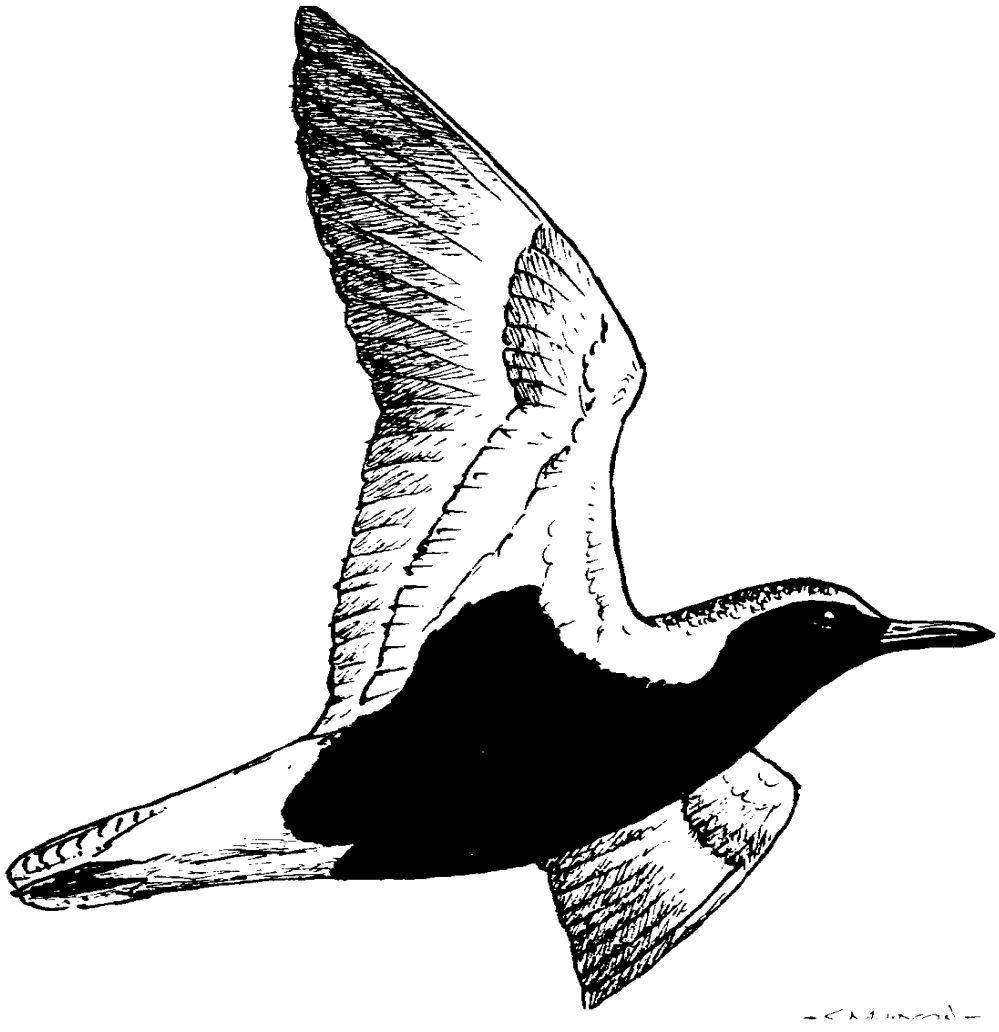
VWSG BULLETIN

JOURNAL OF THE VICTORIAN WADER STUDY GROUP

Number 40
August 2017



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.

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Subscriptions for 2017/18 (payable in advance on 1 July 2017)

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.

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

Our web site is maintained by Birgita Hansen

Summary of VWSG Activities in 2016/17
Clive Minton

Introduction
This is the 40th edition of the VWSG Bulletin. This is logical because we are now in the 40th year since the VWSG became really active, in the last quarter of 1978, with regular fieldwork at a range of locations and by adding cannon netting to its previous mist netting techniques. In that period we have caught over a quarter of a million waders. By coincidence, we added two new species to our banding list this year, bringing the total number of different species banded by the group to 40 also!

Like previous Annual Bulletins, this one tries to summarise our main activities and achievements for the benefit of members and also as a permanent historic scientific record. Some of the highlights are picked out and included in this introductory summary.

Wader Fieldwork
There are many possible interpretations of what is a 'good' year and which results are the most significant. Certainly the absolute total of waders caught in a year is not in itself a major yardstick. It is the species mix, location and temporal timing of our catches which are the most important judges of success. In the 2016 calendar year we caught 'only' 3,883 waders. This is our fourth lowest ever catch total. But the range of species was good and we still managed to achieve good samples in most of our main target/'special' species. For the second consecutive year, however, we were significantly short of our minimum targets on Pied and Sooty Oystercatchers. They seem to get harder to catch each year!!

Whilst the catching of unusual/rare species is not in any way an objective of our fieldwork it nevertheless was pleasing to find a 'bonus' of a Red-necked Phalarope in a large catch of small waders adjacent to Werribee Sewerage Farm in December 2016. It was lovely to see this beautiful bird close up in the hand and to observe, inter alia, its super-fine beak and its lobed feet. Phalaropes normally spend a lot of time swimming in comparison with most other waders.

Even more unusual were the circumstances surrounding the South Island Pied Oystercatcher, which was the first of this species banded in Australia when it was caught at Stockyard Point in early August 2016. Embarrassingly, it was not recognised at the time and its true identity came to light only when it was seen on the northern New South Wales coast at the end of December.

The red engraved colour flag 1N also helped many subsequent viewers to be sure that they were looking at a South Island Pied Oystercatcher rather than one of its many Australian Pied Oystercatcher congeners. Amazingly, this bird moved back to its original banding place at Stockyard Point and was viewed by very many people from May 2017 onwards (to at least early August).

A key component of the VWSG Fieldwork Programme is catching good samples of a variety of wader species each year in order to determine their annual breeding success (from the proportion of juvenile birds in catches). This was difficult in the 2015/16 season because of the paucity of juvenile birds – the 2015 Arctic breeding season was a very poor one. This year, however, we were blessed with a bumper harvest of juvenile birds with Ruddy Turnstone and Curlew Sandpiper producing record numbers of juvenile birds. This will give a much needed boost to wader populations.

Tern Fieldwork
For many years our Crested Tern fieldwork has covered three large breeding colonies – Mud Islands (Port Phillip Bay), The Nobbies (Phillip Island/Western Port) and Corner Inlet. Sometimes events and breeding outcomes are similar at all three colonies and sometimes they are different. The 2016/17 breeding season showed marked contrasts between each

colony. The number of pairs of Crested Terns nesting at Mud Island (2,500) was the highest for more than 20 years and, furthermore, breeding success was very good for the first time for at least ten years. By contrast, nesting at The Nobbies was all over the place. Nearly half the birds originally attempted to nest on the outer Seal Rocks where they are much more exposed to weather and predation. After these had mostly failed, the other half of the population nested in the more conventional location at The Nobbies but appeared to have 'missed the boat' as far as the optimum timing for breeding. They had a rather poor breeding outcome with a total of 4,000 pairs producing probably not much over 500 fledged chicks. In further contrast, at the Corner Inlet colony the close to average 500 pairs, fortunately, had above average breeding success.

It was good that the two Caspian Tern colonies which we monitor annually had an outstanding year. There was a record 40 pairs at Mud Islands and a total of over 100 young probably fledged from the two colonies. This was probably the best breeding success in over 30 years of studies.

A highlight of the tern year has been a further successful major expansion of the reading of band numbers on Crested Terns that are spending the non-breeding season on the Northern New South Wales Coast. As we go to press, in late August, Steve McBride has sighted over 150 different birds since the Crested Terns started to return from their Victorian breeding grounds in February. This data will enable the age-structure of the Crested Tern population to be accurately determined and the average annual survival rate over the study period to be calculated.

Recoveries and Flag-sightings

Superficially, the recoveries area seems to have contracted over the years. But this is actually an artefact of the huge increase in sightings of flagged birds with this information now particularly productive with the advent of individually engraved flags some ten years ago. Thus the 'wader recoveries' section of this Bulletin contains only one record – a Russian-banded Red-necked Stint which was recaptured on Barrallier Island. In our earlier reports some three pages of the Bulletin was usually occupied by wader recoveries and this was the first part most people turned to!

The huge expansion in the amount of movement data collected since flags were introduced has been a success beyond all our expectations. Who would have believed that we could receive 136 sighting reports of Victorian Bar-tailed Godwit in South Korea in just one year? And 255 reports of Red Knot in China! So it is the 'wader flag sightings report' which is the real highlight of this Bulletin if one is looking for information on the amazing long-distance movements which our waders undertake.

Percentage Juveniles (Breeding Success)

As usual, a comprehensive report is included in this Bulletin covering each season's results of our 'percentage juveniles' sampling project. Though we had to work very hard to get samples on some species (Sharp-tailed Sandpiper and Sanderling particularly) we eventually obtained our usual complete coverage. As mentioned earlier, the 2016 Arctic breeding season seems to have been generally a very good one for most of the wader populations which visit south east Australia, and Australia as a whole. It was amazing to look at the unprecedentedly (in recent times) good flocks of Curlew Sandpipers in the field and to realise that almost one in every two birds was actually a juvenile. Not surprisingly, there were many more Curlew Sandpipers around in the 2017 winter than is normal at that time of year. This is because, as in most species, one year-old Curlew Sandpipers do not migrate northwards to breed. Breeding is delayed until age two.

Geolocators and Satellite Transmitters

The extremely successfully long-term program of deployment of geolocators on Ruddy Turnstone on King Island and in the south-east of South Australia was continued during the last year. Eighty-eight new geolocators were deployed and a record 65 geolocators were

retrieved. An unbelievable 37 geolocators were retrieved on King Island during the nine day visit in November 2016.

A feature of the Turnstone work is that we now have repeat journeys for quite a number of birds, with some individuals having been tracked in four separate migration years. This is achieved by placing a new geolocator on every Turnstone from which a geolocator has been retrieved.

The other geolocator success story derives from the 61 units deployed on Red-necked Stint at Yallock Creek in April 2016. We have been extremely pleased and somewhat surprised to retrieve 14 of these. We are still in the process of fully analysing the results. But a surprising feature is that most birds are using, on average, shorter stages on their migration than we had expected. This is particularly so on northward migration when many stop once, sometimes twice, before exiting Australia.

Consideration is now being given to what species we should target with geolocators in 2018/19. Curlew Sandpiper is being given serious consideration. It has long been a highly desired target, partly because of its threatened species status. We have judged that the relatively low chance of recapture made the deployment of geolocators on Curlew Sandpipers non-viable. With our improved knowledge of Curlew Sandpiper distributions, and the boost to the population from the brilliant 2016 breeding season, we now judge that it might be viable to put geolocators on Curlew Sandpipers and retrieve a reasonable number of them.

Geolocators have to be retrieved by recapturing a bird and removing the unit before the electronically recorded movement data can be downloaded. On satellite transmitters the information obtained is transmitted back automatically every two days and so birds don't have to be recaptured. The trouble is that unit cost for these is much, much higher ($5000 plus download cost vs. $200) and the units are much heavier (2-5g for satellite transmitters vs. 0.3-1.0g for geolocators). The Grey Plovers which were given satellite transmitters in South Australia were an outstanding success, with two individuals eventually reaching Wrangel Island to breed and one even making it back to northern Australia. But at the moment there seems to be a paucity of species in south-east Australia which are of sufficient size for deployment of satellite transmitters. We await the development of lighter units and appropriate harness attachment methods.

Equipment

We continue to operate with an excellent portfolio of equipment brilliantly maintained by Paul Buckhorn and Rod McFarlane. The small CoastCare grants which are received in most years have been the key to us being able to operate with such good equipment. Small improvements are continually being made – the latest being to 'tighten up' the fit of projectiles in the barrels and to modify slightly the cartridges to make cartridge loading simpler. We have a portfolio of ten different cannon nets and usually have two or three options (large-mesh/small-mesh, large net/small net) when we go into the field. This is because different species and different weather conditions require different nets. For example, Oystercatchers are caught and held much better by large-mesh nets. Small-mesh nets, from which birds can be extracted much more easily, won't fire adequately into more than a ten knot wind. Unfortunately the Victorian coastline is notoriously windy, with the wind usually being off the sea. So the choice of the optimum net to use for a particular catch is often a critical consideration.

Financial

The increase in subscription rates this year significantly increased subscription income. With many members opting to receive electronic copy only of the Bulletin printing costs were also reduced. However, the main apparent improvement in our income/fieldwork expenses this year derived from chance timing of major expenditures. For example, no electric fuses were purchased during this financial year. These cost $5 each, with up to four used per net firing.

Our excellent financial position overall continues to derive from generous donations, particularly $7,500 again given by Xenia Dennett. Many individual members also contributed small amounts totalling $968. CoastCare has been a regular annual contributor to our fieldwork and equipment costs and Deakin University has again covered a major portion of the geolocator costs for Ruddy Turnstone on King Island.

Enormous thanks are given to all those who have financially assisted the VWSG during the last financial year (and previously).

The Future

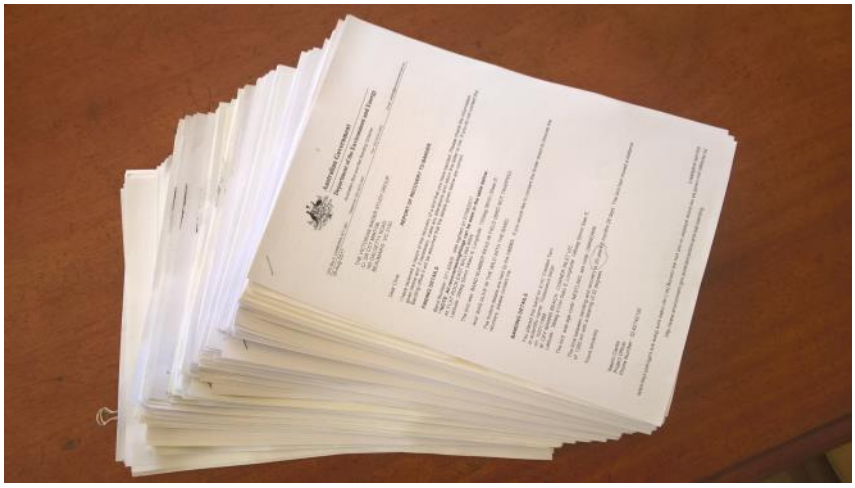
We have reached the stage where it is desirable and necessary to have a major review of our scientific/fieldwork program and of our organisational structure and individual responsibilities which are required to sustain that.

Over the years we have added new components to our fieldwork demands (most recently geolocators/satellite transmitters). With a gradually ageing membership and a small annual drop-out of those who can no longer enjoy and endure the more demanding elements of our fieldwork, it has proved increasingly difficult to obtain a satisfactory team on occasions. A small group of experienced members, mainly those with a scientific bent, will carry out this program review over the next few months.

It is also necessary to review our organisational structure and individual responsibilities. I am now unable to carry out many of the duties which I have covered for many years and we need to devolve many of these responsibilities to others. One or two other senior VWSG members have expressed a wish to 'retire' or at least reduce their commitments to VWSG and, thank goodness, there are those up and coming newer members who wish to become more involved. So again, over the next few weeks/months, we will be reviewing our 'modus operandi' and revising/reallocating many areas of responsibility. It may well be that the era of operating with a 'committee' which hasn't formally met for nearly 40 years is coming to an end. Although much consultation and liaison has taken place informally in the past it may be necessary to resort to occasional formal committee meetings in the future for key people to remain fully informed and have opportunity to input as they wish.

Thank you to everyone who has served and helped the Victorian Wader Study Group in so many ways and, in many cases, for such a long period.

Do continue to enjoy your participation in the Group and **do** please remember that the huge amount we have achieved over the years, being probably the world's largest wader banding operation for the last 40 years, has been achieved by team work in which everyone has participated to the very best of their ability and availability.



A sample of ABBS reports generated by observations of Crested Terns in 2016/17 (Photo Nathan Gregory)

Ken Gosbell

John Hobbs Memorial Medal winner 2017

Collated by Danny Rogers

Ken Gosbell is the quiet achiever of the Australasian shorebird community. He has played a large role in studies of the migrations of our shorebirds, identifying the threats that they face, and bringing the urgency of these threats to the attention of both public and government.

Although Ken has written or co-authored a number of important scientific papers about shorebirds in the East Asian – Australasian Flyway, he is not formally trained as an ecologist or ornithologist. He qualified as a civil engineer and had a long and varied career in the public service, initially working as a structural engineer in the Commonwealth Department of Works and later progressing to project management. This work took him to many interesting places in Australia and Papua New Guinea, and included leading a project to rebuild Australia's Antarctic bases. Travels like these gave him some opportunity to indulge his lifelong interest in birds, botany, photography and natural history, but it was not until he retired that he was able to fully immerse himself in these passions.

In 1995, recently retired and seeking a conservation-oriented hobby, Ken joined the Victorian Wader Study Group (VWSG) on one of their regular cannon-netting catches (at the suggestion of a bushwalking friend Rosemary Davidson). He was immediately captivated by shorebirds, and has been studying them ever since. In the early stages he learned a great deal about shorebirds and cannon-netting techniques from Clive Minton, the enthusiastic leader of the VWSG. Ken became one of Australia's few licenced cannon-netters, and a stalwart of the VWSG. But his interests went beyond cannon-netting and the migration questions it largely addresses. He also spent a great deal of time learning about monitoring methods and threatened habitats in Asia where most of our shorebirds stage, learning in particular from Jim Wilson and the late Mark Barter, and from self-funded expeditions to count shorebirds with local teams in China, South Korea and Kamchatka.

Ken's first shorebird publication was a detailed study of the biometrics and moults of Sanderling (Gosbell 2001), and for many years he led annual expeditions to count all the shorebirds in the Coorong (Gosbell and Christie 2002, 2003, 2004, 2005, 2006, 2007), maintaining the effort until sufficient local and government interest had been built up for the counts to continue without his direct involvement. Since 2007, the main focus of Ken's shorebird research has been in geolocator studies of shorebirds. Geolocators are tiny electronic devices that measure and log light levels, and concurrently record the time. Careful analyses of these data can reveal (approximately) where the bird has been. However it is labour intensive, not least because it is necessary to recapture a tagged bird to retrieve the data. Ken trained himself as the local technical expert, playing the leading role in working out how to attach the devices safely to shorebirds, how to download the data, and how to analyse it. A flow of publications has resulted, hugely enhancing our understanding of migration in this flyway (Minton et al. 2013) and making the Ruddy Turnstone the focus of a migration and disease study at Deakin University (e.g. Aharon-Rotman et al. 2016). Ken was one of the first researchers to realise that the light levels recorded by geolocators on the breeding grounds could be used to tell when shorebirds were incubating (Gosbell et al. 2012), as the geolocators of shorebirds (mounted on leg-flags) are only concealed from 24-hour Arctic light when the birds are sitting. The technique can now be used as a low-cost tool to study breeding behaviour of shorebirds without ever setting foot in the Arctic! It can be used as an indication of breeding success, and has demonstrated more frequent re-nesting by Arctic shorebirds than was previously expected; it has also contributed to a Nature publication on interspecific variation in the incubation schedule of shorebirds (Bulla et al. 2016).

Ken's behind-the-scenes contribution has been greater still. He has served on the Australasian Wader Studies Group (AWSG) Committee since 1997 – initially as secretary and later as treasurer – so by the time he became Chairman of the group (2006-2010) he had a very full understanding of the inner workings and capacity of the group. Under his chairmanship the group increased its already substantial conservation and international outlook. With Mike Weston and Danny Rogers he conceived and initiated the Shorebirds 2020 program, hosted at Birdlife Australia – a program that has greatly increased the coverage, rigour and long-term sustainability of shorebird monitoring in Australia. The huge database consolidated and maintained by the Shorebirds 2020 program has been critical in documenting the decreases in populations of migratory shorebirds in Australia (Studds et al. 2016, Clemens et al. 2016). Ken was also a co-leader of the Saemangeum Shorebird Monitoring Program, a project to document and publicise the effect of a huge tidal-flat reclamation project on the west coast of South Korea (Moores et al. 2008). Although Saemangeum could not be saved, both projects have had (or contributed substantially to) some positive conservation outcomes, including preservation of the threatened Geum Estuary in South Korea, a Korean Government announcement (somewhat maintained!) that it would not initiate any more major tidal flat reclamation projects, and broad acceptance by national governments that shorebird populations are declining, largely because of habitat loss on their Asian staging grounds.

Still further behind the scenes are innumerable other activities by Ken that didn't result in headlines, but were and are essential to maintain shorebird studies in Australia. An example is the banding database of the AWSG and VWSG, the foundation of hundreds of publications; it became a major internal problem when the software that drove it became obsolete. Ken quietly took the issue on, established a team to find and implement a software solution and another team to maintain the continuity of data input. It was a typical Ken contribution: carefully considering the problem, so that when the moment arrived, he was prepared to implement the solution seamlessly. Another example is Ken's role as former chair of the Shorebird Working Group of the Flyway Partnership, an affiliation of governments and non-government organisations to advance shorebird conservation in this flyway. Many shorebird-related activities are fun. This kind of liaison work is not. But it is essential that people with a good understanding of shorebird biology attend the meetings, guide their discussions, bring the ever-changing cast of bureaucrats up to speed and remain patient and committed when the complex workings of between-government negotiations move at seemingly glacial pace. There are still many challenges in shorebird conservation, but it is thanks to a handful of people like Ken that it is gradually raising higher on government agendas.

Finally, it is difficult to measure the impact that Ken has had simply in recruiting shorebirders to the cause. A count, conference or a shorebird catch can seem intimidating to a newcomer, thrown into the thick of activities with a team of variably excitable experts who are very focussed on the task at hand. Ken is a reassuringly calm and welcoming presence in those circumstances, genuinely interested in what newcomers have to say and always ready to share his huge shorebird knowledge. I have no hesitation in recommending Ken for the Hobbs medal.

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Total number of waders caught by species in 2016

SPECIES	New	Retrap	Total
Bar-tailed Godwit	191	4	**195**
Ruddy Turnstone	131	170	**301**
Great Knot	2	0	**2**
Red Knot	48	0	**48**
Sanderling	27	2	**29**
Red-necked Stint	2087	595	**2682**
Sharp-tailed Sandpiper	78	0	**78**
Curlew Sandpiper	361	25	**386**
Red-necked Phalarope	1	0	**1**
South Island Pied Oystercatcher	1	0	**1**
Pied Oystercatcher	47	19	**66**
Sooty Oystercatcher	10	9	**19**
Grey Plover	4	0	**4**
Red-capped Plover	24	0	**24**
Double-banded Plover	19	4	**23**
Hooded Plover	19	5	**24**
15 Species	**3050**	**833**	**3883**

The VWSG caught **two** 'new' species in 2016 – Red-necked Phalarope and South Island Pied Oystercatcher.

We didn't recognize the SIPO when it was caught at Stockyard Point on 6 August 2016! It was given a leg-flag (Red engraved white 1N) and was identified when it was subsequently seen after it had moved to the northern News South Wales coast. It was the first SIPO to be banded in Australia.

The Red-necked Phalarope was caught in late December 2016 on the shore adjacent to Werribee Sewerage Farm where it was roosting with approximately 2000 Red-necked Stint and 500 Curlew Sandpiper. It was an adult which suggests it may have been the individual which was present in the same area in the 2014/2015 non-breeding season.

