureen, Paul & Jordan O'Neill
Priscilla Park
Graham & Vicki Parkyn
Penelope Pascoe
Rob & Linda Patrick
Reece Pedler
Hugo Phillipps
Heather & Jim Phillipson
Mike Preeston
Thomas Putt
Susan Quirk
Ann Renkin
Jim, Jenny & April Reside
Roger & Annabel Richards
Alice Risely
Don & Jude Ripper
Bruce Robertson
Ken, Annie & Danny Rogers
Don & Greta Robertson
Yaara Rotman
Neville & Nancy Roussac
Graeme & Margaret Rowe
Liz Sarrailhe
Tom Schmidt
Julie Shaw
Charles Silveira
Holly Sitters
Marta Slawuta
Hannah Smith
Mark & Mem Smith
Roger Standen
Jonathan Stevenson
Iain, Sandy, Sally, Anna & James Stewart
John Stoney
Bob Swindley
Naoko Takeuchi
Laura Tan
Susan Taylor
Deryn Thomas
David & Wendy Trudgen
Connor Van Doorn
Paul & Kay Van Loon
Inka Veltheim
Dan Weller
Andrea West
Mike Weston
David & Jean Wilbraham
David Wilson
Jeannine Wilson
Sharon Woodend
Prue Wright
Meijuan Zhao
Elizabeth Znidersic

Bulletins are also sent within Australia to:
Australian Bird & Bat Banding Scheme
Australasian Wader Studies Group
Birdlife Australia
Broome Bird Observatory
CSIRO Library, ACT
Dept. of Defence, Swan Is.
Queenscliff
Eyre Bird Observatory
French Is. Head Ranger FINP *(Mick Douglas)*
Melbourne Water (Werribee Sew. Farm) *(Peter Gall)*
National Library- ACT
NSW Wader Study Group (*Phil Straw)*
NWA WSG- Chris Hassell
Phillip Island Nature Parks
Parks Victoria, Foster
Parks Victoria, Queenscliff
Parks Victoria, Wonthaggi
Queensland Wader Study Group
Victoria Museum
Victorian Ornithological Research Group
Victorian State Library
And landowners on whose property the group operates in Victoria

Overseas recipients of the Bulletin: *Alaska:*R Gill- Alaska Science Centre
B McCafferty-US Fisheries & Wildlife Service
China: National Birdbanding Centre
Ma Qiang -Chongming Dongtan Nature Reserve
France: Natural History Museum, Paris
Hong Kong- Geoff Carey, Yu Yat-Tung, John Allcock
Indonesia Y R Noor-Wetlands International; Iwan Londo
Japan:
Kiyo Ozaki & Y Shigita-Bird Mig. Res. Cent.
T Hiroi-Japan Wetlands Active Network
M Kashiwagi
*Republic of Korea:*Nial Moores, Dr K Jin-Han
Mongolia:
M Gilbert, Wildlife Conservation Soc.
New Zealand:
NZWSG – Adrian Riegen
P Battley, T Habraken, R Schuckard
Russia: Dr P Tomokovich, Dr Y Gerasimov
Singapore: J Gan
*Switzerland:*Senckenbergische Bibliiothek
Taiwan: Chung Yu Chiang, Weiting Liu
Thailand: Prof. P Round
United Kingdom:
Highland Ringing Group, Scotland: Hugh Insley; Dr H Sitters,Wash Wader Ringing Group: Phil Ireland

CONTENTS