Only 15 species were caught in 2016, compared with the normal 20 species in a year. There were good samples of Bar-tailed Godwit (195), Ruddy Turnstone (301), Curlew Sandpiper (386), Red Knot (48) and Hooded Plover (24). Species with poor totals for the year were Sanderling (29), Pied Oystercatcher (66 - target 150 minimum) and Sooty Oystercatcher (19 - target 100 minimum).

Total Waders Caught by Species 1975 to December 2016 by the 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	5813	810	6623
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	6064	3226	9290
Great Knot	702	89	791
Red Knot	5312	744	6056
Sanderling	5759	2129	7888
Little Stint	9	0	9
Red-necked Stint	129929	34445	164374
Long-toed Stint	1	0	1
Pectoral Sandpiper	2	0	2
Sharp-tailed Sandpiper	10746	470	11216
Curlew Sandpiper	27694	5192	32886
Cox's Sandpiper	1	0	1
Broad-billed Sandpiper	7	0	7
Red-necked Phalarope	1	0	1
South Island Pied Oystercatcher	1	0	1
Pied Oystercatcher	3450	1739	5189
Sooty Oystercatcher	1102	419	1521
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	194	32	226
Red-capped Plover	798	187	985
Double-banded Plover	4039	1023	5062
Lesser Sand Plover	115	11	126
Greater Sand Plover	31	3	34
Black-fronted Plover	57	4	61
Hooded Plover	85	11	96
Red-kneed Dotterel	136	11	147
Masked Lapwing	196	5	201
40 Species	207480	50892	258372

The Red-necked Phalarope and South Island Pied Oystercatcher bring the number of species caught by the VWSG to 40. Will there be a 41st species, and if so, what will it be?

Red-necked Avocet became the twelfth species to have a catching total of over 1,000 during the 42 years of catching. Again, what will be the next species to pass 100 - Red-capped Plover or Eastern Curlew?

The retrap percentage is 19.7% over the total period. In 2016 it was 21.4%.

Table prepared by Clive Minton and Helen Vaughan.

New and Retrapped Waders Caught Each Calendar Year by the VWSG			
Calendar Year	**New**	**Retrap**	**Total**
* 1975	9	0	9
* 1976	616	4	620
* 1977	482	12	494
* 1978	1296	42	1338
1979	7436	486	7922
1980	6121	1206	7327
1981	4561	869	5430
1982	3774	796	4570
1983	2875	628	3503
1984	4272	1045	5317
1985	4073	1051	5124
1986	7144	2057	9201
1987	5350	1559	6909
1988	8019	2697	10716
1989	5437	1584	7021
1990	4094	1950	6044
1991	3224	850	4074
1992	4652	861	5513
1993	8831	2588	11419
1994	4839	1753	6592
1995	2708	625	3333
1996	5263	1035	6298
1997	4366	1050	5416
1998	8083	1408	9491
1999	6515	1591	8106
2000	10350	2594	12944
2001	4839	1320	6159
2002	10421	2162	12583
2003	8495	2854	11349
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
2016	3050	833	3883
Totals to end 2016	**207480**	**50892**	**258372**
Average annual total for 1979 - 2016 = 6735 *excluded			

Table prepared by Clive Minton and Helen Vaughan.

The 2016 catch total of 3,883 was the lowest annual total since 3,765 in 2010. Before that, the lowest total was 3,333, way back in 1995.

The total was partly a result of the paucity of juveniles in the 2015/2016 summer. It was also a result of lower catching success at a number of key locations.

Total waders caught each 6 months 1979 to 2016 by the 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**
2016	1987	1896	**3883**
Totals to end 2016	**132761**	**123150**	**258372**

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

The 2016 total was almost evenly split between the first half of the year (1,987) and the second half (1,896). In most years more birds are caught in the first half of the year.

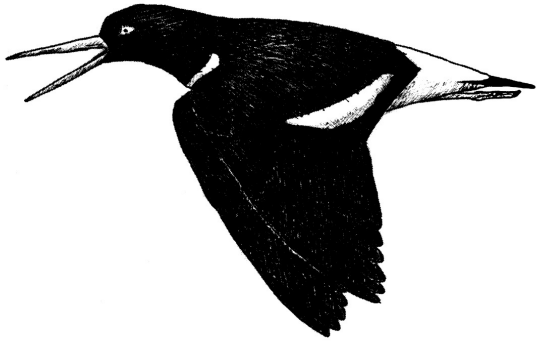
Location of Waders Caught in Victoria, South Australia and Tasmania

Victoria	**To Dec 2015**	**2016**	**Total**
Werribee	72593	1439	**74032**
Western Port/Flinders	66486	1632	**68118**
Queenscliff/Swan Bay	31975	0	**31975**
Corner Inlet	32428	271	**32699**
Anderson Inlet (Inverloch)	22313	3	**22316**
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	19430	345	**19775**
Tasmania	2868	193	**3061**
Total	254579	3883	**258462**

Other includes Geelong (Point Henry/Belmont), Bendigo Sewerage Farm, Seaford Swamp, Braeside/Croyden, Gippsland Lakes and Toowong.

Table prepared by Helen Vaughan and Clive Minton

Werribee Sewerage Farm and Western Port continue to be the main catching locations. Much effort continues to go into catching at Corner Inlet, but numbers caught are smaller (only 271 in 2016). As in other recent years, no catching was carried out at Queenscliff or in Swan Bay. This is because the main roosts (which used to be on Sand/Swan Island) are now in less catchable locations than previously. Most of the birds recorded as banded in Tasmania (3,061) were caught on King Island. However, a few hundred were also caught on mainland north-west Tasmania about seven years ago.



Number of waders processed by the VWSG each month to December 2016													
	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	807	99	24	842	292	286	77	335	294	566	5925
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	785	2947	1969	39	23	77	103	132	216	1631	711	9073
Great Knot	197	87	26	0	0	30	21	6	16	118	78	130	709
Red Knot	928	417	317	203	47	491	472	139	96	1000	546	317	4973
Sanderling	376	1654	2089	770	0	0	1	5	0	265	893	725	6778
Little Stint	2	2	0	0	0	0	0	0	0	0	1	4	9
Red-necked Stint	2988	1852	7237	2995	546	749	1032	985	1104	2140	3724	4331	29683
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	1839	943	240	3	0	0	0	16	635	564	748	3212	8200
Curlew Sandpiper	1632	1709	1803	289	223	128	274	528	348	1140	943	1722	10739
Broad-billed Sandpiper	1	2	0	0	0	0	0	0	0	0	0	3	6
Red-necked Phalarope	0	0	0	0	0	0	0	0	0	0	0	1	1
South Island Pied Oystercatcher	0	0	0	0	0	0	0	1	0	0	0	0	1
Pied Oystercatcher	170	259	414	626	827	1044	848	512	235	41	42	64	5082
Sooty Oystercatcher	22	108	86	217	255	376	312	144	0	1	5	3	1529
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	5	228
Red-capped Plover	44	90	68	124	210	110	77	35	12	25	39	50	884
Double-banded Plover	0	4	241	375	757	984	1113	1014	1	0	0	0	4489
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	13	3	3	4	2	15	0	0	0	2	7	3	52
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	**10351**	**9831**	**16662**	**7773**	**3048**	**4902**	**4578**	**3968**	**3249**	**6462**	**9573**	**12457**	**92854**

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

The number of waders processed grows only slowly these days. This is because we do not collect full biometric and moult data where we already have sufficient on a species at a particular time of the year. To a significant extent, this table is a good indication of when the different wader species are present or not present in south-east Australia.

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Numbers of Waders Leg-flagged by the VWSG (excluding oystercatchers)												
	1989-2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**Total**
Latham's Snipe	278	0	0	0	0	0	0	0	0	0	0	278
Australian Painted Snipe	0	0	0	0	0	1	0	0	0	0	0	1
Black-tailed Godwit	4	0	0	0	0	0	0	0	0	0	0	4
Bar-tailed Godwit	2357	186	268	351	308	243	207	10	153	87	191	4361
Whimbrel	43	0	1	0	0	0	2	0	0	0	0	46
Eastern Curlew	544	0	0	8	0	38	9	0	4	0	0	603
Marsh Sandpiper	2	0	0	0	0	0	0	0	0	0	0	2
Common Greenshank	431	0	0	25	0	0	0	0	4	2	0	462
Terek Sandpiper	13	0	0	0	0	0	0	0	0	0	0	13
Grey-tailed Tattler	5	0	0	0	0	0	0	0	0	0	0	5
Ruddy Turnstone	1610	328	497	238	348	455	170	317	375	259	131	4728
Great Knot	341	36	1	7	0	4	5	0	2	0	2	398
Red Knot	3429	248	5	136	17	50	75	4	20	73	27	4084
Sanderling	1796	506	261	89	277	439	280	159	179	78	26	4090
Little Stint	6	0	0	0	0	1	0	0	0	0	0	7
Red-necked Stint	53432	1727	2754	2055	1496	2043	497	1943	1856	991	1054	69848
Pectoral Sandpiper	1	0	0	0	0	0	0	0	0	0	0	1
Sharp-tailed Sandpiper	4422	285	276	496	11	110	99	135	106	553	14	6507
Curlew Sandpiper	9980	94	308	122	382	47	235	381	120	575	292	12536
Cox's Sandpiper	1	0	0	0	0	0	0	0	0	0	0	1
Broad-billed Sandpiper	3	0	0	0	0	0	0	0	1	1	0	5
Red-necked Phalarope	0	0	0	0	0	0	0	0	0	0	1	1
Black-winged Stilt	20	0	6	0	0	2	0	5	0	2	0	35
Banded Stilt	152	0	0	0	54	332	15	1097	53	74	0	1777
Red-necked Avocet	140	0	0	0	0	0	199	63	169	105	0	676
Pacific Golden Plover	64	0	0	0	0	2	1	0	0	3	0	70
Grey Plover	86	5	0	16	0	1	0	0	10	3	4	125
Red-capped Plover	98	1	6	3	5	7	21	4	19	28	23	215
Double-banded Plover	367	10	45	2	11	37	72	17	121	75	13	770
Lesser Sand Plover	55	0	0	0	0	0	0	0	0	0	0	55
Greater Sand Plover	16	0	0	0	0	0	0	0	0	0	0	16
Hooded Plover	0	1	0	1	1	7	0	3	8	7	9	37
Black-fronted Dotterel	2	0	0	0	0	0	0	0	0	0	0	2
Red-kneed Dotterel	3	0	0	0	0	0	0	0	0	0	0	3
Masked Lapwing	31	1	5	0	0	1	2	0	1	3	0	44
Total	**79732**	**3428**	**4433**	**3549**	**2910**	**3820**	**1889**	**4138**	**3201**	**2919**	**1787**	**111806**

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.

The number of birds flagged in 2016 was the lowest for many years, partly because of the lower number of birds caught. However, there were occasions when Red-necked Stint were released unflagged because of inadequate time and team to include this activity in banding operations. Engraved flagging of Pied and Sooty Oystercatchers is not included above.

Numbers of Waders Leg-flagged by the VWSG in South Australia

Species	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Latham's Snipe	0	0	4	0	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	0	**1**
Bar-tailed Godwit	0	0	0	3	0	8	0	0	0	0	0	0	0	12	6	0	0	0	**29**
Common Greenshank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	**6**
Ruddy Turnstone	234	226	73	193	76	141	74	258	84	141	96	109	268	45	117	322	254	103	**2814**
Great Knot	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	0	**6**
Red Knot	0	0	0	0	0	1	0	11	0	0	0	0	0	1	0	1	0	0	**14**
Sanderling	63	420	2	315	328	76	220	250	506	244	87	261	439	268	159	211	85	29	**3963**
Red-necked Stint	126	383	22	319	163	93	174	465	54	90	179	208	356	92	369	390	124	166	**3773**
Sharp-tailed Sandpiper	0	2	0	27	7	73	27	21	0	15	0	0	74	40	1	23	5	0	**315**
Curlew Sandpiper	24	11	0	190	13	2	103	8	21	33	1	4	15	0	7	8	0	0	**440**
Broad-billed Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Banded Stilt	0	0	0	0	0	0	0	334	0	0	0	54	332	12	998	53	0	0	**1783**
Pacific Golden Plover	0	2	0	0	1	0	16	13	0	0	0	0	2	1	0	0	1	0	**36**
Grey Plover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	5	4	**19**
Red-capped Plover	0	0	1	7	5	0	7	4	1	0	0	2	3	8	0	18	14	14	**84**
Double-banded Plover	0	0	4	5	1	0	0	27	2	0	1	5	29	12	0	3	0	0	**89**
Black-fronted Plover	0	0	0	3	0	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	20	**58**
Masked Lapwing	0	0	0	0	4	2	2	4	1	0	0	0	1	0	0	0	3	0	**17**
Total (20 species)	**447**	**1045**	**106**	**1062**	**599**	**396**	**623**	**1395**	**670**	**523**	**365**	**644**	**1524**	**495**	**1660**	**1060**	**505**	**336**	**13455**

The table shows all waders leg-flagged in South Australia since flagging was commenced there in 1999 (excludes oystercatchers).

VWSG FIELDWORK PROGRAMME 2017

DATE	*PLACE AND OBJECTIVES*	Tide time and height (m)	
Thur 19 Jan	**Mud Islands** Fairy Tern chicks (Team restricted to 4 people)	n/a	
Fri 20 Jan to Sat 21 Jan	**Barrallier Island, Western Port** Red-necked Stint & Curlew Sandpiper By boat from Warneet 3PM Friday net setting 6.15AM Saturday catching (Stay overnight on 20th at Harewood House)	1884 (Sat)	2.81
Tue 31 Jan	**Rhyll** Bar-tailed Godwit	1704	2.84
Sun 5 Feb	**Corner Inlet count (Nooramunga)**	n/a	
Mon 6 Feb to Thur 9 Feb	**Corner Inlet** Stay at Village Hall, Manns Beach Set nets PM 5 Feb	0823 to 1038	2.65 to 2.53
Sat 18 Feb to Sun 19 Feb	**Barry Beach** Red-necked Stint & Curlew Sandpiper Stay at Davidson's House, Yanakie	0717 0745	2.52 to 2.51
Mon 27 Feb to Sat 4 Mar	**Thompson Beach, South Australia** Attempts to put further satellite transmitters on Grey Plover or on Bar-tailed Godwit.		
Sun 12 Mar	**Friends of Shorebirds SE, South Australia** AGM at Mt. Gambier. Contact Maureen Christie. FOSSE is the South Australian activities of VWSG	n/a	
Mon 13 Mar to Wed 22 Mar	**South Australia** Ruddy Turnstone and Sanderling Stay at Paul Feast's cottage and Iain and Sandy Stewarts' Farm.	14.04 to 17.58	0.77 to 0.85
Tue 28 Mar to Thur 6 Apr	**King Island -** Ruddy Turnstone	1257 to 1826	1.40 to 1.41
Wed Apr 12	**Stockyard Point -** Pied Oystercatcher	1442	3.00
Sat 29 Apr to Sun 30 Apr	**Barry Beach & Roussacs** Pied & Sooty Oystercatcher	1545 1645	2.71 2.84
Sat 13 May	**Rhyll** Pied Oystercatcher	1412	1.67
Wed 21 June	**Corner Inlet count (Nooramunga)**	0901	2.43
Thur 22 June to Sun 25 June	**Corner Inlet** Pied and Sooty Oystercatcher and overwintering Bar-tailed Godwit and Red Knot Stay at Davidson's House, Yanakie	1008 to 1354	2.44 to 2.68

DATE	*PLACE AND OBJECTIVES*	**Tide time and height (m)**	
Sun 9 Jul	**Stockyard Point** Pied Oystercatcher	1315	2.85
Sat 22 Jul to Tue 25 Jul	**Barry Beach, Roussac Point, Charles Hall Rd** Pied and Sooty Oystercatcher	1104 to 1437	2.50 to 2.67
Tues 8 Aug	**Fisherman's Point, Rhyll** Pied Oystercatcher	1327	2.81
Sat 26 Aug	**A.G.M.** **At Clive's house, 165 Dalgetty Rd, Beaumaris** **10am net mending : 4pm AGM : 6.00pm barbecue** **7–10pm Presentations/talks**		
Sat 9 Sep	**Stockyard Point -** Pied Oystercatcher	1504	2.92
2nd half of Sep **2nd half Oct** **(To be advised)**	**Corner Inlet** Visits to look for flags on Bar-tailed Godwit and Red Knot		
November 13-21	**South Australia** Travel to SA Monday 13 November. Catch 14 to Monday 20th – 7 days catching.	1051 to 1308	0.75 0.75
November 21	**South Australia** Travel to Thompsons Beach, catch 22 to 25 November, return home 27 November	06.49	2.60
Wed 8 Nov	**Mud Islands** Caspian Tern chicks and Crested Tern adults (previously banded)	0915	0.52 low tide
Mon 4 Dec to Wed 13 Dec	**King Island** Retrieval of geolocators from Ruddy Turnstone	1200 to 0655	1.25 to 1.60
Thur 7 Dec	**Mud Islands** Caspian and Crested Tern chicks Fairy Tern nests	0857	0.56 low tide
Wed 20 Dec	**Corner Inlet** Caspian and Crested Tern chicks	0925	1.25 low tide
Thur 21 Dec	**The Nobbies -** Crested Tern chicks	0925	1.25 low tide
Thurs 28 Dec to Sat 30 Dec	**Western Treatment Plant (Werribee S.F.)** Red-necked Stint, Curlew Sandpiper and Sharp-tailed Sandpiper. Stay at WTP OFFICES, Werribee	1008 to 1132	0.90 to 0.88

Recoveries of Waders 2016/17

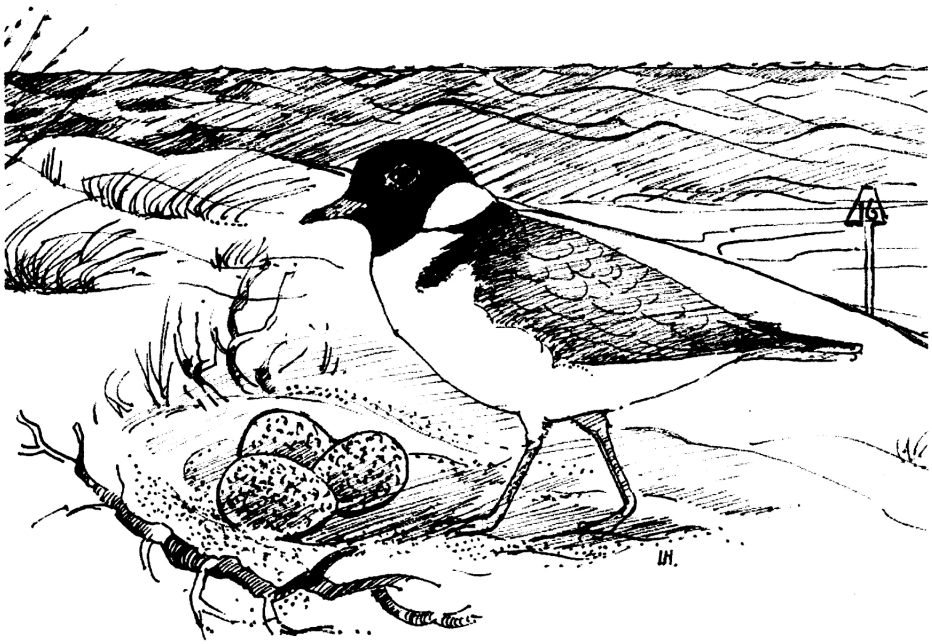
Clive Minton, Joris Driessen, Rob Patrick, Penny Johns, Roz Jessop, Maureen Christie and Prue Wright.

As mentioned in last year's VWSG Bulletin almost all movement data on waders is now generated by sightings of birds individually marked with engraved leg-flags. This year a Russian-banded Red-necked Stint is the only record received which has not been dependent on an attached leg-flag. Details are given below.

Moscow KS362989	Juv	11.08.14	Kamchatka, Russia	21.1.17	Barrallier Island, Western Port	Retrapped	10,314 km S

Many waders exiting the Siberian breeding grounds use the western shores of the Kamchatka peninsula at the start of their southward migration. Adults pass through in the second half of July and the first half of August with juvenile birds migrating rather later, starting in early August.

Normally each annual report gives a long list of the interstate movements of Pied and, to a lesser degree, Sooty Oystercatchers. However, as virtually all of these records now derive from engraved flag sightings. These individual movements are now covered in the separate Flag-sightings Report on Oystercatchers.



Sightings of Migratory Waders Leg-flagged in Victoria, South Australia and King Island, Tasmania in 2016/2017

Joris Driessen, Rob Patrick, 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 Victoria, South Australia and Tasmania (plain flags and engraved leg flags or ELFs) that were seen between July 1 2016 and June 30 2017.

Because sightings are received until well after the end 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 2016/2017. 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 1,994 sightings were processed for this report, of which 1,100 involved birds seen away from their banding location, a number substantially lower than 1,856 and 2,043 such observations in 2014/2015 and 2015/2016. This dip in sightings is largely due to a drop in overseas sightings from Bohai Bay where bird numbers in 2017 were lower than usual (pers. com. Chris Hassell), although fewer observations were also received from New Zealand. At the same time, nearly 900 observations at or near banding sites across SE Victoria (36), SE South Australia (859) and King Island (205) is a very impressive tally and just the sort of effort that needs to be expended more regularly.

Victoria

A total of 1,427 Victorian-flagged sightings were reported, of which 859 observations involved birds away from the main banding sites (Western Port, Corner Inlet and Werribee S.F.). As in previous years, Bar-tailed Godwit, Curlew Sandpiper and Red Knot make up the bulk of the observations (Table 1), largely as a result of efforts in mainland China (Bohai Bay Team), New Zealand (Adrian Riegen, Tony Habraken *et al.*) and South Korea (Andreas Kim). About 50% of sightings of Victorian-flagged birds originate from within Australia (765 observations). This rather spectacular increase is almost solely due to several days of scanning efforts in Corner Inlet by Peter Crighton which yielded over 300 sightings of Bar-tailed Godwits.

Banding on King Island 2017 (photo Wendy and Alan Pilkington

Table 1. Sightings of Victorian-flagged waders seen overseas and across Australia
(countries are referred to by their colloquial names for layout convenience)

Species	Australia	Japan	Malaysia	New Zealand	China (mainland)	Republic of Korea (South Korea)	Russian Federation	Republic of China (Taiwan)	USA	Total overseas	Total sightings
Bar-tailed Godwit	403	10		76	2	136			1	225	628
Curlew Sandpiper	218				25			12		37	255
Double-banded Plover				1						1	1
Dunlin					1					1	1
Great Knot	12				1		1			2	14
Red Knot	61			90	255		7	1		353	414
Red-necked Avocet	25									0	25
Red-necked Stint	15		1		9		1	4	1	16	31
Ruddy Turnstone	40	1		1	2			2		6	46
Sanderling	1				4					4	5
Sharp-tailed Sandpiper	1	2			2			1		5	6
Terek Sandpiper	1									0	1
Total	**777**	**13**	**1**	**168**	**301**	**136**	**9**	**20**	**2**	**650**	**1427**

Bar-tailed Godwit sightings from New Zealand were at a lower level than the previous season (76 versus 206) as well as from South Korea (136 versus 229). Similarly, Red Knot sightings from New Zealand were lower than last year (90 versus 322) and the Chinese side of the Yellow Sea (255 versus 427). A total of 25 Red-necked Avocet sightings, largely from a single scanning effort at Stockyard Point, is very similar to the 20 observations received last season.

Table 2. Sightings of Victorian-flagged waders seen within Australia

Species	NSW	NT	QLD	SA	Tas	Vic	WA	Total Australia
Bar-tailed Godwit	12		28		1	362		403
Curlew Sandpiper	4		2			201	11	218
Great Knot			12					12
Red Knot	7	1	25	1		23	4	61
Red-necked Avocet	3					22		25
Red-necked Stint				4		8	3	15
Ruddy Turnstone				6	3	27	4	40
Sharp-tailed Sandpiper			1					1
Terek Sandpiper		1						1
Sanderling							1	1
Total	**26**	**2**	**68**	**11**	**4**	**643**	**23**	**777**

The past season resulted in a number of highlights for Victorian-flagged birds, the main ones of which are summarised below.

Alaska
Hugely exciting news came from the northern hemisphere earlier this year: on 21 April 2017 Barbara Lestenkof saw Bar-tailed Godwit Orange CRW on Saint Paul Island, part of the Pribilof Islands in the Bering Sea, Alaska!

At 11,000+ km from its banding location in Corner Inlet, Victoria, SE Australia, where it was banded in June 2015 at age 2, CRW was clearly nearly back on its Alaskan breeding grounds.

Last seen at the roost in Corner Inlet in November 2016 by Peter Crighton, this is only the bird's 2nd reported resighting in the two years since it was banded.

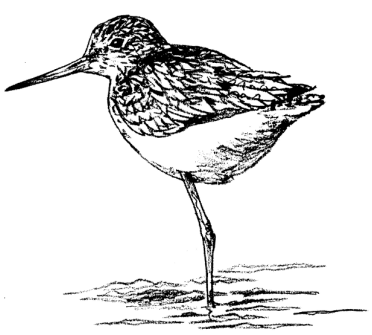
On 4 June 2017 a Victorian-flagged Red-necked Stint was seen near Nome, Alaska by Steve Hampton, the first such observation of its kind. The species does not breed in Alaska, but its Arctic breeding grounds in Russia are not all that far away relative to the distance covered on northward migration.

Russia
All Russian sightings in the past season came from the Kamchatka Peninsula, where regular shorebird expeditions now take place. Dmitry Dorofeev reported Victorian-flagged Red Knot, Great Knot and Red-necked Stint from the Khairusova and Belogovaya Rivers estuary. These included Red Knots 69 and 3R.

Red Knot Orange 69, banded age 1 at Stockyard Point in May 2012, was first sighted in October 2013 in Manukau Harbour, South Auckland and subsequently multiple times in the same area between 2014 and early 2016. In early July 2016 Orange 69 was seen on the Kamchatka Peninsula by Hwajung Kim, Dmitry Dorofeev, and Peter Crighton. By early December the bird had returned to Manukau Harbour (Tony Habraken).

Red Knot Orange 3R, banded age 1 at Barry Beach, Corner Inlet in June 2015, has since been seen in Manukau Harbour in October 2015 (Tony Habraken) and on the Kamchatka Peninsula in early July 2016 (Hwajung Kim).

Japan
Few sightings of Sharp-tailed sandpipers reach us annually. Not only do we band relatively few individuals, the species' habitat preferences do not always make it easy to spot. The past season resulted however in two sightings from Japan: a plain-flagged bird near Sonoi on Yonakune Island (OBATA Yoshiyuki) and orange ELF 5S in Shiroishi-cho, Saga-ken (Sayaka Nakamura). 5S was banded in December 2014 at the Western Treatment Plant (age 2+).



Birds travelling together never cease to be of interest: on 23 June 2009 the Victorian Wader Study Group caught a good number of Bar-tailed Godwit in Corner Inlet, Victoria, SE Australia, two of which were Orange L8 and Orange R9, both aged 1 at the time. In May 2010, R9 was seen at Daijyu-garami, Higashiyoga-cho, Saga-ken in Japan by MIYAZAKI Yasuo on two occasions. A year later, on 02 May 2011, Noriyuki YAMAGUCHI recorded R9 and L8 together at Daijyu-garami. R9 was subsequently not seen until April 2015, when Craig Brelsford recorded it in Jiangsu, China. L8 was not seen again until mid-April 2016, when it was again recorded at Daijyu-garami. Earlier that month R9 had been seen at the same location by Kenji Mztsuo.

This past April, 8 years after first having been banded, both birds still maintain a strong affinity to their Japanese spring stop-over site and (possibly) each other (at least in terms of migration timing): on 27 April 2017 YAMAMOTO Masaaki photographed L8 at Daijyu-garami, followed a day later by R9 at the same location.

Malaysia
Stanley Shao recorded a Victorian-flagged Red-necked Stint near Tawau, Sabah on 16 August 2016, a bird presumably well on its way back to Australia.

Within Australia
Last year we reported on Ruddy Turnstones Orange WAH and YSJ, flagged aged 1 at Flinders in November 2014 and Port Fairy in October 2013 respectively. Subsequently they were seen on migration at Ceduna in SA in April and May 2016. At the time we speculated whether 'WAH' may have moved as a young bird to a new summer location close to Ceduna or whether it may have been making its way on migration from Victoria. As luck would have it both birds were recorded again by Andrew Brooks. YSJ was seen in mid-October and late November 2016 at Point Bell near Ceduna and WAH was recorded both in early January 2017 at Point Brown and early April 2017 at Cactus Beach, Penong (together with YSJ!). These sightings do seem to indicate that both birds now winter along the central South Australian coastline.

South Australia
A total of 413 South Australian-flagged sightings were reported, of which 205 observations (Table 3) involved birds away from the main banding sites (Thompson Beach, Yanerbie Beach). These numbers are substantially higher than the 110 and 167 observations reported in 2014/2015 and 2015/2016. This is largely due to an increase in sightings within South Australia as well as integration of the local South Australian sightings database into the main database, allowing for more comprehensive reporting.

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

Species	Australia	China (mainland)	Indonesia	Japan	Malaysia	Republic of Korea (South Korea)	Russia	Republic of China (Taiwan)	Total overseas	Total sightings
Curlew Sandpiper	2								0	2
Great Knot							9		9	9
Greenshank	3								0	3
Grey Plover	9					1			1	10
Red-necked Stint	14	2	1		1			1	5	19
Ruddy Turnstone	243	3						5	8	251
Sanderling	73	24	1	11			3	7	46	119
Total	**344**	**2**	**11**	**1**	**29**	**1**	**12**	**13**	**69**	**413**

Russia
All Great Knot sightings from Russia were from the Khairusova and Belogovaya Rivers estuary on the Kamchatka Peninsula. Other observations included Sanderling Orange/Yellow ASX seen by Peter van der Wolf in Piltun Bay, Sakhalin Island in August 2016 and Sanderling Orange/Yellow ASD seen at the Ola Lagoon, Sea of Okhotsk by Igor Dorogoy in early June 2017. The latter is one of the northernmost coastal staging areas along the Russian coastline before birds have to make a directional choice: continue to follow the coast line north or cross the Siberian landmass towards the Arctic breeding grounds.

South Korea
An exciting resighting of a South Australian-flagged Grey plover came from Gochan Tidal Flat in South Korea – Orange/Yellow CLV was seen there by Eugene Cheah in late April 2017. First banded in October 2014 on Thompsons Beach, CLV was twice recorded locally in October 2016.

Japan
Eleven observations were received from Japan, all involving Sanderling. The oldest bird among these was Orange/Yellow 08, first banded in March 2010 in Brown Bay, Port MacDonnell (age 1) and retrapped at the same location in March 2011. This individual has never been reported before, locally or elsewhere.

In contrast, some birds just love the limelight: first banded age 2+ at Nora Creina in late March 2016, Orange/Yellow BRT, it was resighted on 22 August 2016 on Ohsaki beach, Kahoku-shi. On 09 September the bird was seen on Ajiro beach, Seiro-cho, a distance of 300 km to the northeast. Three days later BRT was seen at the Mouth of the Takase-river, Rokkasho, Aomori, nearly another 400 km further north! By 19 September the bird was back at Ohsaki Beach, having spent at least 4 weeks in Japan by that point.

Malaysia
At Kota Belud, Sabah, Azahari Reyes recorded an Orange/Yellow Red-necked stint in early September 2016.

Indonesia
Two sightings of South Australian-flagged were reported from Indonesia: a Red-necked Stint and a Sanderling. In August 2016 Rusman Budi Prasetyo took a photograph of an Orange/Yellow (left leg) Red-necked Stint near Surabaya, East Java. The flags on the left leg indicate this bird was banded at Yanerbie Beach, Streaky Bay.

Husnaeni Nugroho saw Sanderling Orange/Yellow HH at Serangan on Balii in early May 2017. First banded in December 2012 in Canunda National Park this is the first ever resighting for this bird. Photos taken by Husnaeni indicate HH has lost its plain yellow flag.

Tasmania
A total of 154 Tasmanian-flagged sightings were reported, of which 37 observations involved birds away from the main banding site (King Island), similar to the 42 and 49 observations reported on in 2014/2015 and 2015/2016. Resighting efforts by Adrian Boyle, Katherine Leung and Peter Crighton on King Island resulted in extremely valuable information on a range of individual Ruddy Turnstones, many of which had never been recorded away from the island (or even since banding).

Table 4. Sightings of King Island (Tasmania)-flagged waders seen overseas and across Australia

Species	Australia	China (mainland)	Indonesia	Japan	Republic of China (Taiwan)	Total overseas	Total sightings
Red-necked Stint	4					0	4
Ruddy Turnstone	135	4	1	1	9	15	150
Total	**139**	**4**	**1**	**1**	**9**	**15**	**154**

As previously reported - Ruddy Turnstone Orange/Blue WMA was equipped with a geolocator put on King Island, but decided to stay in NSW rather than returning to Tasmania to allow us to retrieve the unit. WMA was reported from Newcastle, NSW on multiple occasions between 23/10/2015 and 17/02/2016. Judith Thomas observed WMA yet again in November 2016 at Newcastle Beach.

Some remarkably resighting-prolific Ruddy Turnstones were seen yet again. Orange/Blue WMJ (previously EW) was recorded four times in the Darwin area between October and December 2016.

Originally banded as 2+ year old Orange/Blue EW near Currie, King Island in March 2009 this bird has been retrapped every year between 2011 and 2015 at the same location. In 2015 it was provided with flag WMJ. Since 2009 this bird has been recorded 21 times in the Darwin Area (including the past season's observations). Although never recorded overseas, these observations are testament to the species' high site fidelity in the wintering areas as well as in staging areas.

That one never should give up hope for long-lived birds such as Ruddy Turnstones is shown by Orange/Blue ND: banded on King Island in November 2010 the bird was never retrapped again or reported from the flyway. However, during a Shorebird 2020 count on Perkins Island in February 2017 Michael Hyland took photos of ND alive and well..

Sightings of Migratory Waders Leg-flagged elsewhere and then seen in Victoria, South Australia or Tasmania in 2016/2017

Joris Driessen, Rob Patrick, Clive Minton, Roz Jessop and Maureen Christie

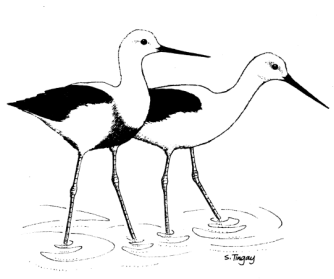
A total of 159 birds banded overseas, interstate or seen away from the banding site were recorded across Victoria (29), South Australia (120) and Tasmania (10). This was an increase on the 40 and 84 sightings reported in 2014/2015 and 2016/2015 respectively (VWSG bulletin 38, 39). This increase is largely a result of extensive search efforts away from banding sites in South Australia in the past season, predominantly involving Ruddy Turnstones.

Eighteen of the Victorian sightings were of birds flagged interstate and 11 were flagged overseas. No Victorian-flagged birds were seen away from banding sites in the state. The latter does not reflect a decrease in search efforts in the past year, but rather a focus on searching at banding sites (e.g. Stockyard Point, Werribee, Corner Inlet). In fact, from these areas a very impressive 636 sightings of Victorian-flagged birds were submitted, involving fewer than 10 observers. Better still, over 99% of these records involved engraved leg flags!

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

Species	Alaska	China	New Zealand	Russia	Total overseas	Australia					Total AU	Total
						NT	QLD	SA	Tas	VIC		
Banded Stilt					0			1			1	**1**
Bar-tailed Godwit	1	3			4		1				1	**5**
Great Knot				1	1						0	**1**
Greenshank		3			3						0	**3**
Grey Plover					0			1			1	**1**
Red Knot			1		1	1					1	**2**
Red-necked Stint				2	2			1			1	**3**
Ruddy Turnstone					0			4	3		7	**7**
Sanderling					0			6			6	**6**
Total	**1**	**6**	**1**	**3**	**11**	**1**	**1**	**13**	**3**	**0**	**18**	**29**

The most exciting observation of the past season was made by VWSG member Peter Crighton. Over a couple of days in mid-November and mid-December, Peter managed to read over 300 Bar-tailed Godwit flags. Many of these birds had not been sighted in the flyway since banding. One of the highlights from Peter's observations was the sighting of Alaskan flagged Black '6D', about 12,000 km from its breeding grounds. At the time this bird was at least 9 years old.



Report History of Bar-tailed Godwit '6D'

Banding
04/07/2009 Colville River, North Slope (70.00, 151.00) Alaska, United States of America
Band Number 86403735 (6D) Aged 2+, male (tending chicks)

Sighting
04/10/2011 Stockton Sandspit, Hunter Estuary, near Newcastle (-32.88, 151.79) Australia
(6D) Liz Crawford and Chris Herbert

08/10/2011 Stockton Sandspit, Hunter Estuary, near Newcastle (-32.88, 151.79) Australia
(6D) Liz Crawford and Chris Herbert

12/10/2012 CORNER INLET (-38.67, 146.33) Australia
(6D) Adrian Riegen and Clive Minton

20/04/2013 YALU JIANG SITE 5 (39.82, 123.95) People's Republic of China
(6D) Qingquan Bai

13/11/2016 Shoal Inlet Entrance (South side), Robertson's Beach (-38.68, 146.82) Australia
(6D) Peter Crighton

Other interesting observations were Bar-tailed Godwit from Queensland, Chongming Dao and Yalu Jiang in China; Red Knot from the Northern Territory and New Zealand; and Great Knot and Red-necked Stint from the Kamchatka Peninsula, Russia.

South Australia
Nineteen of the South Australian sightings were of interstate-flagged birds. Ninety-nine birds were recorded away from their banding site, but within the state, and two were flagged overseas.

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

Species	China	Total overseas	Australia					Total AU	Total
			SA	Tas	VIC	WA	SW WA		
Great Knot	2	2						0	**2**
Grey Plover		0	1					1	**1**
Red Knot		0			1	1		2	**2**
Red-necked Stint		0	4		2			6	**6**
Ruddy Turnstone		0	94	6	6	2	1	109	**109**
Total	**2**	**2**	**99**	**6**	**9**	**3**	**1**	**118**	**120**

A Great Knot with White/Black flags, banded in Chongming Dao, China, was seen by Mary-Ann van Trigt in February 2017 on Thompson Beach. In the same month, Andrew Brooks recorded Black/White 'K96', first banded in April 2015 as an adult, on St Peters Island.

Ruddy Turnstone Yellow '8S', first banded as an adult on southward migration in Roebuck Bay in August 2010, was seen by Andrew Brooks on Cactus Beach near Penong on two occasions in April 2017.

Kent Treloar saw Red Knot Yellow 'ZZC' at Chinaman Wells on the Yorke Peninsula in February 2017. ZZC was banded as a one year-old in July 2010 in Roebuck Bay and has been recorded multiple times in the same area since then. This is the first sighting of this bird away from the West Australian banding site.

The huge increase in South Australian-flagged birds seen away from the banding sites is almost exclusively the result of the efforts expended by Katherine Leung, Emilia Lai and Peter Crighton in late November - early December 2016. Together with ongoing sighting efforts by, in particular, Maureen Christie and Bob Green, a very substantial amount of information has been collected in the past field season.

Tasmania

Of the ten sightings in Tasmania of interstate-flagged birds, six were from South Australia and four from Victoria.

Scanning efforts on King Island by, in particular, Adrian Boyle, Katherine Leung and Peter Crighton, resulted in a total of 114 sightings of Tasmanian-flagged Ruddy Turnstone. This provided an extremely valuable addition to our long-term dataset for this species.

Table 3. Sightings of overseas-flagged, interstate-flagged and Tasmanian-flagged (away from banding site) waders on King Island (Tasmania)

Species	SA	VIC	Total
Bar-tailed Godwit		1	**1**
Red-necked Stint	1		**1**
Ruddy Turnstone	3	3	**6**
Sanderling	2		**2**
Total	**6**	**4**	**10**

Extracting Ruddy Turnstone at Stokes Point, King Island, Tasmania, 2017 (photo Wendy and Alan Pilkington

Sightings of Oystercatchers Leg-flagged in Victoria, South Australia and King Island, Tasmania in 2016/2017

Joris Driessen, Rob Patrick, Penny Johns, Clive Minton, David Trudgen and Maureen Christie

Introduction

The tables present all reported sightings of Pied and Sooty Oystercatchers flagged in Victoria, South Australia and Tasmania (individual colour bands and engraved leg flags) that were seen between July 1, 2016 and June 30, 2017.

Because sightings are received until well after the end 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 the vast majority of data has been received for 2016/2017. Note that many of the sightings are of the same birds many times over, particularly in areas where dedicated wader watchers are active.

A stunning 389 sightings were processed for this report, an annual haul not recorded for many years. Incredibly, 365 of these involved fully read flag or colour band combinations! Special mention is due to Gary Matthews, Peter Crighton, Maureen Christie and Richie Todd for their efforts in the field. BirdLife Australia kindly provided flag sightings collected during the 2016 Hooded Plover Biennial Count.

Victoria

A total of 311 observations of Victorian-flagged Pied and Sooty Oystercatchers were reported from across SE Australia (Table 1).

Table 1. Sightings of Victorian-flagged Oystercatchers

Species	Victoria	King Island	New South Wales	South Australia	Tasmania	Total sightings
Pied Oystercatcher	254	5	39	6	4	**308**
Sooty Oystercatcher	3					**3**
Total	**257**	**5**	**39**	**6**	**4**	**311**

The season's longest movement for a Pied Oystercatcher goes to Yellow 103. First banded in July 2016 Off Mann's Beach, Corner Inlet, this bird had moved 1,225 km by late January 2017 when it was seen at the Clarence River mouth, Yamba NSW, by Greg Clancy.

Similarly exciting was Hazel Britton's discovery of a Pied Oystercatcher with a Blue flag in Nelson Bay, southern Tasmania. Although the engraving was not read, only a handful of birds on the Bass Coast (Inverloch) have ever been equipped with a blue engraved flag, meaning that this bird covered a distance of 682 km, virtually due south.

The furthest movement west by a Pied Oystercatcher amounted to 456 km – Catherine Bell recorded Red J9 at Nora Creina in November 2016. J9 was first banded as a 2 year-old at Stockyard Point in April 2008.

One of the particularly exciting aspects of Oystercatchers is age and this season does not disappoint in that regard either.

Since Pied Oystercatcher Blue A4 was caught near Inverloch and equipped with its flag in 2013 it has been recorded several times in the same area, most recently in November 2016 by Jonathon Stevenson. However, the retrap at the time confirmed that originally this bird

was caught at exactly the same location on 15 May 1988 (age 2+). Last year's resighting makes A4 therefore at the very least 30 years old!

Another oldie is Black H9, formerly YWO/YYM, seen as recently as February 2017 by Maureen Christie near the Cape Banks Lighthouse, South Australia. First banded as a 2+ year-old in 1990 on Barry Beach in Corner Inlet, this bird was seen twice in same area in the mid-90s. By 2012 it had moved 400 km to the Cape Banks Lighthouse area in South Australia where it was seen several years before it was caught again and equipped with its H9 flag. Since then it has been recorded at the same location a further 15 times. By now this bird is at least 29 years old.

The third oldest Pied Oystercatcher recorded in the past season is Yellow KZ, formerly RNR/YYM. Despite having been banded, age 3+, in 1993 Off Mann's Beach in Corner Inlet, within the reporting period this bird had only ever been resighted twice, once in 1995 and once in November 2016. At the time of writing further information was received. A recent sighting by Jonathon Stevenson on 8 August 2017 at McLoughlin's Beach makes this bird now at least 27 years of age.

Of the few Sooty Oystercatchers recorded YPG/WWM stands out. First banded as an immature bird, age 2, at Flinders in 2002 it was first resighted in 2004 by Penny Johns and subsequently recaptured at the same location in 2010. Not only was the colour band combination on this 17 year-old bird still legible this past season (March 2017), but the observer was yet again Penny Johns!

South Australia
A total of 57 and two observations of SA-flagged Pied and Sooty Oystercatchers were reported respectively.

Sooty Oystercatcher Black A4 was first flagged in March 2009 near Beachport South Australia as an immature bird, aged 2+, where it has been recorded nearly annually since.

Sooty Oystercatcher Black K7 (banded at Blackfellows Caves in April 2013, age 1) has shown to be somewhat more adventurous, having been seen near Carpenters Rocks, Pelican Point, Gerloff Bay and Port MacDonnell since then.

Nearly all South Australian Pied Oystercatchers were recorded within the state, with the exception of Black L5 which was seen at the Glenelg River estuary on the border with Victoria by Bob Green in February 2017.

Table 3. Sightings of South Australian-flagged Oystercatchers

Species	South Australia	Victoria	Total sightings
Pied Oystercatcher	56	1	**57**
Sooty Oystercatcher	2		**2**
Total	**58**	**1**	**59**

Tasmania
A total of 17 observations of Tasmanian-flagged Pied Oystercatchers were reported, of which 11 were seen on King Island and 6 (involving two birds, P2 and N3) were recorded on the mainland. These are the first sightings of King Island Pied Oystercatchers on the mainland.

Black P2 was seen by Maureen Christie and Vivien Hollyoake at Nene Valley in November 2016 and by Jeff Campbell near Port MacDonnell in December 2016 and again in January 2017. P2 was first banded age 2 near Manuka, King Island which lies 375 km from the furthest resighting at Nene Valley. Incidentally, Black P1 was seen near Yanakie by Joris Driessen on 23 July 2017.

Black N3 was recorded by Gary Matthews, Allison Nisbett and Dan Weller on three separate occasions between April and June 2017 at Stockyard Point. These are the first sightings for this bird, which as was banded in November 2014 near Manuka, King Island as an immature bird, aged 3+.

Table 4. Sightings of King Island (Tasmanian-flagged) Oystercatchers seen in SE Australia

Species	King Island	South Australia	Tasmania	Victoria	Total sightings
Pied Oystercatcher	11	3	0	3	**17**
Total	**11**	**3**	**0**	**3**	**17**

UAV image of Crested Terns nesting at Seal Rocks Phillip Island Nature Parks in late 2016 (Photo Rebecca Macintosh, permitted use of UAV under Australian Fur Seal research project at the Nature Parks)

Tern Breeding and Banding Report 2016/17

Clive Minton, Joris Driessen, Robyn Atkinson, Maureen Christie, Roz Jessop, Susan Taylor and Rob Patrick

Caspian Tern

Victoria

Location	Breeding pairs	Chicks banded
Mud Islands	40	43
Corner Inlet	65	31
Totals	**105**	**74**

Caspian Terns had a good breeding season in 2016/17 with a record breeding population at Mud Islands and good numbers of chicks fledged there and at the other main colony in Victoria, on Clonmel Island in Corner Inlet. A record total of 74 chicks were banded.

For the last 30+ years the number of pairs of Caspian Terns breeding adjacent to the Crested Terns on Mud Islands has usually varied between 15 and 25 pairs. This year it reached 40 pairs. For about the fourth successive year the Caspian Terns nested on the new large sand bank on the south-west side of Mud Islands, more than half a kilometre away from the large Crested Tern breeding colony. This seems to suit them better, probably because they are a little further removed from the main Silver Gull nesting areas. Caspian Terns are not as successful as Crested Terns in protecting their eggs and young from predation by Silver Gulls.

Both Caspian Tern colonies were extremely fortunate in narrowly avoiding being inundated by a storm tide which took place during windy weather in mid-December. In many years these occasional storm tides do cause nest losses, especially at Clonmel Island.

South Australia

Twelve Caspian Terns were banded during cannon-netting activities; most of these were at Thompson Beach.

Crested Tern

Victoria

Location	Breeding pairs	Chicks banded	Retrapped banded adults
Mud Islands	2500	1549	256
The Nobbies	4000	561	-
Corner Inlet	500	453	25
Totals	**7000**	**2563**	**281**

Crested Terns had a somewhat mixed breeding season in 2016/17. Overall there was a record 7000 breeding pairs at the three colonies we monitor annually.

At Mud Islands there were 2500 pairs, the highest for many, many years, perhaps over 20 years. They also bred successfully and 1549 chicks were banded out of nearly 2000 which probably fledged. A good sample of 256 previously-banded breeding adults was also retrapped.

By contrast, The Nobbies was ‘chaos’. The first major cohort of nests was on Seal Rocks which lies two kilometres off shore from Point Grant near The Nobbies. These nests were adjacent to the seal breeding colony on a flat rocky area where a small number of Crested Terns had occasionally previously bred in the 1960’s, before major breeding activity started

at The Nobbies in the mid-1990s. Seal Rocks is not easily accessible because of rough seas. Tern banding would have coincided with seal pupping and landing on the island is not permitted at this time as the pups are not waterproof and very vulnerable to disturbance. Although it was not possible to monitor the breeding terns closely, it does appear that some 2000 pairs may have nested there and that almost all were unsuccessful. Later in the season (early December), Crested Terns did start to lay at their traditional site on the grassy top of The Nobbies. However, these were also relatively unsuccessful, mainly due to predation by Silver Gulls. Only 561 chicks were banded. This is a huge decrease from the 2994 chicks banded in the previous year.

Corner Inlet had a 'normal' year, with about 500 breeding pairs, which is the norm (average) for the last 38 years. They just escaped a December storm tide and so productivity was high, with 453 chicks being banded.

Overall, 2563 Crested Tern chicks were banded. This is a little down on the number banded in most recent years.

South Australia
A total of 201 Crested Terms were banded in South Australia. Most of these were chicks at Baudin Rocks Conservation Park.

Fairy Tern

Victoria
Twenty-two pairs laid eggs in December in a small colony on a sandy island on the south-west side of Mud Islands. These just escaped being flooded by a storm tide in December and quite a number of the nests successfully hatched in January. Six chicks were banded. These were the first Fairy Tern chicks to be banded by the VWSG in Port Phillip Bay since the early 1980s. As usual, any small colonies of Fairy Terns which may have attempted to nest in Corner Inlet were not successful. We do not have records of any Fairy Tern nesting on French Island or at Observation Point, Rhyll. The sand bank geography in Anderson Inlet at Inverloch was also not suitable for Fairy Terns to nest this year.

South Australia
A total of 234 Fairy Terns were banded in South Australia. Most of these were at Cowrie Island – see separate report.

Little Tern

South Australia
Seventeen Little Terns were banded in South Australia mainly as part of the nest stewardship program.

In addition to 20 Whiskered Terns were banded in South Australia.

Crested Terns nesting at The Nobbies – November 2016 (Photo Phillip Island Nature Parks)

2017 Fairy Tern breeding event on Cowrie Island, South Australia

Jeff Campbell and Maureen Christie

On 4 January 2017 Kay Muggleton reported that Fairy Tern were flocking over Cowrie Island near Beachport, South Australia and that she had erected a 'Nesting Shorebirds' sign. By 10 January nests containing one or two eggs and a flock of around 100 birds were found on the island by David Trudgen. This was the first time since 2009 that Fairy Tern had bred on the island. Members of Friends of Shorebirds SE inc. visited the island on 24 January and banded 19 chicks. There was one nest found with two predated eggs, three scattered abandoned eggs and one chick so recently hatched it was still wet. A further 80 eggs were counted in the colony. It was noted that chick shelters placed around the colony in 2009 were still present, although some showed the signs of having been exposed for eight years, a new-looking empty beer can was found not far from the colony, but there was no evidence of nests having been trampled, although there were empty nest scrapes. The colony consisted of an area of approximately 80 m^2 (10 m x 8 m) with the highest density of nests towards the centre of the colony and the lowest towards the edges.

We visited the island again on 28 January and banded a further 37 chicks. On that date, the egg count had increased to 92 still to hatch. On the next visit, on 3 February, another 70 chicks were banded. It was still not possible to flag any of the chicks present as they were too small. Around 80 eggs were still to hatch. Unfortunately, it was not possible to visit the island on the next four planned occasions, either because we were unprepared to risk disturbing the colony during very windy weather or because it was impossible to safely reach the island from the beach due to extremely high tides and swell. Therefore, the final visit was not made until 4 March when only two chicks were found, and subsequently banded, and no further eggs were present. Although there were plenty of birds flying around in the area, very few were seen to land on the island. As it was 28 days since our previous visit, and fledging is said to be 19 to 21 days, there had been time for the chicks previously banded to have done just that. As very few eggshell or chick remains were seen a mass predation event was thought to be unlikely.

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Tern Recovery and Flag Sighting Report 2016/17

Clive Minton, Joris Driessen, Robyn Atkinson, Maureen Christie, Roz Jessop, Susan Taylor and Rob Patrick

As for waders, almost all significant movements of terns each year now derive from sightings of flags (including engraved flags). Records showing significant movements are summarised below.

Caspian Tern
There were 28 sightings of orange-flagged Caspian Terns marked at the Mud Islands and Corner Inlet breeding colonies. Most of these were of birds carrying an engraved orange flag which was able to be read in the field, enabling the birds to be identified individually. Sightings were mostly in the usual areas of the northern New South Wales coast and the Queensland coast up as far as Toorbul, near Bribie Island. Twenty were in south-east Queensland, six were on the northern New South Wales coast, whilst the two in Victoria were birds seen at Stockyard Point in Western Port.

A full analysis of Caspian Tern movements, led by Xenia Dennett, is under way and hopefully a comprehensive analysis of Caspian Tern movements will be completed for publication within the next year. Thus the full details on each sighting this year are not included in this Bulletin. Nevertheless please **do** continue to send in all sightings of engraved flags on Caspian Terns and all sightings of orange-flagged terns away from Victoria.

Crested Tern
We continue to be swamped with a wonderful procession of band numbers read on live Crested Terns by Steve McBride. These are mostly birds seen on their wintering grounds near Ballina on the New South Wales north coast in the period March to September. Many birds in the 10 – 20 year-old age range have been sighted and about ten percent of Steve's sightings relate to birds which are now more than 20 years old. Again these records are too numerous to list individually. An interim analysis will be carried out after the 2017 'season'. This should give an indication of the age structure of the Crested Tern population and hopefully an estimate of the average annual survival rate.

Little Tern
There were three particularly interesting reports of banded/flagged Little Terns. The 'best' was an orange-flagged (plain) Little Tern seen at a breeding colony on Okinawa in Japan on 10 June 2017. This was almost certainly from a good catch of 75 Little Terns made at Barry Beach on 18 March 2015.

The other two sightings of orange-flagged Little Terns were at Manly Boat Harbour in Moreton Bay on 13 September 2016 and at South Ballina, northern New South Wales, on 7 May 2017. These could also be birds from the Japanese population as many migrate along the east coast of Australia during their non-breeding season.

In contrast a Little Tern banded as a chick at Lake Conjola, on the southern N.S.W. coast, was recovered (dead) on 18 March 2017 at Mud Islands (a movement of 610 km S.W.) . There is a regular movement of Little Terns from the N.S.W. breeding population into Victoria after the end of the breeding season each year.

Fairy Tern
Fairy Terns are much less mobile than Little Terns and Victorian birds rarely move interstate. An orange-flagged bird was seen in the Gippsland Lakes in early January 2017 and could well have been breeding there. Seventy Fairy Tern chicks were banded in South Australia this year (see report in this bulletin).

Common Tern
As for the Little Tern, many Common Terns visit the east coast of Australia during their non-breeding season, that is, during the Northern Hemisphere winter. An orange-flagged bird, which would have been banded in the Corner Inlet complex or in the Gippsland Lakes, was seen on the northern New South Wales coast on 2 November 2016 and another on 13 March 2017.

Another Common Tern had its band number read in the field at Ballina, N.S.W. on 13 March 2017. It had been banded as an adult in the Gippsland Lakes on 24 January 1997. It was thus a minimum of 21½ years old. This is seven years older than the previous maximum age of an Australian-marked Common Tern.

Previous recoveries and flag sightings have shown that these Common Terns are from the population which breeds in Southern Siberia.

Fairy Tern nest at Cowrie Island, SA (Photo Maureen Christie)

Satellite Tracking of Grey Plovers from South Australia

Tony Flaherty

Previous articles in The Bulletin (No.39 Aug. 2016 and No.38, Aug. 2015) have provided accounts of the satellite tracking of Grey Plover at catch location of Thompson Beach, north of Adelaide, South Australia.

The Victorian Wader Study Group and Friends of Shorebirds SE have been assisting the Adelaide and Mt Lofty Ranges Natural Resources Management Board with shorebird banding studies along the "Samphire Coast" area north of Adelaide in South Australia (SA) since 2012. This work has sought to better understand local movements and migration of shorebirds in Gulf St Vincent. Whilst the patterns of shorebird roosting and limited areas for net deployment I have limit overall catches in comparison to other canon netting locations, the work has greatly increased the number of flagged shore and seabirds in the Gulf. The effort is being rewarded with flag resights of Great Knot at Kamchatka, Ruddy Turnstone in Taiwan and Bar-tailed Godwit in Bohai Bay and Yalu Jiang in China and Grey Plover at Incheon in the Republic of Korea.

With funding support provided through the Australian Government for the NRM Board's Samphire Coast Icon Project, ten Microwave Telemetry 5 g solar powered Platform Terminal Transmitters (PTT) have been deployed on Grey Plover in Gulf St Vincent (GSV) in South Australia (SA) since 2015. These units have been attached using 'leg-loop harnesses' and units programmed to a 10 hrs ON/48 hrs OFF duty cycle. Initial PTT deployments in 2015 and 2016 were made at Thompson Beach some sixty kilometres north of Adelaide. In December 2016, transmitters were deployed on a number of birds at Bald Hill. 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.

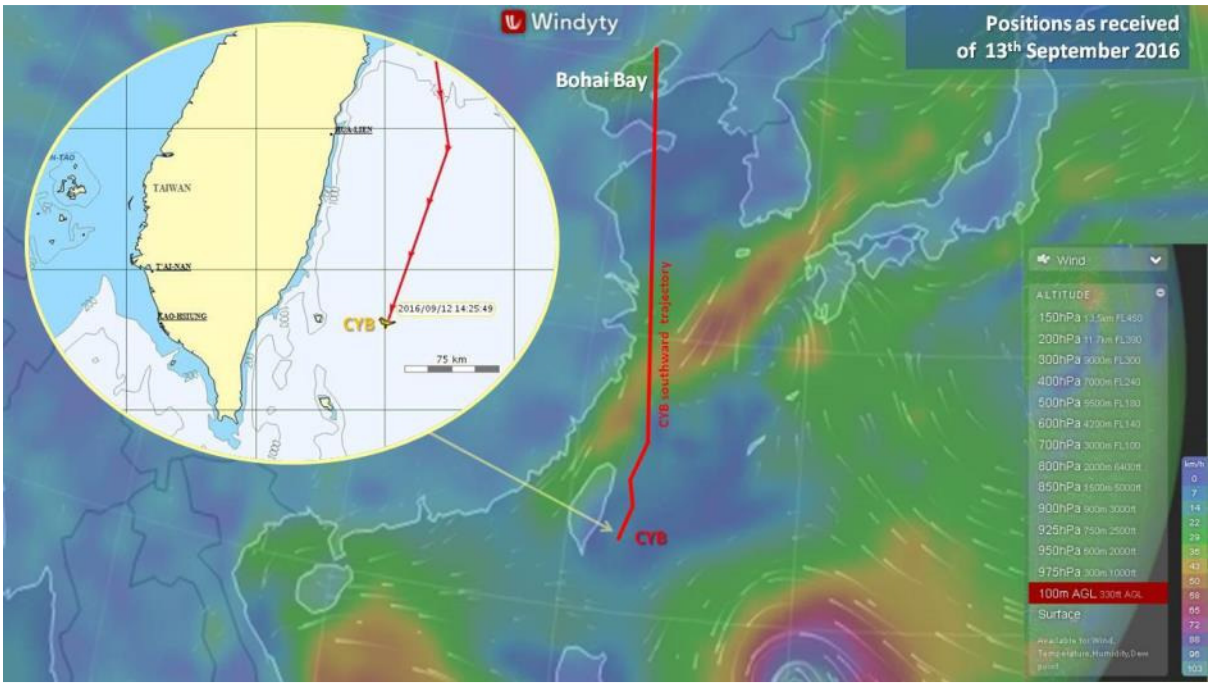
The previous 2016 Bulletin update, left off with the tracking of Grey Plover CYA undertaking northward migration from Thompson Beach on March the 14th, 2016 to an initial stopover in western Taiwan, after a five day, long-haul 7,340 kilometre flight. After a sixteen day stop over CYA departed and made landfall on the Chinese mainland making its way to the Jiangsu coast of the Yellow Sea, 180 kilometres north of Shanghai. After over fifty days in Jiangsu province, CYA left China around the 30th May, flying north-easterly towards the Sea of Okhotsk, making a short stop over on the 4th June 2016 in a tundra pond area 280 kilometres south of the Siberian coast. From there the bird flew 1,335 kilometres east, reaching Wrangel Island on the 6th June. 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. Departing on the 5th of August, CYA made a 1,245 flight, east, to the New Siberian Islands and after a brief stopover, headed 280 kilometres south of the Siberian coast where the last position received on the 7th August, she was This was and was very close to a tundra pond area where CYA appears to have had a short stop during northward migration.

Grey Plover CYB departed from Thompson Beach on the 24th March and after nine days had reached the Chinese coast after a 7,090 kilometre non-stop flight. After a brief three day rest near the city of Ningde, in Fujian province, CYB made a further hop up the coast to the Sanbei Shallows of Hangzhou Bay for another two days and then after two more days was in Laizhou Bay, Bohai Sea, near Changyi, in the northwest corner of Shandong province. After another two days the bird flew north across Bohai Bay and by the 16th April was 445 kilometres 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.

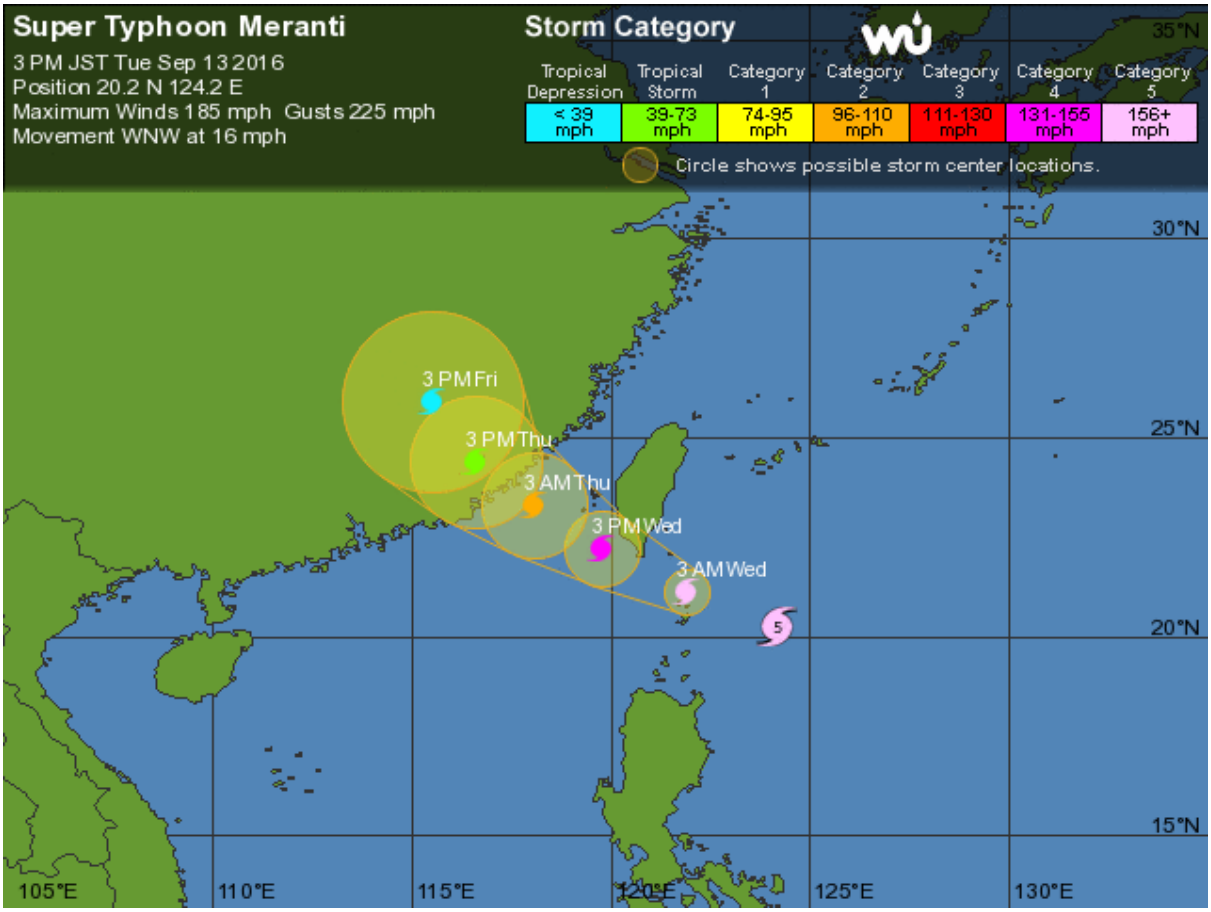
By 27th May, CYB was in transit, over Inner Mongolia and the Russian Steppes and by 3rd June reached Kolyma Gulf in the East Siberian Sea, where a brief stay prior to a final flight to Wrangel Island by the 5th June, initially settling on the south western end of the island. Plover CYB was much more mobile than CYA in the nesting territory.

Grey Plover CYB left Wrangel Island on the 24th July, headed southwest over the Sea of Okhotsk between the Russian Kamchatka Peninsula and Kuril Islands. The bird appeared to be headed to Japan, but veered west to the Russian mainland. By the 28th July, it had settled on the tidal flats of Ul'banskiy Bay in the Tuguro-Chumikansky District of Khabarovsk Krai, Russia. After a nine day stint, CYB departed to reach northern Bohai Bay, China by the 11th of August, the same location used on its' major northward migration stopover.

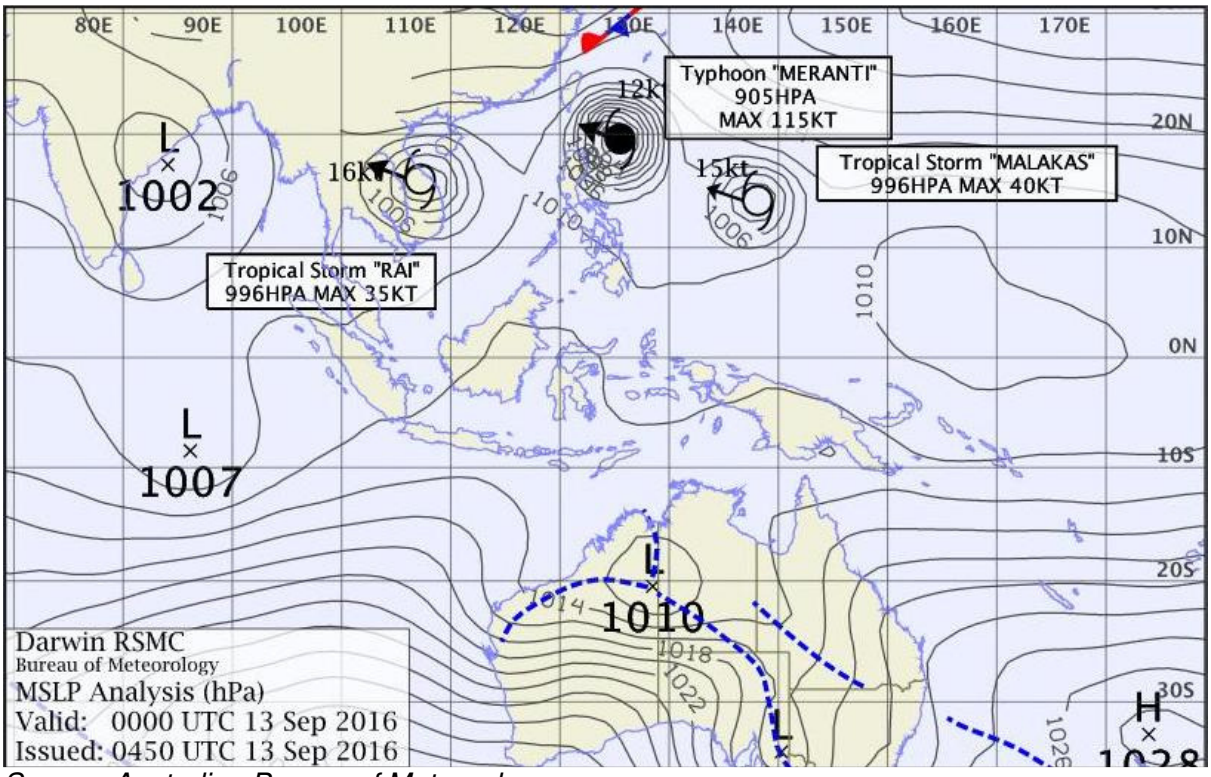
That was where our previous Bulletin update finished. Sometime after the 10th September, Grey Plover CYB left Bohai Bay, China, flying south and as of 13th September was south east of Taiwan. Hopefully CYB will be able to use strong north-easterly winds from the approaching severe tropical Cyclone tracking for Taiwan to skirt around the storm and head south over the Philippines.



At the time, the US based Cable News Network (CNN) reported Taiwan and mainland China were bracing for the approach of Super Typhoon Meranti, which was forecast to bring torrential rains and damaging winds. In 24 hours, the typhoon transformed from a Category 1 storm to a top-scale Category 5 hurricane, sustaining winds of 183 miles per hour (295 kph) with gusts up to 223 mph (360 kph). The storm was forecast to just miss making direct landfall over southern Taiwan and track through the Luzon Strait toward China.



Source: Weather Underground
https://www.wunderground.com/hurricane/western-pacific/2016/Typhoon-Meranti



Source: Australian Bureau of Meteorology
http://www.bom.gov.au/australia/charts/darwin_MSLP_00z.shtml

The bird appears to have taken advantage of strong northerly winds on the leading edge of Super Typhoon Meranti. This typhoon, Meranti, rated one of the most powerful storms in the world for 2016, transformed from a Category 1 storm to a top-scale Category 5 typhoon, skirted southern Taiwan and has reached the headed for the Chinese Coast.

CYB skirted super typhoon Meranti, and after Taiwan, passed east of the Philippines. By the 14th September, CYB was passing over Indonesia ten kilometers inland of the West Papuan coast southwest of the small village of Waibeem or Waibim.

Grey Plover CYB's landfall in West Arnhem, Northern Territory near the Aboriginal community of Maningrida.

By the 16th September 2016 Grey Plover CYB reached Australia's Top End, after a 6,200 kilometre non-stop flight from Bohai Bay in China. The bird made landfall on the coast of the Arafura Sea, near the mouth of the Anamayirra Creek about 27 kilometres east of Maningrida in the Djelk Indigenous Protected Area. By the 20th of September the bird moved to the Liverpool River Estuary, 12 kilometres southwest of Maningrida, near Bat Island, and stayed in this locality until transmission was lost on the 12th October.

CYB had traveled 11,556 kilometres from Wrangel Island and over 25,151 kilometres since leaving Thompson Beach, South Australia on 24th March 2016.

The last transmission received for Grey Plover CYB was over the 11th and 12th of October 2016, near the Liverpool River, 12 kilometres southwest of Maningrida, on the coast of the Arafura Sea in the Northern Territory, since landfall in Australia on the 16th of September.

A photo from Roger Sinclair of Fishing Tropical Australia, of Bat Island in June this year. The picture is overlooking the island in the foreground (towards the north) with Maningrida in the background. Roger notes there is an extensive tidal mudflat on the northern end that is exposed at low tide (you can just see this starting to emerge in the picture) possibly a spot your bird may frequent.

A particularly large and regular roost of shorebirds, seabirds and waterbirds at the western end of Chambers Bay. Among these birds in August 1992 were over 750 Grey Plovers. Photo from Chatto, R. (2003).

The landfall in the Northern Territory raises a number of questions. Are NT stopovers a regular part of southward migration, or was this due to the bird dealing with the typhoon system? Do Grey Plover alternate their southern non-breeding sites? Perhaps the bird is a male? The DNA sexing tests were inconclusive for this bird?

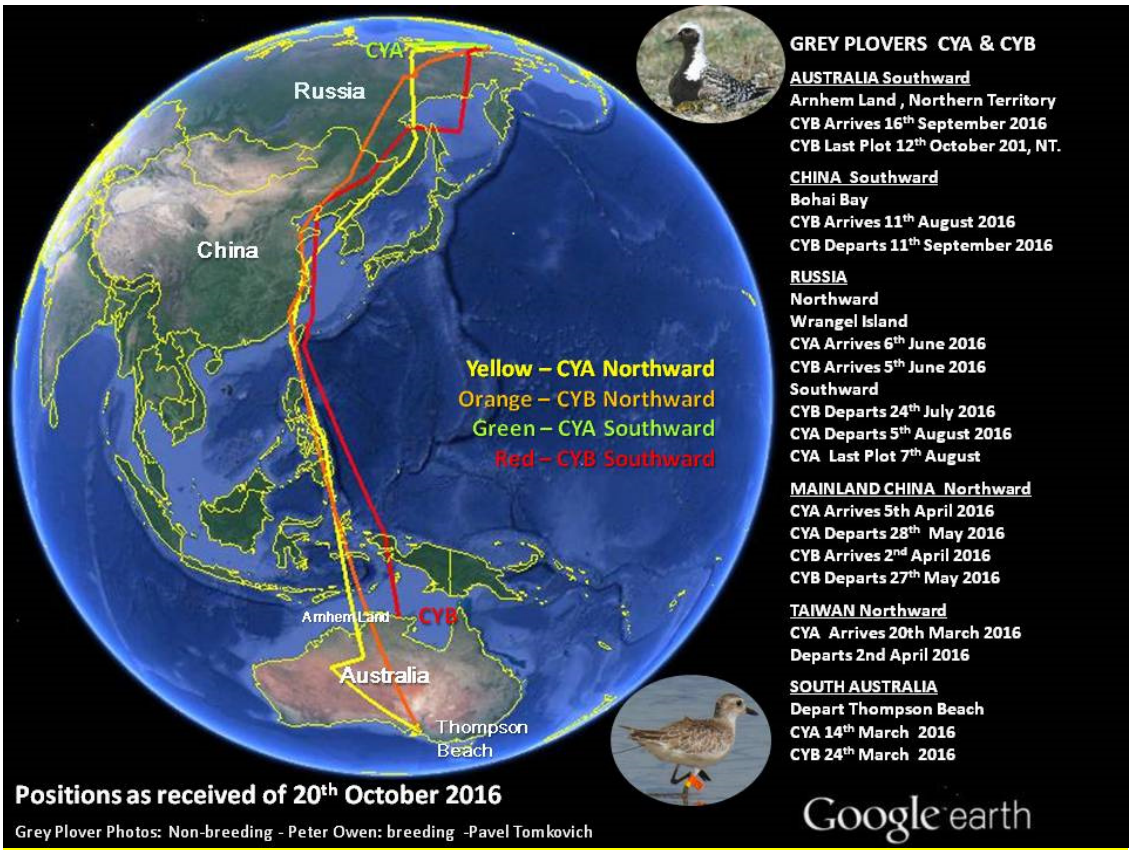
Ray Chatto, Wildlife Ranger with NT Parks and Wildlife Commission has recorded Grey Plover all around the NT coast but the area around Arnhem Land is one of the areas where he had larger counts of Grey Plovers during aerial and ground surveys he undertook between 1990 and 2001. Ray's work identified the globally significance of the Northern Territory coast and coastal wetlands for many species of shorebirds. Ray's theory is that NT wader numbers seem to have remained fairly healthy, and that perhaps shorebirds formerly overwintering in southern parts of Australia that have been massively disturbed, may now be overwintering up north where the coast is still mostly unchanged.

Recent work by Amanda Lilleyman and others, presented at the 2016 Australasian Shorebird Conference in New Zealand, suggests that shorebird population size in the Darwin region of the Northern Territory has changed since monitoring began in the 1980s. With some species declining notably, whilst others have increased, often in contrast to species trends elsewhere in Australia.

Despite the many questions, this is the first time a South Australian migratory bird has been satellite tracked from Australia to the arctic and back to Australia. Until recently, there was no information on the flyway for Grey Plovers breeding on Wrangel Island, until a single 2014 sighting of a Wrangel Island flagged bird in Jiangsu Province, East China. Other migratory species on Wrangel, such as Red Knots and Lesser Snow Geese, utilise the American Pacific Flyway. Over six hundred grey plover have been banded in Australia since 1960, but recoveries are limited. Many of the limited sightings have been in Japan.

What is remarkable is the validation that these WA and SA satellite-tracked birds have made of earlier biometric work. Clive Minton's and Lorenzo Serra's 2001 analysis of biometric data suggested that north-western Australian Grey Plovers probably utilised mainland Siberian breeding sites east of the Lena River, and that some south-eastern Australian birds may breed on Wrangel Island, of the coast of northeast Siberia.

In December 2016, transmitters were deployed on a number of birds at Bald Hill. Transmissions of Bald Hill birds were lost on migration, but these birds made stopovers in Sulawesi in Indonesia rather than direct flights to Yellow Sea. Remaining transmission being received of a male bird which stopped over on the Kimberley Coast, but which returned to Bald Hill South Australia over winter, and is still transmitting.



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Lake Eyre Banded Stilt 2017

Maureen Christie

Since their formation in 2005, Friends of Shorebirds SE Inc. (FoSSE) have been acutely interested in Banded Stilt. Some members have been involved in monitoring the species since 2000. Members were instrumental in locating a colony breeding in the Coorong in the summer of 2005/6. Banding and flagging of these chicks, in collaboration with the Victorian Wader Study Group (VWSG), confirmed hitherto only hinted at movement between coastal Western Australia and eastern Australia. They were also the first to notice the mass movement of Banded Stilt away from coastal south eastern South Australian sites in 2010 and strongly encouraged DENR (now DEWNR) to mount an aerial survey to discover where they were breeding. Once again in collaboration with the VWSG, members participated in an expedition that banded chicks from this breeding colony.

It was in this colony that an individual banded as a chick in the Coorong was observed escorting its own chick from the nest site.

Banded Stilt escorting chicks to water (Photo: Clare Manning)

Along with Reece Pedler, members were involved in the discovery of a breeding event at Lake Torrens in 2011. In collaboration with both Reece and the VWSG, chicks were banded with a cohort code. An individual banded in this breeding event was later observed by a VWSG member on a station near the Canning Stock Route.

Much to our group's delight, Reece commenced a PhD on Banded Stilt in 2011. Living at nearby Roxby Downs, Reece had been involved with monitoring the Stilt before he commenced his PhD. Obviously, with a hardworking, enthusiastic, student involved, our group took a subsidiary role. However, we continued to be involved in flag searching, especially in the South East, as well as monitoring satellite images of the pastoral lands.

In 2012 Reece discovered a breeding event on a small island in Lake Eyre South. Our group was involved in a visit to this colony in April 2012, when two Stilt were fitted with satellite transmitters as part of Reece's project. Ultimately this event failed due to predation by Silver Gulls. At the time, there was still hope that there may be another breeding attempt that year. Banded Stilt were observed mating late in May, and water from Queensland had started to arrive at the northern end of Lake Eyre.

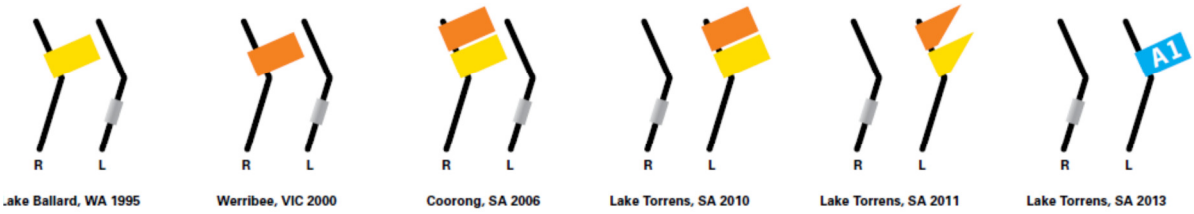
It was then that FoSSE applied to Nature Foundation for funds to undertake future investigation of breeding in the Lake Eyre Basin. The Foundation generously granted us

funds, despite us advising that shortly after our application was lodged, the hoped for second breeding event did not materialize.

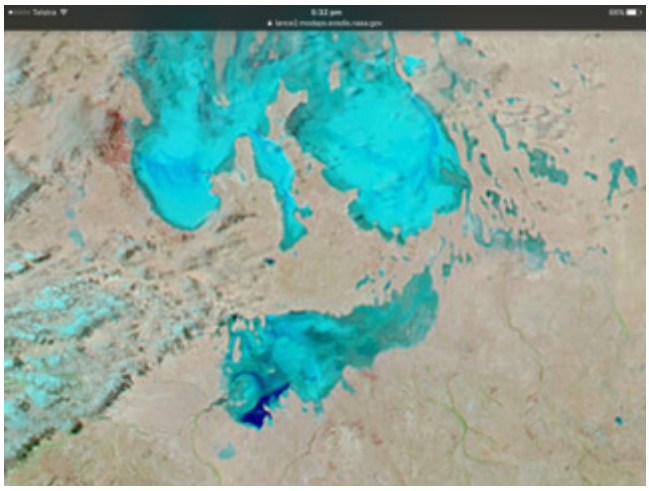
Since then, the funds have languished in our account, waiting for another breeding attempt on Lake Eyre. Of course, members stayed active in searching for flags and supporting Reece in his fieldwork whenever possible.

In 2013 there was another successful breeding event on Lake Torrens, and group members assisted in several field trips that resulted in a large number of chicks being banded and flagged with blue flags.

Banding and flag codes: note 2006, 2010, 2011 & 2013 all cohort banded chicks



It seemed that the opportunity to study Banded Stilt on Lake Eyre was never going to present itself. And then, in January 2017, Reece advised that one of his satellite transmitter-tagged Stilt had moved to Lake Eyre South. By now Reece was no longer living at Roxby Downs and was not in a position to investigate. The group was very much aware that every recorded breeding event in Lake Eyre since 2000 had been subject to serious predation by Silver Gulls.



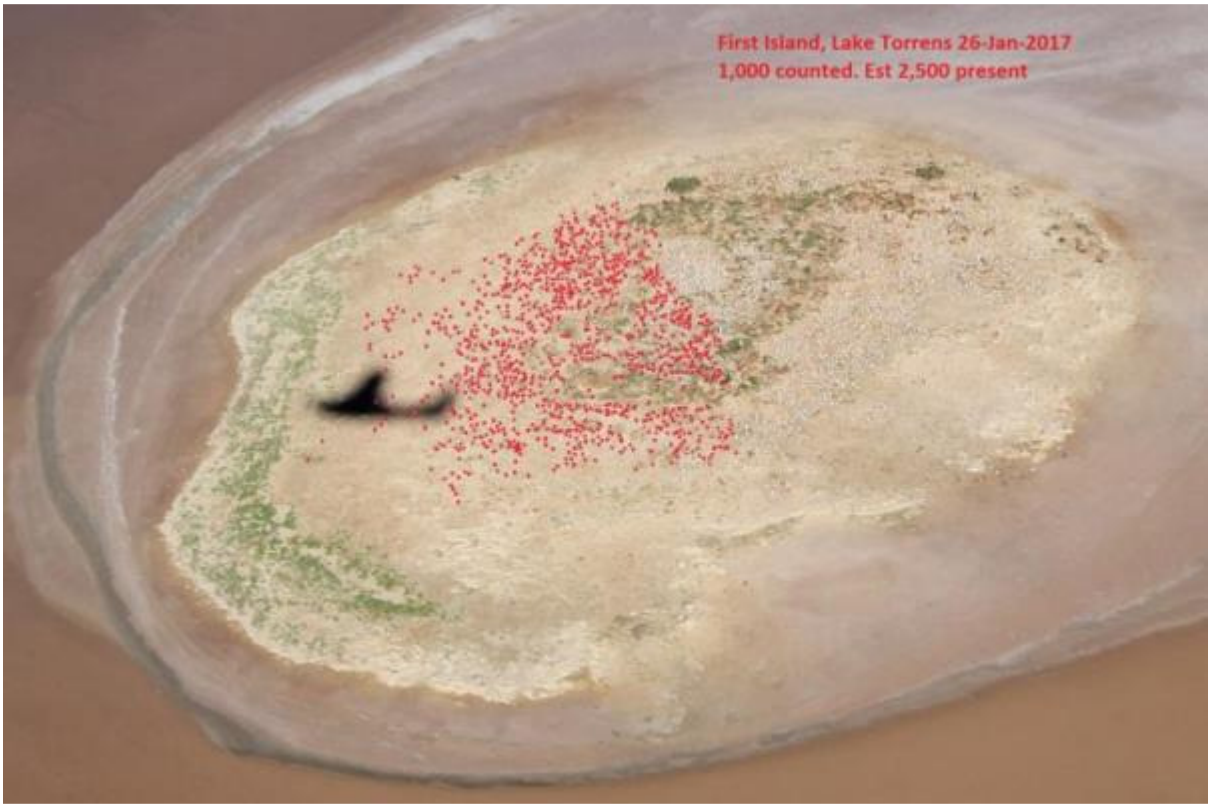
Satellite image of Lake Eyre South from Lake Eyre Yacht Club site 21.1.2017.

Satellite images showed water in both Lake Eyre South and Lake Torrens and so it was decided to utilise the funds provided by the Foundation to undertake an aerial survey. In view of the recent history of nesting on Lake Torrens, it was also decided to search this lake.

The survey was conducted on 26 and 27 January 2017.

On Thursday we departed Port Augusta in the morning and surveyed Lake Torrens. Our survey involved most of the lake, targeting the areas covered by water. It was estimated that only 20% of the lake was covered by water with the main inundated areas around the points of inflow. Deeper water was present on the western side particularly around Andamooka Island and to the North. Aggregations of Banded Stilt were found on two islands.

Approximately 2000 - 2500 breeding Banded Stilt were found on the same island that they were breeding on in 2013.



This photograph is the main island with an estimate made by Reece Pedler of the 2,500 Banded Stilt present. An additional aggregation was found approximately 3 km to the south east with approximately 200 birds that may have been nesting. A significant number of Banded Stilt (hundreds to thousands) were also found in the water around Lake Torrens, particularly in the vicinity of the breeding colonies.

A number of small colonies of Silver Gull, that appeared to be breeding, were sighted in the vicinity of the Banded Stilt breeding colony. In total, there were less than 1000 Silver Gull that appeared to be breeding. However, it should be noted that FoSSE have been advised by Clive Minton, VWSG member who has been involved in many breeding events of Banded Stilt, that if there are any breeding Silver Gull at all within the vicinity of a small breeding colony they will be predated and the colony will fail to fledge any chicks.

Large numbers of ducks (1000s), most likely Grey Teal and Hardhead, were observed in Lake Torrens. Breeding Avocets were present. There were also approximately 1400 small grey waders which could not be identified from the plane. These were likely to include Red - necked Stint and Sharp-tailed Sandpipers.

There was no sign of stilts breeding on Lake Eyre South or North. Shallow water covered approximately 80% of Lake Eyre North.

Lake Eyre South
On Thursday, continuing north, we flew to Lake Eyre South. This lake contained very little water and no significant observations were made. Co-ordinates from the satellite-tagged Banded Stilt were checked with no result. Following our survey of Lake Eyre South, we put down in William Creek for the night.

Lake Eyre North
On Friday morning, we flew direct to Lake Eyre North from William Creek. Lake Eyre North had a reasonable coverage of water, approximately 80%; however it appeared to be fairly shallow. There were large numbers of pelicans on the north side of Lake Eyre North where the Warburton flows in. Our survey included the western edge from William Creek north and Belt Bay. No congregations of Banded Stilt were observed.

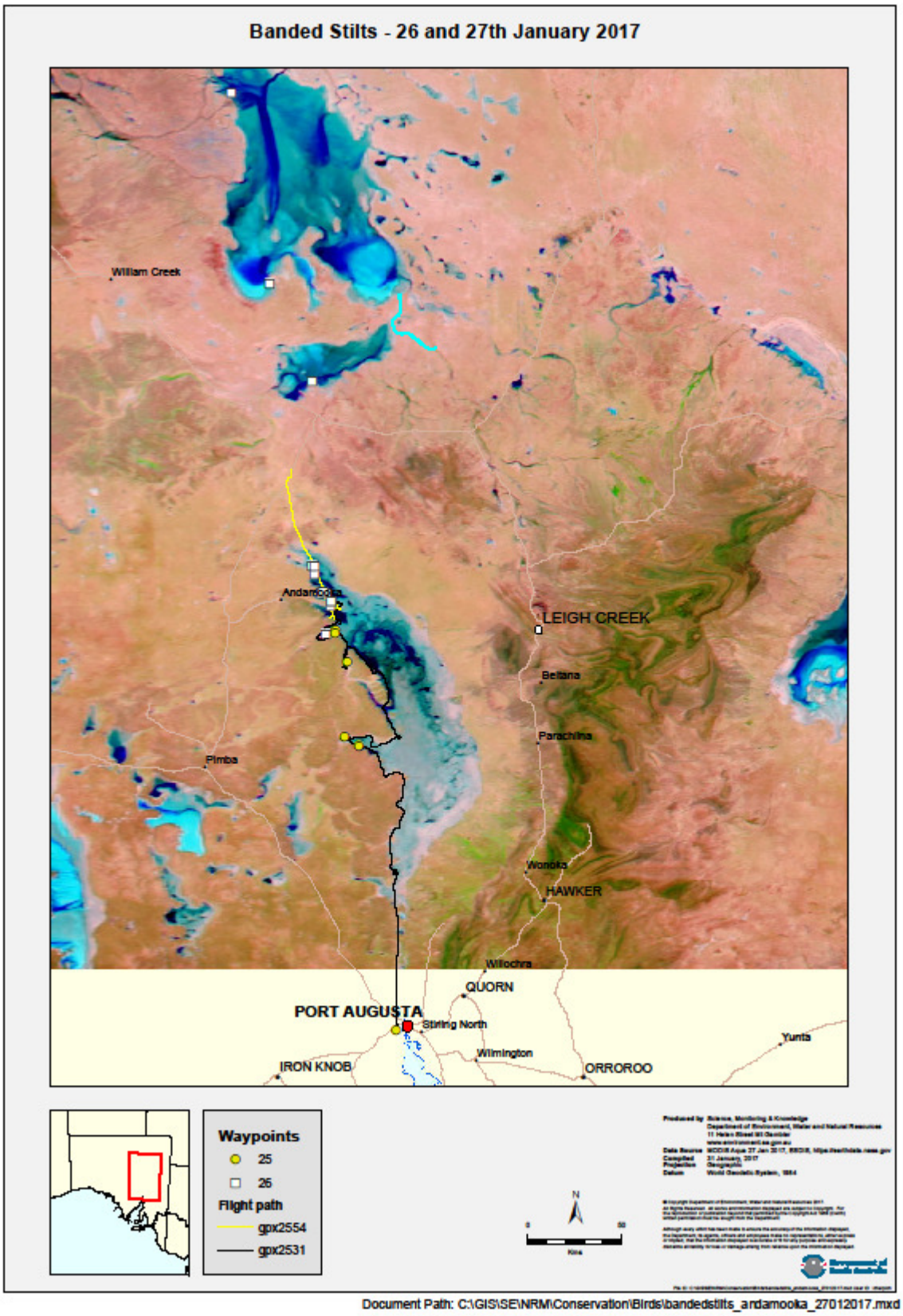
The area where the satellite-tagged Banded Stilt had been recorded on Lake Eyre South was checked both Thursday afternoon and Friday morning. There were no signs of Banded Stilt activity.

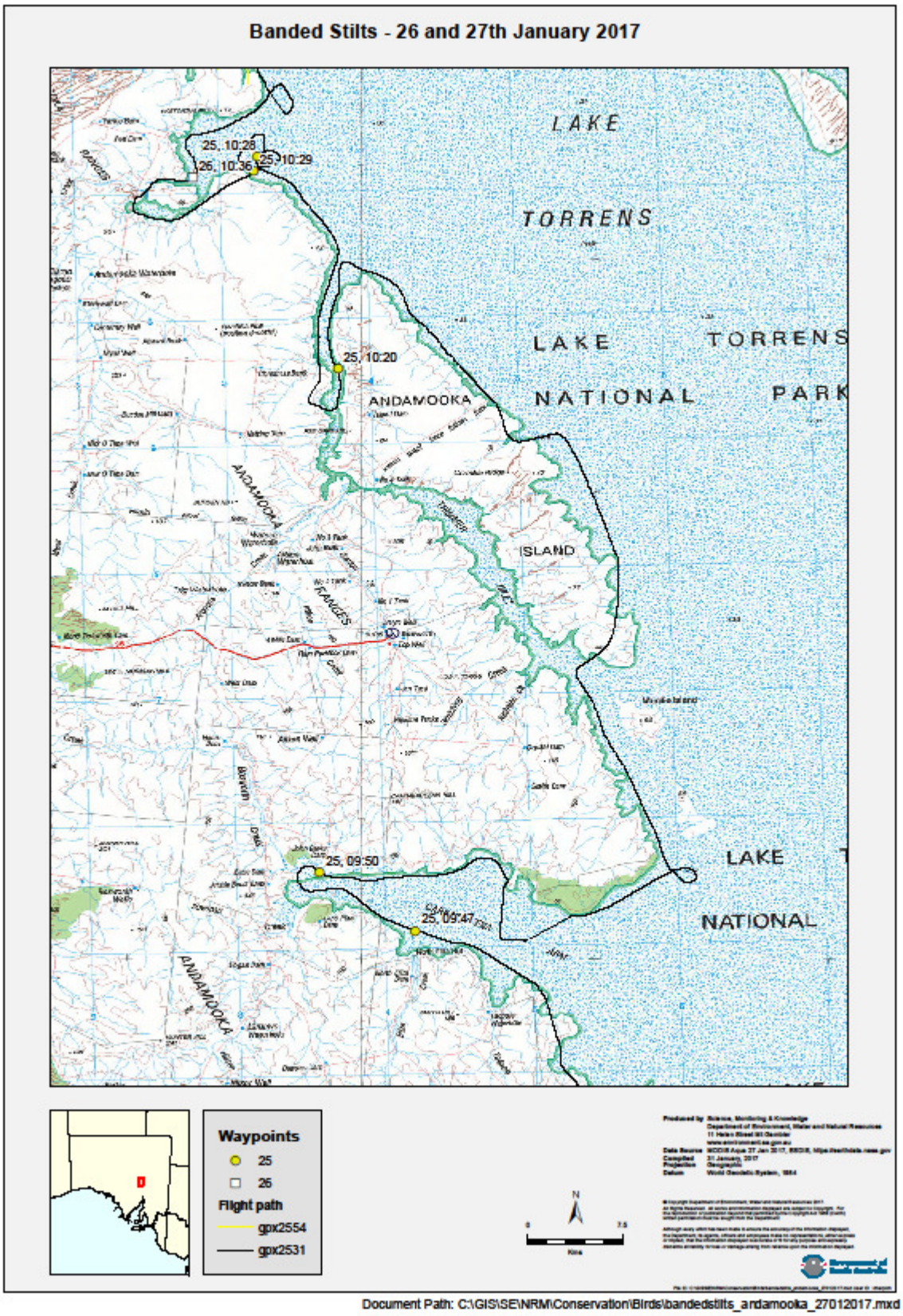
General Observations
The country was very green in most places from Port Augusta to Lake Eyre North. From William Creek to Lake Eyre North there was a lot of surface water in clay pans and puddles on the red ground. A large number of active rabbit warrens were observed on the sand dunes to the west of Lake Eyre and elsewhere.

On completion of our aerial survey, we sought advice from Reece Pedler. He advised that *both of the satellite tagged birds are back in the area too – P2 has been to Lake Everard and back and P9 has returned from Lake Eyre South. Both appear to be in the same area of the lake as the nesting colony and may indeed be in it.* Reece suggested that breeding may be in the very early stages: *The additional rain in the northern Flinders is likely to have added extra water to Lake Torrens and may lead to more Banded Stilt initiating breeding, so this colony could grow in size I think.*

Ross Anderson, a member of FoSSE and also our Community Liaison Ranger with DEWNR, was a member of the team who conducted the aerial survey. On our return, he immediately compiled much of the above report, and presented it to the Arid Lands Section of DEWNR. They followed up with a survey on 8 February, and advised that, *using the SAAL Banded Stilt, Silver Gull management decision framework, the decision was made to not take action on the gulls but monitor the situation*. They noted that the *Banded Stilt nesting attempt was unsuccessful. Remaining water is likely to disappear in the next few weeks.*

Effectively monitoring, and protecting Banding Stilt breeding events, is a continuing challenge. In this instance, a breeding attempt failed, most likely because of climatic conditions. The funds provided by the Foundation enabled us to detect a Banded Stilt breeding attempt that would otherwise have gone undetected. This adds valuable information to the growing body of data on the conditions under which Banded Stilt may attempt nesting and the factors that relate to success or failure of these attempts. It also led to follow-up monitoring by DEWNR, SA Arid Lands Region, who readied resources to protect the breeding colony from gull predation, should that have been necessary.


Banded Stilts - 26 and 27th January 2017
William Creek
Andamooka
LEIGH CREEK
Beltana
Parachilna
Pimba
Wonoka
HAWKER
Willochra
QUORN
PORT AUGUSTA
Stirling North
Yunta
Wilmington
IRON KNOB
ORROROO
Waypoints
25
26
Flight path
gpx2554
gpx2531
N
Kms
Document Path: C:\GIS\SE\NRM\Conservation\Birds\bandedstilts_andamooka_27012017.mxd


Banded Stilts - 26 and 27th January 2017
LAKE
TORRENS
LAKE TORRENS
NATIONAL PARK
ANDAMOOKA
ISLAND
LAKE
NATIONAL
25, 10:28
26, 10:36
25, 10:29
25, 10:20
25, 09:50
25, 09:47
Waypoints
25
26
Flight path
gpx2554
gpx2531
N
Document Path: C:\GIS\SE\NRM\Conservation\Birds\bandedstilts_andamooka_27012017.mxd

The VWSG Geolocator program – Success and Surprise

Ken Gosbell, Clive Minton, Maureen Christie, Robyn Atkinson, 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 been possible only 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. Additionally, Xenia Dennett, a VWSG member, most generously donated $7,500 in each of 2015 and 2016.

One of the pleasant surprises this year was finding that a Ruddy Turnstone (YDB) from South Australia returned via the Pacific, having only one stop in the islands of Micronesia. Of more than 200 tracks analysed for Ruddy Turnstone, this is only the second individual bird to have returned via this route. It will be recalled that in 2009, our first year of the program, bird 9Y from Flinders, Victoria, made this journey (and repeated it in 2010). Additional details are provided in a separate report on the South Australia program for 2016/17.

Deployment and retrievals of geolocators by VWSG

The Table below shows the summary of deployments and retrievals by VWSG since 2009. In summary, 485 have been deployed on Ruddy Turnstone, 68 on Sanderling, 23 on Eastern Curlew and 61 on Red-necked Stint making a total of 637 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 (2016/17) we deployed 88 geolocators on Ruddy Turnstone comprising 28 in South Australia and 60 in King Island. It may be recalled that last year we also succeeded in using this technology on our smallest wader, the Red-necked Stint. With the development by our suppliers, Migrate Technology, of a 0.3g unit we deployed 61 geolocators at Yallock Creek Victoria, in April 2016. Of these we retrieved 14 geolocators in catches at Yallock Creek and nearby Barrallier Island. Retrievals of geolocators during the 2016/17 season have been the best on record; the King Island teams retrieved 47geolocators during their two visits while the South Australian team retrieved 18. See separate report on some of the findings of the South Australian program.

Deploying geolocators on Red-necked Stint at Yallock Creek (Victoria), (Photos Ken Gosbell)

One of the features of our program has been the high retrieval rate, particularly for Ruddy Turnstone; over the last six years 206 retrievals have been made which is 52% of those deployed. Averaged over all species this is 45% 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. The miniaturised instrument (0.3g) deployed on Red-necked Stint, incorporated new technology and we obtained 9 useful tracks from the 14 loggers retrieved. The Intigeo unit which we currently use on the Ruddy Turnstone 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.

Geolocators deployed/ retrieved each year by VWSG in SEA to May 2017

Year	Ruddy Turnstone		Sanderling		Eastern Curlew		Red-necked Stint		TOTAL		% retrieved
	On	Off	On	Off	On	Off	On	Off	**On**	**Off**	by year
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	44
2016	88	65						14	88	74	44
Total	485	206	68	18	23	8	61	14	637	246	45
%		52		26		35		23			

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 Vietnam coasts 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 14 Ruddy Turnstones retrieved from SA this year, 10 reached the breeding grounds and up to 8 were judged to show 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 two birds have provided 4 tracks while others have provided two and three tracks. This provides a significant opportunity to study an individual bird's strategy 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 by VWSG and FoSSE on the basis of the known migratory departure times gained through our geolocator studies.

Costs
The geolocators have been purchased at an average cost of close to $200 each. With 637 units deployed over the last seven years this equates to a cost of around $128,000. 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 contributions by the Norman Wettenhall Trust and Xenia Dennett.

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.

Friends of Shorebirds Southeast (FoSSE) has contributed $36,140 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.

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. Eight 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, enabled deployment on Red-necked Stint for the first time. The retrieval

of 14 of these, although still being analysed in detail, is now providing some indication of the migration strategies of our smallest wader.

With the close collaboration and cooperation 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 200 km apart. Multiyear sequential migrations are also providing some indications of the impact of climate change and habitat destruction at key stopover regions in the flyway; these issues are a major focus of the Deakin University studies.

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 637 geolocators over five sites in south eastern Australia and has achieved such a satisfactory retrieval rate. 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

Aharon-Rotman, Y., Gosbell, K., Minton, C., and Klaassen, M. 2016. Why fly the extra mile? Latitudinal trend in migratory fuel deposition rate as driver of trans-equatorial long distance migration. Ecol Evol. 2016 Aug 25; 6(18):6616-6624*).*

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. 2011. 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.

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*

Papers in preparation
Migration phenology and stopover site use of a long distance migratory bird along the East Asian-Australasian Flyway– a multi-population assessment. Meijuan Zhao, et al (in prep)

Presentations were made at the ASC and other Conferences.

AWSG Conference, Adelaide 2012 - Unlocking some of the mysteries of migration – geolocators providing new insights of the migration strategies for 4 shorebird species. *Clive Minton*

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

East Asian Australasian Flyway Partnership Meeting, Alaska, June 2013 - What we have learnt from Geolocators in Australia about the migration of small waders. *Ken Gosbell.*

International Wader Study Group 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*

AWSG Conference, Auckland, October 2016
A review of geolocator studies in Australia, 2009-2016. Where to now? *Ken Gosbell*.

Clive checking the age of a Great Knot at 80 Mile Beach WA 2016 (Photo Roz Jessop)

Geolocators Retrieved from SE South Australia November 2016 and March 2017.

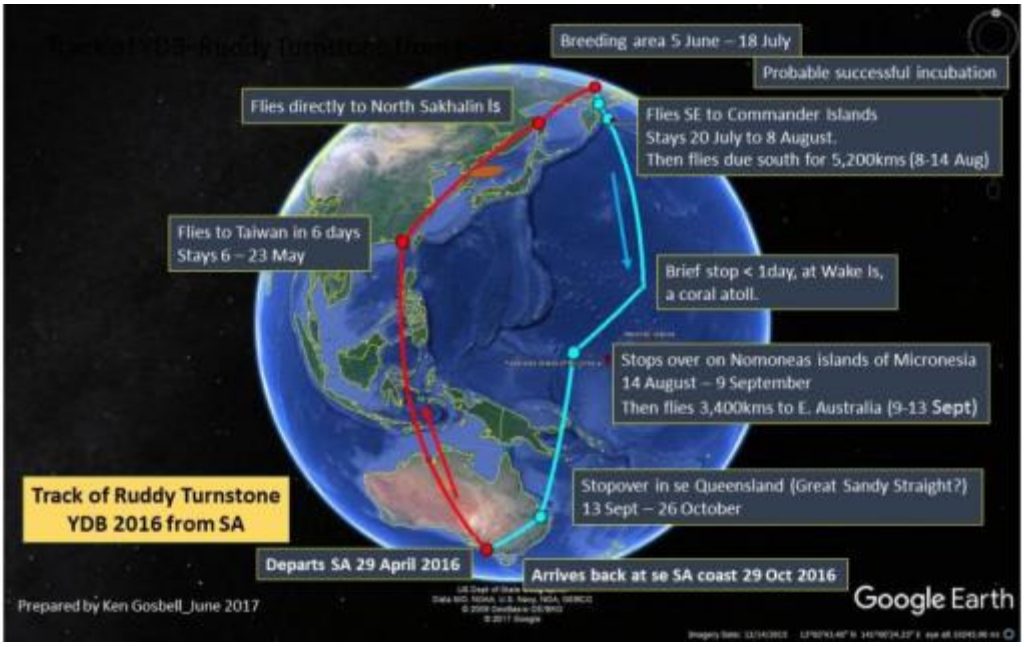
Ken Gosbell and Maureen Christie

Fourteen (14) geolocators were retrieved from Ruddy Turnstones on the South East coast of South Australia during visits of the VWSG in November 2016 and March 2017. Thirteen of these were successfully downloaded and one is awaiting downloading by James Fox, the manufacturer of the Intigeo geolocators used. The following is an overview of some of the more interesting results. It is stressed that these must be regarded as preliminary and further work will be required before any publication in a scientific journal.

Of these 13 geolocators, several contributed to multiple tracks. Three of those retrieved had double tracks, that is, they recorded two consecutive years of migration. Furthermore, two others had recorded tracks in previous years viz VAZ (was ATZ) recorded its fourth track and CCJ which recorded a previous track in 2014.

The following outlines aspects of particular interest:

1. Of the 10 birds that reached the breeding grounds, five were judged to have successfully bred with a further three that may have been successful. This represents a success rate of 58% for those that bred in 2016. This high rate supports the VWSG summer catches which showed the highest level of breeding success for this species ever recorded.
2. The standout southern track was for YDB (a female) which went from the breeding grounds to the Commander Islands (western end of the Aleutians). She then travelled south across the Pacific to an island in Micronesia before flying to the Great Sandy Strait region of Queensland from where she flew back to the initial location in South Australia. This is the nearest we have come to the trans Pacific flight of 9Y (CMY) recorded in 2009 and 2010. This is remarkable given that we have analysed tracks for around 174 Ruddy Turnstones over the last seven years.

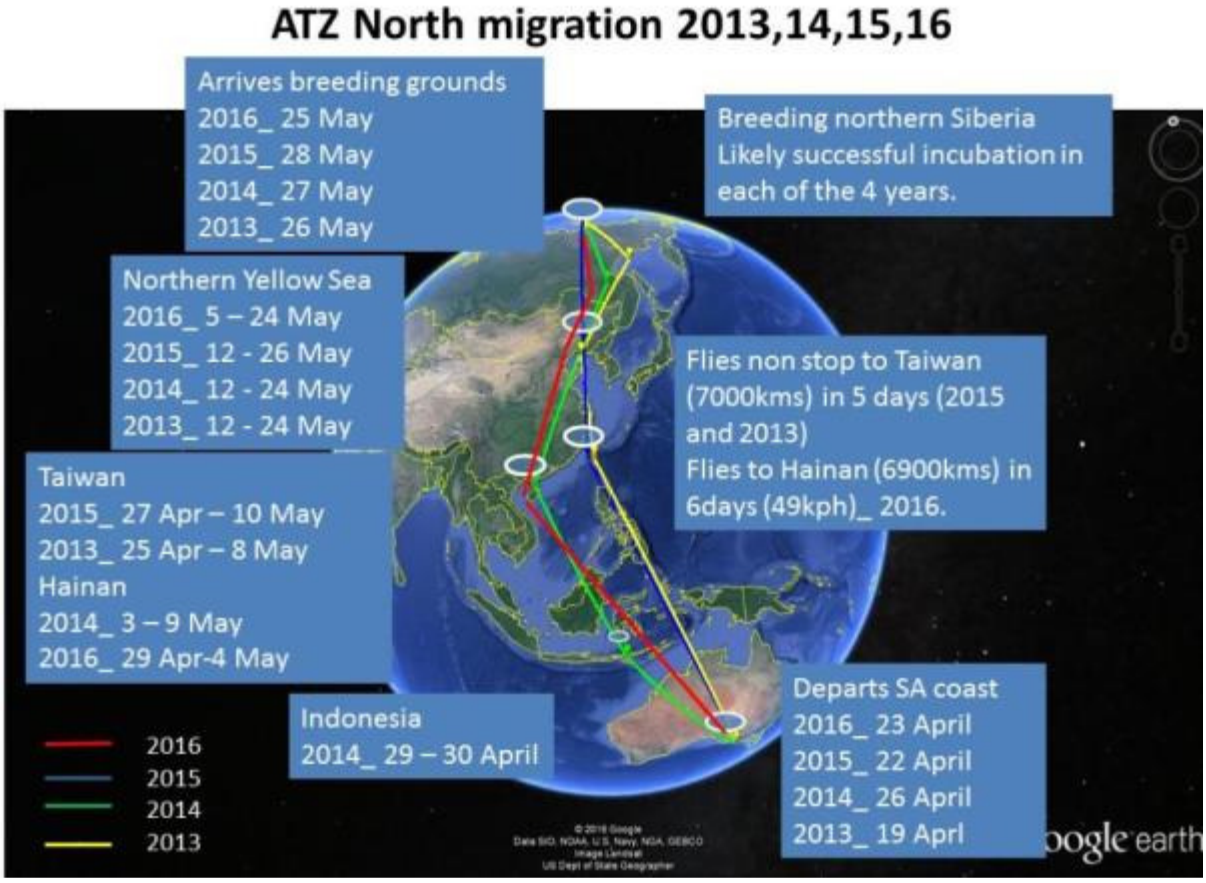


3. Four of these birds were fitted with geolocators on either 20 or 23 April 2016. Three of these did NOT complete a migration to the breeding grounds. XEK went as far as NWA/ Java and returned, ZHW went to Taiwan before returning and WUT only went

as far as Central Australia before returning. On the other hand, XBW did make a successful migration and successfully bred.

4. On northward migration, most made their first stopover in Taiwan or Hainan after a leg of 5-7 days. Most made subsequent stops in the Yellow Sea (7–19 days) before heading for the breeding grounds (location yet to be determined). YDB was an exception to this strategy, flying direct from southern China to Sakhalin Island.
5. On southward migration, a favoured stopover was again the Jiangsu coast of China with subsequent stops being variously made in the Philippines, Indonesia, NWA and SW WA before returning to SA in late September to early November.
6. They reached the Arctic between 25 May and 5 June they spent 41–65 days before commencing their southward journey.
7. The speed of their first leg varied but XUT seemed to cover the leg to Taiwan in less than five days at an estimated speed of 62kph (obviously with a very favourable wind).

The banding history of ATZ (a male) is of particular interest.

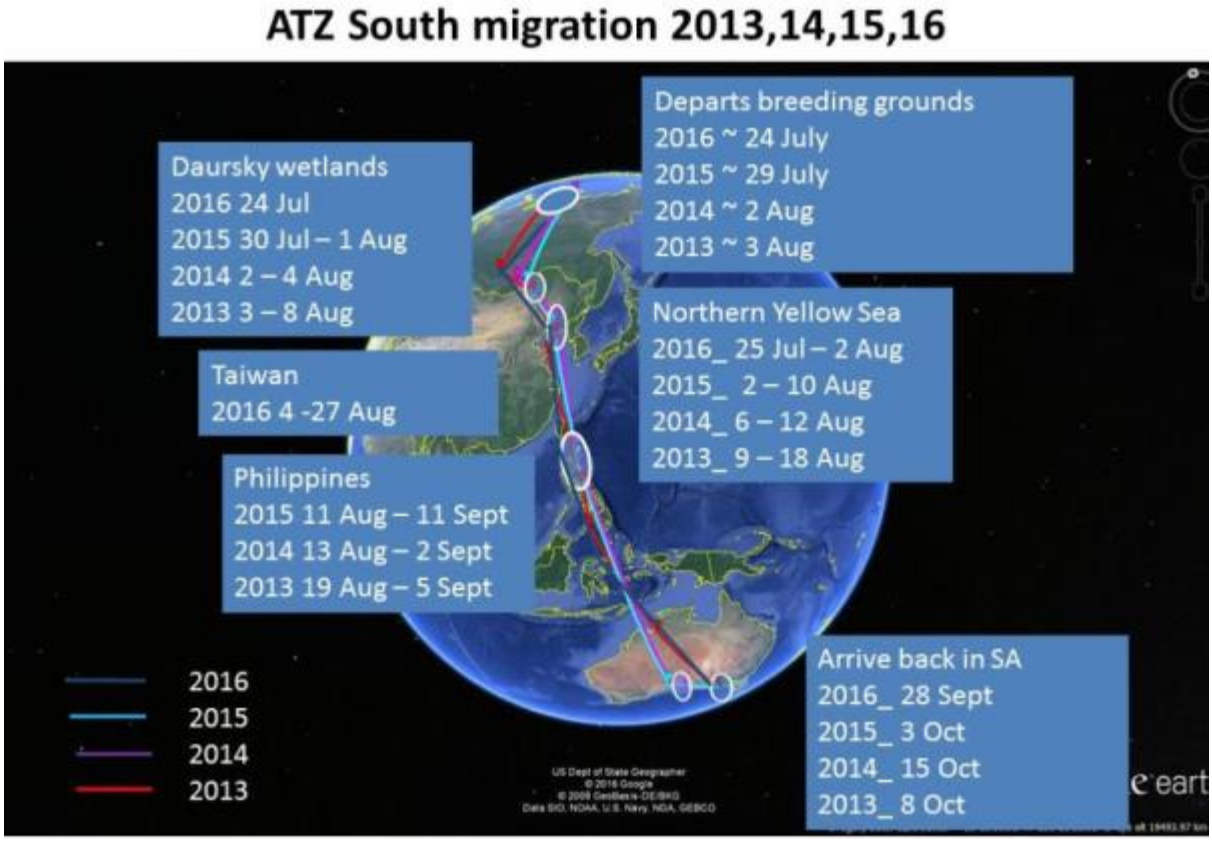


He was first banded on 4 March 2006, in the second season of our engraved flag project. Aged one he would have been hatched in July 2005 and now be aged 12 years. He was flagged Orange 4X/Yellow.

At the beginning of our project we had a great deal of problems with ink fading, and so it was that 4X was replaced with ATZ in March 2009. On 11 April 2013, he was fitted with a geolocator donated by the students of the Newbery Park Primary School (Millicent). The students were in the field when the geolocator was put on and then again when it was retrieved the following season. A pull-up banner is on display in the school foyer.

ATZ was recaptured on 27 November 2016, when his 5th geolocator was deployed. By now the ink on ATZ had faded to such an extent that it was unreadable in the field, and so ATZ is now wearing VAZ.

This is only part of the story – 4X/ATZ/VAZ has been caught in the same general area a total of 11 times! He has also been observed in the field many times. On all but one occasion this was in the Nene Valley/Blackfellows Caves/Carpenter Rocks area of his non-breeding territory.



You can see from the diagrams the **incredible similarity in key dates and stopover locations** on both northward and southward journeys. The other point of interest is that this **bird probably had a successful incubation for the fourth year running**. Given the very variable results from other birds recorded, this is quite a feat.

ATZ Mini Bird, Mega Voyage (*From the Ground Up* by Natural Resources South East) prompted a member of the public to demand action be taken to control dogs on the beach because these amazing birds shouldn't be disturbed.

Thank you to Simeon Livovski who confirmed the track for YDB and identified its breeding location. Thank you also the teams who undertook the fieldwork to deploy and retrieve the geolocators. Without you these outcomes would not be possible.

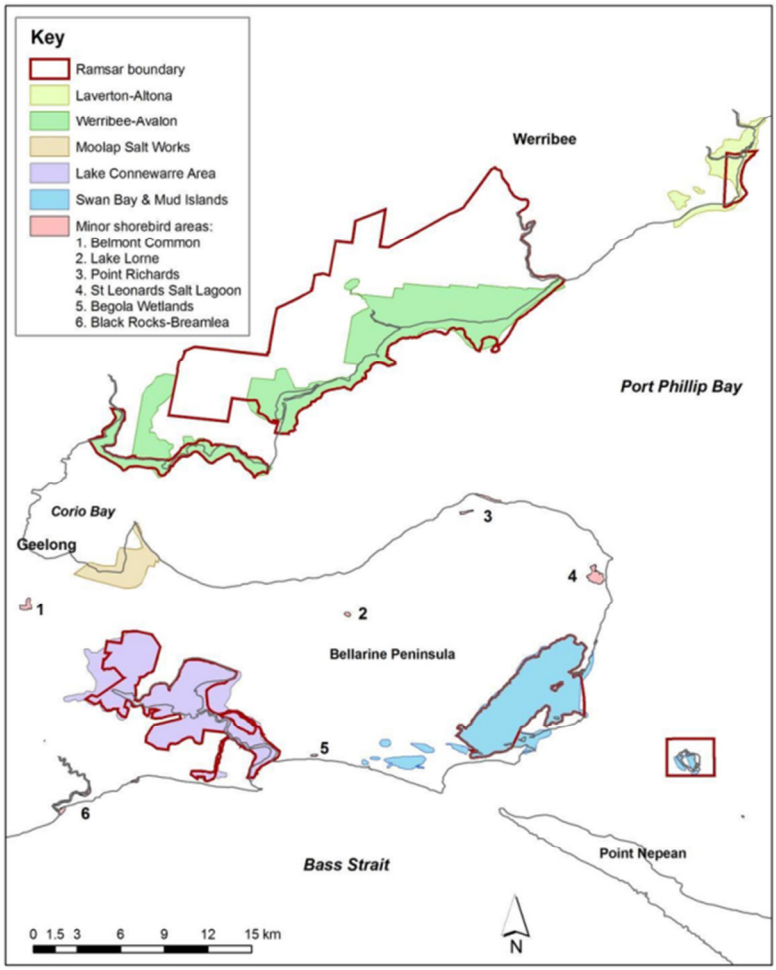
Conservation Report

Prue Wright

Ramsar management plans for Victorian sites are currently being reviewed. VWSG representatives went to several workshops on the Western Port and the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site management plans.

The Western Port plan has been published and workshops have been held on prioritising actions. Further meetings are expected over the coming year.

The Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site includes 5 very important areas for shorebirds. The review should be completed this year – see map below – after which prioritization workshops will be held.



Moolap Saltworks

The Moolap Coastal Strategic Framework Plan is being prepared by the Department of Environment, Land, Water and Planning (DELWP) and stakeholder workshops were held in May 2017.

The draft plan can be downloaded from https://www.coastsandmarine.vic.gov.au/coastal-programs/moolap (the comment period has closed).

The final plan is expected later in 2017.

South Australian Team Report

August 2016 – July 2017

Maureen Christie and Jeff Campbell
Friends of Shorebirds SE Inc.

With our inaugural meeting on 28 August 2005, 10-year birthday celebrations were long overdue. Tim Collins, Regional Director, Natural Resources South East (presented 10-year badges at our AGM in March. (Photo: recipients who were present, plus Tim). The 'local team' has, of course, been in operation a lot longer, our first catch being at Blackfellows Caves on 26 November 2000.

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

Beachwrack harvesting
A presentation on the issue was given at the AWSG Conference in Auckland in October.

There is still no news on Exploratory Permit EP003 (Rivoli Bay to the Victorian border).

Licence Y078 (Rivoli Bay to Cape Jaffa): A good working relationship now exists between all stakeholders: Australian Kelp Producers (AKP), Primary Industries and Regions SA (PIRSA), Department of Environment, Water and Natural Resources SA (DEWNR), SE Natural Resource

Management Board (NRM) and Friends of Shorebirds SE (FoSSE). There are no training requirements on AKP's licence. To help remedy this we held a very successful and well supported half day workshop on 14 December. All participants were provided with a Shorebirds Glove Box Kit. Thank you to Jon Fallaw from Phillip Island Nature Parks for presenting at the workshop. Last season there was very little bull kelp on our beaches. All harvesting observed was by hand.

Shorebirds Glove Box Kit for issue to coastal workers/volunteers
The kit contains Birdlife ID and Beach Nesting Bird (BNB) breeding booklets and a booklet of maps showing all Hooded Plover breeding territories from Kingston to Vic Border. Surveying and mapping was a huge amount of work but worthwhile as kits have been very well received, with all PIRSA and DEWNR coastal vehicles having one in their glove box. We could not have achieved this without the help of Barry Schriever, Coastal Team, and Darren Herpich, GIS, DEWNR.

Local team catches, geolocators and VWSG visits
A flock of Turnstone at the Breakwater in Port MacDonnell, two with geolocators in mid-August, was our first target. Unfortunately, 20 August was a day of 'what could go wrong, did go wrong'. Not only did we not fire, we didn't even manage to read the flags! In November, the VWSG team failed to retrieve any of the five geolocators at Nora Creina. With Fairy Terns breeding at Cowrie Island, Beachport, we banded chicks in the morning, and went on to Nora Creina in the afternoon (see separate report on Fairy Tern banding). Once again, we seemed jinxed. On 28 January, a misfire meant only one Turnstone was caught. On a second visit on 3 February we didn't fire, despite setting the net twice. Finally, in April, with three geolocators still to deploy, despite the team making a huge effort, going out on 4 days, we failed to catch.

With VWSG visits in November and March, the combined effort of all the teams resulted in 14 retrieved geolocators (from 29 deployed during the previous season) and 28 deployed (see geolocator report).

In January, we received a report of a banded Pied Oystercatcher at Port Fairy with fishing line tangled around both legs, meaning it could only jump to get around. It was on a reasonably secluded beach on Griffiths Island. By the time we got there on 1 February it had freed one leg, but it was still tripping on loose line. We set the noose mats and succeeded in catching the unbanded oystercatcher! By the time we left the line did not seem to be tight so it is hoped that the oystercatcher was able to free itself.

Predator Control - Threat Abatement Project
We continue our support role in this long-term Natural Resources South East project. Hooded Plover numbers, Cape Jaffa to the Victorian Border, have returned to historical levels of about 100 individuals after dropping to as low as 50 in 2014 at the time when aerial fox baiting began. Of course, this figure may not continue into the future, and may not be attributable to baiting. As other threats to hoodies have not declined, it is very disappointing to report that there are no more budgeted funds for manual fox baiting and only one year for aerial baiting. Every endeavour is being made to source funds so that both manual and aerial baiting can be continued. Of course, we are continuing with our work of protecting nests, monitoring, banding and flagging beach nesting species. The South East was well represented by volunteers and DEWNR staff at the BirdLife Australia Beach Nesting Birds Conference at Willunga, South Australia in May. At the conference, we also gave a presentation on beachwrack.

We continue with our Dog's Breakfast program with traditional presentations at Robe, Kingston and Port MacDonnell. At Beachport we joined DEWNR in a stand at Market Day where the Millicent vet attended and we had our normal displays and hand-outs plus colouring in for children. This was the first year that we have had success at all four locations. With several of our team 'Dogs Breakfasted out', I am not sure what the future holds beyond next year.

Thompson Beach and Bald Hill, Gulf St. Vincent
There were two visits to these most challenging of catch sites: 1-8 December and 25 February - 5 March. Adelaide and Mount Lofty Ranges NRM, represented by Tony Flaherty (DEWNR), continues to enthusiastically (and financially) support our efforts. A dedicated team continues to join in field work. Tony presented on both the South Australian and Western Australian Grey Plover satellite project at the AWSG conference.

Friends of Parks South Australia 'Innovation Award' for 2017
Thank you to Jean Turner, Birdlife Samphire Stewardship Project, who put together an extremely detailed nomination: 'Tracking Grey Plovers from the Adelaide International Bird Sanctuary to the Arctic Breeding Grounds' which won this award. The award came with a cheque for $1,000 which will assist the group with further studies.

Nature Foundation Grant - Lake Eyre
Please refer to separate article for a report on the Banded Stilt breeding attempt.

Vale Richie Todd
Friend and colleague Richie died 5 February 2017. He enjoyed coming out with us in the field, despite not being able to get about very well. He was an avid photographer, dedicated to recording species and to reading flags. He had limitless patience, and amassed a large number of flag sightings.

Richie with the VWSG banding team, and locals, taken at Rivoli Bay, Beachport, 28th November, 2016.

General
With VWSG and AWSG data bases being overhauled, responsibilities for data entry are also being reorganised. Until very recently David Trudgen was responsible for maintaining the VWSG Oystercatcher data base as well as all South Australian and King Island data entry and I (Maureen) did all South Australian ELF local sightings. Most of this will now be handled by Joris Driessen. David will continue to enter South Australian data. So 'thank you' David for a time-consuming task that

required lots of emails and follow ups of sightings, over many years. We also thank you for continuing with the South Australian data entry.

Flag making is organised by Jeff and Sarah Campbell and keeps the group supplied with flags for SA.

FoSSE AGM and 10-year celebrations were held at the Campbell family home in Mount Gambier. Thanks to Jeff, Sarah and family for making their home available. We enjoyed a great day.

Newsletters continue to be issued from time to time. Jeff continues as both Shorebirds 2020 count coordinator and the Beach Nesting Birds Coordinator for South Australia.

Conservation
Comment was made on the Nora Creina Golf Course development, Moolap Salt Works and a proposal to remove delta from Little Lake, Lake George. We are currently involved in an extensive round of Public Consultation workshops on NRM planning.

Thank you to the members of the group who have worked hard to produce these results. Thank you too, to the members of the Department of Environment, Water and Natural Resources South East who have provided encouragement and practical help. David New, Volunteer Coordinator, helps with all sorts of administrative tasks. Ross Anderson deserves special mention for all of the support he gives us, both as our Community Liaison Ranger and as a member.

Grey Plover CAU. Photo by Paul Taylor taken on 20th June, 2017, at Bald Hill, South Australia.

SOUTH AUSTRALIAN TEAM CATCHES 01.08.16 TO 31.07.2017

DATE	PLACE	Bar-tailed Godwit	Ruddy Turnstone	Red Knot	Sanderling	Red-necked Stint	Sharp-tailed sandpiper	Curlew Sandpiper	Pied Oyster-catcher	Sooty-Oyster catcher	Banded Stilt	Grey Plover	Red-capped Plover	Double-banded Plover	Hooded Plover	Other	Terns	TOTALS
20.8.16	Port MacDonnell (didn't catch)																	
28.1.17	Nora Creina		1															1
29.1.17	Beachport CP - 3 Mile #									1								1
3.2.17	Nora Creina																	0
8.3.17	Nora Creina #														1			1
13.4.17	Nene Valley #														1			1
17-27.4.17	Blackfellows Caves, 4 days																	0
Nov 16 - Mar 17	Various. Hooded Plover**														9			9
19 Jan-2 March	Cowrie Island **																125	125
SA team this year			1							1					11		125	138
B/F SA team	26.11.00 – 31.7.2016		626	13	106	492	107	18	44	8	1773	0	43	25	62	3	320	3640
SA TEAM TO DATE			**627**	**13**	**106**	**492**	**107**	**18**	**44**	**9**	**1773**	**0**	**43**	**25**		**3**	**445**	**3778**
special geo trips																		
27.11.16	Nene Valley (7 geos)		27															27
29.11.16	Boatswain Point (1 geo)		21															21
geo trip this year			48			0	0						0			0		48
B/F geo trips	23.4.2009 - 31.7.2016		382		648	340	82	13	2	1			2			1	7	1478
GEO TRIPS TO DATE			**430**	**0**	**648**	**340**	**82**	**13**	**2**	**1**			**2**			**1**	**7**	**1526**
Thompson Beach																		
see seperate table		**18**	**24**	**1**		**58**	**40**	**1**	**4**			**21**	**10**			**12**	**31**	**220**
Eyre Peninsula			**68**		**262**	**393**	**23**	**8**	**12**	**4**	**15**		**21**			**2**	**1**	**809**

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

	OTHER	SE	Yanerbie
	Black-fronted Dotterel	3	
	Golden Plover	1	1
	Broad-billed Sandpiper		1

TERNS	SE	Yanerbie	Thompson Beach
Crested	199	1	1
Fairy	229		5
Caspian	1		11
Whiskered	6		14
Little	17		
	452	1	31

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	Crested 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
2015/16 Summer (3 visits)		1		14			11			2		1					29
B/F totals		**6**	**18**	**15**	**6**	**1**	**31**	**40**	**1**	**15**	**3**	**4**	**5**		**4**	**14**	**163**
1-8 December 2016	multiple net sets																
4.12.16	Bald Hill			9							1			1	7		18
6.12.16	Bald Hill									4							4
7.12.16	township						27					6					33
25 Feb - 5 March 2017	multiple net sets																
1.3.17	township									2							
Totals 2016/17				**9**			**27**			**6**	**1**	**6**		**1**	**7**		**57**
TOTALS TO DATE		**6**	**18**	**24**	**6**	**1**	**58**	**40**	**1**	**21**	**4**	**10**	**5**	**1**	**11**	**14**	**220**

SOUTH AUSTRALIAN TEAM CATCHES - Month Waders Caught in 1.12.2000 TO 31.07.2016

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Ruddy Turnstone	6		11	233	38	16	46	87	92	1	97		627
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									6	101			107
Curlew Sandpiper						2	7	6		3			18
Pied Oystercatcher	9	4	1	1	1			2			10	16	44
Sooty Oystercatcher	1		2	3	2						1		9
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	19	5	11	4	2					5	14	12	72
Little Tern	17												17
Fairy Tern	55	172	2										229
Crested Tern	199												199
TOTALS	519	410	91	793	47	108	531	729	185	160	123	81	3777

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

Ruddy Turnstone ATZ

Maureen Christie

Ruddy Turnstone ATZ is certainly doing more than his share for the flyway.

He first volunteered on 4 March 2006, in the second season of our engraved flag project. He was given engraved leg flag combination Orange 4X/Yellow. Aged one he would have been hatched in July 2005 and would now be aged 11 years. At the beginning of our project we had a great deal of problems with ink fading, and so 4X was replaced with ATZ in March 2009. On 11 April 2013 he joined the geolocator project, wearing a geolocator donated by the students of the Newbery Park Primary School (Millicent). The children were in the field when the geolocator was put on, and then again when it was retrieved the following season.

And each season thereafter .....

ATZ was recaptured 27 November 2016, and his 5th geolocator deployed. By now the ink on ATZ had faded to such an extent that it was unreadable in the field. And so ATZ is now wearing VAZ.

Ken Gosbell (VWSG) has plotted all four northern and southern migrations. He also advises that ATZ has probably successfully bred in all four years.

And this is only part of the story – 4X/ATZ/VAZ has been caught in the same general area a total of 11 times! He has also been observed in the field many times. On all but one occasion this was in the Nene Valley/Blackfellows Caves/Carpenter Rocks area of his non-breeding territory.

Thank you all who have worked hard over many years to collect this data. And especially thank you to 4X/ATZ/VAZ!!!

The South Island Pied Oystercatcher

Clive Minton, Joris Driessen, Danny Rogers and Adrian Riegen

Oystercatchers are present in all continents around the world except Antarctica. There is quite a range of species, with nearly always a pied form and often a black form present in each region. Most species of oystercatcher have only relatively small migrations but those in Europe may travel up to 2,000 km between their breeding and non-breeding areas.

In Australia we have the Pied Oystercatcher and the much less common Sooty Oystercatcher. In New Zealand there are three species: the South Island Pied Oystercatcher (SIPO) (*H. finschi*)[1], the Variable Oystercatcher (*H. unicolor*) and the Chatham Island Oystercatcher (*H. chathamensis*). SIPOs greatly outnumber the other two species, are widespread, migratory (within New Zealand) and regularly form flocks of several thousand outside the breeding season. Their numbers grew enormously in the last 100 years as they moved from breeding only in braided rivers of the South Island to breeding successfully in new South Island grasslands created for sheep farming. Only a few pairs breed in the North Island. Their numbers are now in decline as a result of many of the sheep farms being converted to dairy farms. It appears SIPO cannot breed so successfully with cows.

In recent years there has been a number of reported sightings of definite or probably SIPO on the east coast of Australia. Although superficially very similar to the Australian Pied Oystercatcher, they are sufficiently different to be confidentially distinguished in the field, at least by expert field ornithologists. The SIPO tends to have a much longer, thinner and more pointed bill. It also has shorter legs and is relatively smaller in overall size. In flight it shows significantly more of a white wing bar – though nothing quite as much as a European Oystercatcher (which has a similar pied appearance).

VWSG has been regularly catching Australian Pied and Sooty Oystercatchers for the last 30 years, with the principal objectives of delineating their movements within Australia, particularly south-eastern Australia. Movements of up to several hundred kilometres along the coast are frequently recorded with the more distant movements more typically being between southern Victoria and the east coast, both north and south of Sydney (but the latter more commonly) and out to the Bass Strait Islands and Tasmania (especially Sooty Oystercatchers).

Biometrics and moult have been systematically collected and have shown consistent differences between the age groups of each species, and between the sexes. Eye colour and shape (particularly the pupil) have also been studied as a potential aid to ageing/sexing – in the field as well as in the hand. Demographic calculations have proved more difficult, partly because once birds reach maturity at the age of four or five, most pair and take up a territory. Many individuals remain on this territory throughout the year and are thus not available for recapture or resighting within flocks. Overall, therefore, Oystercatchers are not particularly either watched by birdwatchers or examined as intensively for flags as other wader species.

It is not so surprising therefore that the South Island Pied Oystercatcher caught with ten other Australian Pied Oystercatchers on August 6, 2016 at Stockyard Point on the east shore of Western Port was not initially noticed or recognised!! Fortunately it was given an engraved leg-flag (Red engraved white 1N) and was fully processed in the normal way.

On 31 December 2016 Steve McBride sighted Red 1N at Broadwater Beach, 20 km south of Ballina, on the northern New South Wales coast and noticed that it did not look like a typical Australian Pied Oystercatcher. Steve took a number of good photographs and concluded that it was a New Zealand South Island Pied Oystercatcher. The bird was seen at the same location on 7 January 2017. It was thus the first SIPO to be banded in Australia.

Much to the pleasure of everyone in Victoria, and especially those in the VWSG, it most generously decided to return to Stockyard Point and show itself off at its original marking location. On 18 June 2017, Red 1N (or Syd the SIPO as it became known on Facebook) was found at Stockyard Point by Simon Starr. The bird quickly became famous and proved a mecca for birdwatchers from all around Australia (to add icing to the cake, a Little Stint in full-breeding plumage also turned up at Stockyard Point, in May 2017, and had added to the attraction).

In late June and early July the bird was reported almost daily, but with waning interest and the Oystercatcher flock roosting at different locations around the bay it has since been reported less regularly. At the time of writing this article "Syd" had last been seen at Stockyard Point on 5 August 2017. From a quiet little sandy point in a rather inaccessible part of Western Port, the area has now become an item on every birder's map, with rarely a day when there are not several birdwatchers visiting Stockyard Point over the high-tide roosting period.

The biometrics of the SIPO were:

Measurement	
Bill Length	87.8mm
Head-bill	130.6mm
Wing Length	251mm
Weight	562g

Note from NZWSG
Bill length both sexes range 67mm – 115mm , with a mean of 86.7mm (n1762). Bill length varies depending on whether they chisel or probe I believe. (ACR)
Wing range both sexes 211 – 283 mean 260 (n1157)

The corresponding mean measurements[2], ± 95% confidence limits, for adult female (the larger sex) Australian Pied Oystercatcher are:

Measurement	**Adult Male**	**Adult female**
Bill Length	71.4 (622 - 842) mm	79.8 (71.8 - 87.8) mm
Head-bill	116.4 (108.0 – 124.8) mm	124.9 (115.7-134.1) mm
Wing Length	287.1 (273 – 301) mm	290.7 (276 – 305) mm
Weight	732.8 (618 – 847) mm	763.5 (649 – 877) g

The SIPO's measurements individually are within the range recorded for Australian Pied Oystercatchers, but are at the extreme limit for each individual measurement. The short wings and light weight of the Western Port SIPO were outside the 95% confidence limits for Australian Pied Oystercatcher in Victoria.

In the field the bird certainly had all the characteristics of a SIPO including the extremely long bill and squat (short-legged) appearance.

The moult showed a complete set of new primaries obtained during the bird's moult the previous summer/autumn. It was aged as an immature, probably age class three (third year, with the year beginning on August 1st), suggesting it was therefore hatched in New Zealand in November/December 2014. Most 2-3 year old SIPOs do a primary moult between October

and March. Thus a 3rd year bird would have slightly worn old feathers in August whilst a 2nd year bird would have very old feathers. (ACR).

It will be fascinating to see what moves this bird makes in the future. Will it now remain in Victoria? Or will it return again to New South Wales? Or will it even attempt to get back to New Zealand? Will it pair or attempt to breed? And with so, with whom and where?!

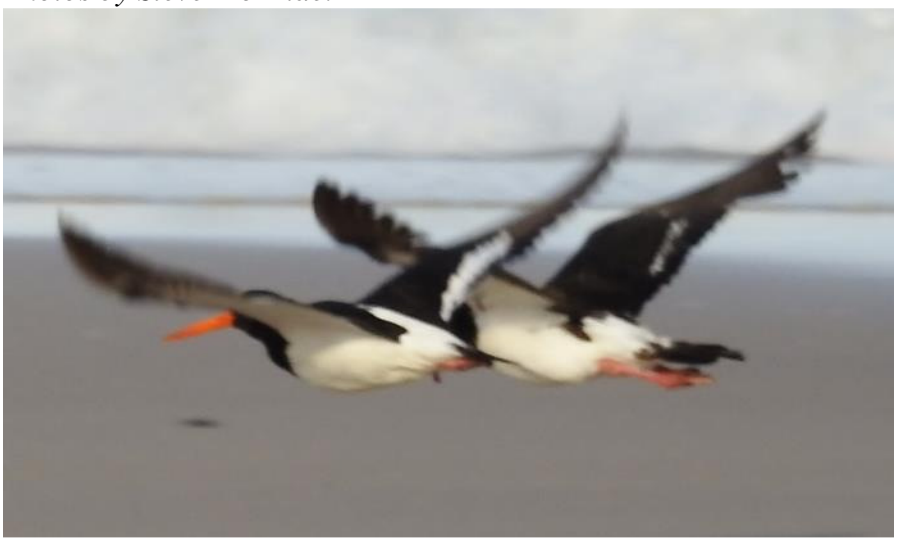
Lots to look forward to if this bird continues to survive and we can follow its movements through its flag combination.

Reference

[1] Checklist of the Birds of New Zealand, fourth edition, 2010, in association with the Ornithological Society of New Zealand

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

Photos by Steve McBride.



Little Stint at Stockyard Point

Gary Matthews

There has been a Little Stint at Stockyard Point this winter and was first observed by an enthusiastic birder on 23 June. Since then both the Little Stint and South Island Pied Oystercatcher have been receiving a lot of attention from Australian Twitches.

Red-necked Stints and Little Stints are very similar in size and when in the hand can be confirmed only by measurements once in winter plumage. However this bird was in breeding plumage making it much easier to distinguish through the telescope.

Photo Gary Matthews (Stockyard Point, 2017)

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

Aharon-Rotman, Y., Gosbell, K., Minton, C., and Klaassen, M. 2016. Why fly the extra mile? Latitudinal trend in migratory fuel deposition rate as driver of trans-equatorial long distance migration.. Ecol Evol. 2016 Aug 25;6(18):6616-6624.

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:

AWSG Conference, Auckland, October 2016

Beach-cast marine algae fishery in the South East of South Australia *Maureen Christie, Doug Watkins, Ken Gosbell, Jeff Campbell, James Brook.*
Tracking of Grey Plover in the East Asian-Australasian Flyway *Tony Flaherty*
A review of geolocator studies in Australia, 2009-2016. Where to now? *Ken Gosbell.*
Insights into migration pattern of Sanderlings using geolocators: from raw light data to ecological insights Simeon Lisovski, *Ken Gosbell & Clive Minton*

King Island Report
15-24 November 2016

Robyn Atkinson

Day 1. We settled in and checked the beaches where geolocators had been deployed on the previous visit in February: Manuka, Dripping Wells and Burgess Bay. Manuka/Burgess Bay had huge quantities of seaweed which was full of flies, maggots and hoppers.

It was difficult to know where to set the nets as there was such a plentiful supply of food.

Day 2. Hoping to start the trip with a successful catch, we set a net at Dripping Wells, where historically we have had some very successful catches, but it was not to be. The tide failed to come in as expected and the net was left high and dry.

The rest of the day was spent on a count of the south of the island. One team bravely tackled the very confusing track down to Seal Bay, but without Margaret Bennett's uncanny sense of direction, things apparently went a little pear shaped. Hours later, it is rumoured, a wallaby finally pointed the way out of the paddock.

Day 3. Back to Dripping Wells and a very small but high-quality catch of three birds each carrying a geolocator.

Day 4. Burgess Bay. The birds were spread out everywhere, and, as there was no one, obvious feeding spot, we finally settled on the very rocky roosting site across the causeway.

Bethany left us, and Marcel arrived, just as we made a catch of 51 birds, including 12 with geolocators.

A visit to the tern colony in the afternoon, to attempt a catch of banded adults, was quite disappointing. There were at least 900 adults in the area, but only 140 nests, plus 800 Silver Gull. The nesting adults were too easily disturbed to attempt to catch.

Day 5. Central Manuka. Again, more seaweed than we have seen on previous visits, although not much kelp. There were plenty of spots to set the net and we made a catch of 30 birds including five with geolocators. Oddly, 14 were juveniles. The previous catches had only low percentages of juveniles.

Day 6 and 7. Our luck finally ran out. First at North Manuka then at Dripping Wells, nets were set, nets were moved, lots of waiting, occasional snoring was heard, more waiting. You all know how it goes.

Day8. Another day of waiting at Dripping Wells. A second net was set to increase our chances. Eleven white geolocators had been seen in the area, so it was worth persisting. Katherine had by this time been sitting out on rocks for three days, patiently twinkling birds, but she still seemed remarkably cheerful. It was beginning to feel as though all was lost, but then somehow a miracle happened and the birds obligingly walked in front of the net. A catch of 29 birds with 10 geolocators. What a relief!

Day 9. A day out. We went north to finish the count. For our final evening Prue cooked a delicious roast and we invited Margaret and Graeme Batey, Margaret Bennett and Gary Barker, who had just returned to the island that day.

Thanks to the whole team for a great effort and a lot of patience. Thanks also to Katherine and Peter; their abilities with a telescope are awesome. Both are very experienced flag sighters and they spent a lot of time in the field reading flags.

Special thanks to the King Islanders, Margaret and Graeme Batey, Margaret Bennett and Gary Barker, for their hospitality, help with logistics and valuable local knowledge. Thanks to Jenny Marshall for again allowing us to base ourselves at her house which we very much appreciate. Thanks again to the NRM for the use of their trailer.

KING ISLAND REPORT

28 MARCH – 6 APRIL 2017

Clive Minton

TARGET SPECIES:
Ruddy Turnstone. This was the 18th catching visit since March 2007.

OBJECTIVES

1. Deploy the remaining 30 geolocators.
2. Retrieve as many existing geolocators (deployed prior to November 2016) as possible.
3. Amplify November 2016 data on the percentage of juveniles in the King Island population (November data indicated a very high percentage of juveniles).
4. Collect more data on weights prior to migration; particularly data to identify whether there are differences in weights by capture site.
5. Collect data on the proportion of males and females at each capture site.
6. Take throat and cloacal swabs to assess the prevalence of current virus infections, and to further isolate any viruses we do detect.
7. Take blood samples to assess the level of antibodies in the population, i.e. determine whether captured birds have been exposed to previous infection, notably anything nasty on their southward migration from Asia. Blood samples may also be screened for other viral infections e.g. Newcastle Disease, Corona Virus (e.g. SARS and MERS).
8. Collect faeces from all birds processed – this will be fed to chickens to see if the micro biome of pre-migratory Turnstone will increase chicken growth rates.

Population count

As usual on each of our visits to King Island, a total population count was made for the whole of the west coast of King Island by visiting all the known locations for Turnstone flocks. The team split into three groups to carry out the main count over the high tide period on 28 March. Only minor adjustments were made to a few of the figures in the light of our experience of the subsequent nine days.

Net setting Porky Beach

The count results are given in Table 1. There was a huge increase in population from 597 in February 2016 to 843 this year. This is the highest count since 2010. At almost every location visited, a flock of Turnstone was present. Furthermore, the numbers were usually at the upper end of the range recorded in recent years. This was true for almost every location, but in the south west section it was particularly noticeable with an amazing 347 Turnstones in the Surprise Bay to Stokes Point section (including Seal Bay).

Subsequent catching revealed that the exceptional proportion (31%) of juvenile (first year) birds in the population accounted for most of this large increase. Assuming the proportion of young birds was uniform across the island there would have been 261 juveniles in the count, which more than accounted for the 246-bird increase since the February 2016 count. However, this does not allow for the natural 10-15% mortality which would be expected on the 597 birds that were recorded at the same sites in February 2016. Thus, there must have been some immigration of birds from elsewhere to account for the population figure recorded this March.

It will be interesting to follow the population trajectory in the future after this abnormal increase in the 2016/17 non-breeding season.

Stokes Point – bird extraction

Catching

Seven catches were made on the nine days of catching attempts during the visit (Table 2). The team got off to a brilliant start, with five successive good catches in the first five days averaging almost 40 birds per catch. Maybe a touch of overconfidence, plus a group of Turnstones which had not read the rules of the game, lead to two frustratingly blank days on the 3 and 4 April at Surprise Bay. This was partly rectified after we moved the net location to the southern end of the Bay and made a nice catch of 21 Turnstone on the morning of the 5 April. It was rather disappointing to finish with a catch of just seven birds at Central Manuka when the potential of a catch of 20+ was certainly there. But we were becoming pressed for time (time and tide, and aircraft, wait for no one!). The total of 216 Turnstones caught was the highest visit total since March 2010.

There were two other really good features of the catch data: the high proportion of juveniles and the number of geolocators retrieved. These are detailed in the section below.

The opportunity has also been taken of including in this report a summary of all catches made on King Island during the 18 visits since March 2007 (Table 3). Altogether, 3213 Ruddy Turnstones have been caught in 107 catches, with an average catch size of 30 birds. On average 178 Ruddy Turnstones have been caught on each visit.

Percentage Juveniles

Everyone was delighted when, from the very first catch onwards, we realised that Turnstones must have had an exceptionally successful breeding season in the Arctic summer of 2016. The proportion of juveniles in every catch was high with the highest being 52% juveniles in our first catch of 27 Turnstones at North Manuka. Full details of the percentage of juveniles in each catch are given in Table 2.

Table 4 gives the percentage of juvenile Turnstone in catches of Turnstone made on King Island over the past 11 years. Only data from the February/March/early April visits are included because it is thought that there are still a small number of juvenile birds on migration through King Island, to Tasmanian and New Zealand non-breeding areas, in November. The table shows that the 31% figure for birds caught in the 2016/17 non-breeding season is the highest for any of the 11 years of our study so far.

The figures also reveal the Turnstone is a species subject to wide fluctuation in breeding success. In the 11 years of the study there have been two exceptionally good breeding seasons (the Arctic breeding seasons of 2013 and 2016) and four years of almost complete breeding failure (the Arctic summers of 2006, 2008, 2012 and 2015).

This extreme variation in breeding success may be related to the Turnstone breeding in the higher Arctic regions of northern Siberia. Geolocator data has shown that the New Siberian Islands are the centre of their breeding area.

Geolocators

The VWSG has deployed 60 new geolocators on Ruddy Turnstone on King Island in each of the last four years. This is to ensure that a sufficient volume of data accrues for detailed studies by Deakin University. These especially include repeat migration data recorded by geolocators on individual birds and will test the constancy or flexibility of individual Ruddy Turnstones' migration strategy in the East Asian-Australasian Flyway.

A record number of 30 geolocators was retrieved from Ruddy Turnstone during the VWSG's most successful visit to King Island in November 2016. We had expected to have pretty well emptied the pool with that effort and for there to be very few Turnstones still roaming King Island with un-retrieved geolocators. We were therefore extremely surprised to retrieve another 16 on this visit, with half of these being two or more years old. On quite a few of these the unit had stopped recording new information and it will have to be sent back to the UK manufacturers for downloading. This high retrieval rate (46 units in the current 'bird-year') will enormously help our studies, especially because quite a number of these retrievals are from birds for which we now have two or more migration tracks recorded. At least one bird is now carrying its fourth geolocator, because wherever possible when we take a geolocator off us put a new one on.

Counting geolocators put on birds in November 2016 a total of 60 new geolocators has again been deployed in the 2016/17 non-breeding season.

Deakin University Studies

Deakin University are currently working closely with the World Health Organization in cloacal and blood for the presence of avian diseases (or the antibodies from previous infections). They have already published a number of papers incorporating King Island Turnstone data and geolocator data. It is probable they will become even more closely involved in the future with a comprehensive analysis of all the aspects of the Turnstone data we have collected in the past ten years.

Blood sampling

Acknowledgements

The Group's successful and enjoyable fieldwork activities on King Island have benefitted from the kindness and support of many people over the years. Firstly, the VWSG itself is thanked for its members always ensuring that we have an adequate team (nine or ten people for each visit). This has been done at considerable personal expense by each participant (over $1100 per person for the most recent visit, including the airfare from Moorabbin). Jenny Marshall is thanked for very kindly making her large house in Currie available to the group as its main base/headquarters. Graeme and Margaret Batey are thanked enormously for having additional members of the team sleeping at their house.

Margaret Bennett is thanked for storing equipment for the fieldwork activities. She was not able to be involved as much as usual on the recent visit but will hopefully be more available in the future. Angus Roberts, the skipper of the SeaRoad Ferry for many years, is also hugely thanked for transporting a vehicle and equipment from Melbourne to King Island (and back) over the last ten years. Unfortunately, this ferry service has recently been terminated. King Islands Airlines has served us extremely well over the years with much cooperation and flexibility concerning transport of us and our equipment to/from King Island. They were especially generous to the recent visit when we no longer had the option of bringing equipment via car/ferry. They transported a whole range of equipment (weighing 200kg) free of charge to/from King Island.

Everyone hopes we will be able to continue our studies for some years to come. It is rare for such intensive studies of a species to be carried out on the non-breeding population of a wader anywhere in the world.

Initial note re geolocators retrieved on King Island, Tasmania, March/ April 2017
The team retrieved another 16 geolocators from Ruddy Turnstones during their recent visit to King Island in March/ April 2017. This is in addition to the 30 loggers retrieved during the November visit making a total of 46 geolocators retrieved this season from this one area. Certainly an exceptional achievement.

However, the instruments retrieved were deployed between 2013 and 2016 meaning that some were 4 years old and their condition is unknown at this stage. Of the 16 returned, I have been able to download data from eight of them, meaning that the remaining eight will need to be sent to James for assistance in downloading. I have set out some preliminary comments on these retrievals below:

- Of the eight downloaded seven showed more or less 'normal' tracks for northward and southward migration.
- One exception was WMA (deployed Feb 2015) which went directly from its stopover in Taiwan to Sakhalin Island and then to the breeding grounds. (The majority go through a stopover in the Yellow Sea prior to the breeding grounds). On the return journey, it flies from the Sea of Okhotsk to Japan and then to the Pacific Islands (Solomons?) before returning to Australia. The second recorded year (2016) showed a similar track north. Unfortunately, the logger stopped while in the breeding grounds in July 2016.
- Several of the birds recorded (or potentially recorded) repeat tracks.
    - WAT 2015
    - KN 2011 and 2012
    - XNU 2015
    - ZDB SA bird with track in 2013. Current geo deployed 2013- waits downloading.
    - ZNM 2013
    - WMJ deployed 3/15 and stopped 7/16 on breeding grounds. 1.5 yrs. data
    - WMA deployed 3/15 and stopped 7/16 on breeding grounds. 1.5 yrs. data

There remains a lot of work yet to analyse these data for all 46 geolocators from King Island. This is in addition to a further 14 loggers retrieved in South Australia. I will provide any items of interest as they emerge during the months ahead but you will need to be patient.

Again, congratulations to the teams on King Island and in South Australia for such a successful season of retrievals.

Ken Gosbell
13 April 2017

Table 1: Counts of Ruddy Turnstone on King Island, March 28 to April 6 2017 and previous years

West Coast	Mar/Apr 2017		Feb 2016		Feb 2015		Mar 2014		Mar/Apr 2013		Apr 2011		Mar/Apr 2010		1985*
Seal Bay	68		56		77		43		12		n.c.		60		
Stokes Point	72		40		49		62		60		30		20		
Stokes Point to Surprise Bay	91		29		66		52		12		70		110		
Surprise Bay (including Denby Beach)	116		90		71		106		80		75		105		
Dripping Wells	60		65		30		45		75		62		65		
Ettrick Beach	0		0		0		0		0		0		0		60
Currie Golf Course (Burgess Bay)	25		65		66		42		75		85		90		330
Currie Harbour	39		0		0		26		20		15		25		
Dirty Bay	0		0		0		?		0		13		30		
Manuka - South	55}		6}		24}		40}		65}		45}		10}		
Manuka - Central	54}	159	58}	97	84}	171	50}	150	70}	165	50}	155	150}	175	67
Manuka – North (Whalebone)	60}		33}		63}		60}		30}		60}		15}		
South Porky	70		35		38		0		25		9		0		28
Unlucky Bay	40		1		19		15		25		48		10		20
North of Bungaree Creek	0		0		0		0		n.c.				0		35
Duck Bay Green Island Point South Whistler	63} 8}	71	53		60		35		70		70		115		260
Whistler Point	2		42		0		0		0		4		40		106
The Springs	30		24		23		28		26		50		45		
Total	**843**		**597**		**670**		**604**		**645**		**686**		**890**		

* Count by D. B. Whitchurch

Table 2a: VWSG Catch Details 2017: King Island Visit March 28 to April 6 2017

Date	Location	Species	New	Retrap	Total	(Juv)
29.3.17	North Manuka	Ruddy Turnstone	17	10	27	(14 = 52%)
	(13 geos deployed, 2 retrieved)	Hooded Plover	8	-	8	(1)
	(4 ♂ 9 ♀)		25	10	35	
30.3.17	South Manuka	Ruddy Turnstone	27	18	45	(12=26.7%)
	(17 geos deployed, 6 geolocators retrieved)					
	(18 ♂ 15 ♀)					
31.3.17	Dripping Wells	Ruddy Turnstone	13	15	28	(10=37%)
	(2 geos retrieved)					
	(10 ♂ 8 ♀)					
1.4.17	Porky Beach	Ruddy Turnstone	23	25	48	(14=29%)
	(3 geos retrieved)	Pied Oystercatcher	2	-	2	(-)
	(18 ♂ 16 ♀)		25	25	50	
2.4.17	Stokes Point	Ruddy Turnstone	26	14	40	(10=25%)
	(1 geo retrieved)	Sooty Oystercatcher	1	-	1	(-)
	(11 ♂ 19 ♀)					
			27	14	41	
5.4.17	Teal Bay/ Surprise Bay	Ruddy Turnstone	16	5	21	(4)
	(1 geo retrieved)					
	(9 ♂ 8 ♀)					
6.4.17	Central Manuka	Ruddy Turnstone	3	4	7	(3)
	(1 geo retrieved)					
	(- ♂ 4 ♀)					

Table 2b: Totals for King Island 29/3 – 6 2017

	New	Retrap	Total	(Juv)	
Ruddy Turnstone	125	91	216	(67)	(31.0%)
Hooded Plover	8	-	8	(1)	
Pied Oystercatcher	2	-	2	(-)	
Sooty Oystercatcher	1	-	1	(-)	
Total:	136	91	227		

(7 catches)
30 geolocators deployed
16 (old) geolocators retrieved
(70 ♂ 79 ♀)

Table 3: Ruddy Turnstone Catches on King Island 2007-2017

Date of visit	Catches	Total birds caught
March 2007	7	307
March 2008	8	428
March 2009	6	223
March 2010	8	217
November 2010	3	72
April 2011	8	211
November 2011	3	117
April 2012	7	118
November 2012	5	133
March/April 2013	10	185
November 2013	2	55
March 2014	6	168
November 2014	6	150
February 2015	5	154
Nov/December 2015	5	158
February 2016	4	79
November 2016	7	111
Mar/Apr 2017	7	227
11 years (18 visits)	**107**	**3213**

*Excludes catches of Silver Gull.
Average individual catch size: 30 birds
Average catch total per visit: 178 birds

Table 4. Ruddy Turnstone Catch Totals and % juveniles on King Island 2007-17

Year	New	Recapture	Total	(Juveniles)
2007	230	11	241	(0)
2008	354	65	419	(75)
2009	124	99	223	(0)
2010	123	88	211	(30)
2011	122	75	197	(29)
2012	65	53	118	(18)
2013	125	130	255	(3)
2014	81	92	173	(53)
2015	56	63	119	(16)
2016	27	48	75	(1)
2017	125	91	216	(67)
Total:	**1432**	**815**	**2047**	**(292)**

Note: only includes Feb/Mar/April visit catches, not Nov. visits.
[Poor Arctic breeding years were 2006, 2008, 2012 and 2015]
[Very good Arctic breeding years were 2013 and 2016]

HAVE YOU SEEN?

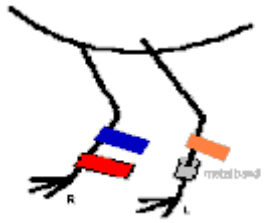
By Roz Jessop

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.

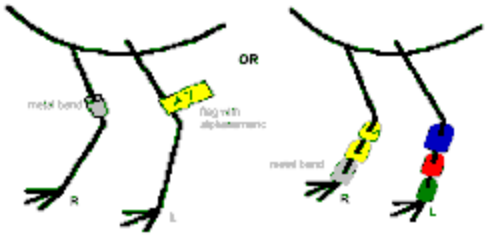
Please send details (including date and place) to
Dr Mike Weston, Deakin University,
221 Burwood Hwy, Burwood, 3125.
Email: mike.weston@deakin.edu.au
Phone: (+61 3) 9251-7433

HOODED PLOVER, OYSTERCATCHER OR GREY WADER WITH FLAGS?

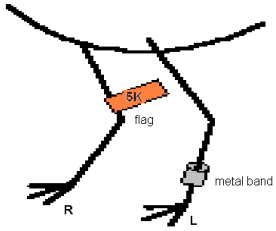


Hooded Plover with colour bands or flags?
Phillip Island Nature Park has an ongoing study colour flagging Hooded Plover chicks on Phillip Island. Any sightings of colour marked or alpha numeric flagged Hooded Plover should be sent to Jon Fallaw jfallaw@penguins.org.au or flag sightings for SE of South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



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 2016 ARCTIC SUMMER, BASED ON JUVENILE RATIOS OF BIRDS WHICH SPEND THE NON-BREEDING SEASON IN AUSTRALIA

CLIVE MINTON[1], ROZ JESSOP[2] & CHRIS HASSELL[3]

INTRODUCTION

One thing which banders in Australia look forward to greatly each year is the return of the northern hemisphere migrants – adults first followed a few weeks afterwards by the juvenile birds. There is eager anticipation to know what sort of breeding season each species has had during the Arctic summer. Sometimes there is a fair correlation between each species, for example the majority having had a 'good' year or a 'bad' year. But nearly always there are some marked differences of a few species from the norm. These variations will be the result of differences in weather conditions and/or predation levels in the respective breeding areas of each population.

The percentage of juveniles in the populations of waders which we cannon net in the November to March period is the best measure we can make of their relative breeding success. It needs to be recognised, however, that these data are collected, on average, some six months after the end of the Arctic breeding season (June/July). Since this time birds will have made their southward migration during which juvenile birds would be expected to suffer higher mortality than adults. The percentage juvenile figures measured will not be the same therefore as they would have been if measured immediately after the birds had fledged in late-July. However, by collecting such data in a standard manner each year (cannon netting samples of each species at a variety of locations) comparisons between years and between species can be made. But because of potential non-homogeneity in the distribution of adult and juvenile/first year birds in their non-breeding areas, the figures should more correctly be considered an index of breeding success rather than an absolute measure.

'Percentage juvenile' data has been collected by the VWSG since the 1978/79 breeding season in south-east Australia (SEA) and since the 1998/99 non-breeding season in north-west Australia (NWA). So there is a long history of 'breeding success' data against which to compare each new year's results.

This paper presents the data collected during the 2016/17 non-breeding season in Australia. A range of species is covered, with birds being caught in two widely separated regions of Australia, some 3000 km apart. Data is thus available on some species from two widely separated non-breeding areas. In many cases the breeding location of the population of each species in each of these non-breeding areas is now known from banding, flagging, geolocator and satellite transmitter studies. This will permit, in due course, further analyses of possible reasons for the recorded variations in annual breeding success.

METHODS

Samples were caught at the usual range of locations in both NWA and SEA. Only birds caught by cannon netting are included in the figures.

RESULTS AND DISCUSSION

The 2016/17 data is presented in the usual format in Tables 1-4.

In south-east Australia, good samples of Red-necked Stint, Curlew Sandpiper, Ruddy Turnstone and Sanderling were obtained. But only modest numbers of Red Knot and Bar-tailed Godwit and only a handful of Sharp-tailed Sandpiper were obtained. The scarcity of Sharp-tailed Sandpiper in the sampling coastal areas was caused by much suitable inland habitat being available, created by favourable rains over the winter months.

Bar-tailed Godwit and Red Knot are always difficult to catch in good numbers but the samples obtained are considered sufficient to classify breeding success. The standout result was the 46.7% juvenile Curlew Sandpipers. A similar exceptionally high figure was obtained from north-west Australia and a similar figure was even reported from India. Curlew Sandpipers must therefore have had a breeding bonanza in the Arctic summer of 2016 over a significant proportion of their breeding range. The figure means that nearly half the population in Australia during the non-breeding season was birds in their first year of life. A 40% juvenile ratio means that there were 1.3 juveniles still alive six months after the end of the breeding season for every adult breeding pair. This is a phenomenal reproduction rate for an

Arctic-breeding wader! It is quite unprecedented in any species monitored here in Australia over the last 39 years.

This statement might look peculiar if taken against the data for Red Knot, also included in Table 1. However, in the case of Red Knot, the majority of young birds do not cross the Tasman Sea during their first year of life to join the large populations of adults in New Zealand. Instead the birds remain in south-east Australia, thus augmenting the juveniles' figures, before crossing to their long-term non-breeding area in New Zealand at the beginning of their second year. Bar-tailed Godwit show the same behaviour but not to quite the same magnitude. Thus, the norms to which we compare percentage juvenile figures are higher than might be expected in these two species, especially in the Red Knot.

Ruddy Turnstone and Red-necked Stints which spend the non-breeding season in south-east Australia also had an excellent breeding season in the 2016 Arctic summer. However, Bar-tailed Godwit percentage juvenile figures were below average. Although the sample was small, it appears Sharp-tailed Sandpipers did not breed well either.

North-west Australian wader populations also had a much better breeding year in the 2016 Arctic summer compared with the previous year. Again, Curlew Sandpipers and Ruddy Turnstone stood out, as in south east Australia. Unfortunately, Great Knot had another relatively poor breeding year. Red-necked Stint populations wintering in north-west Australia appear to have had a poorer Arctic breeding season than those wintering in south-east Australia.

A feature of the north-west Australian data is that all three species which have breeding areas slightly below the Arctic region had particularly poor breeding outcomes. This is especially unfortunate for Greater Sand Plovers and Terek Sandpipers which have now had two consecutive poor breeding seasons.

CONCLUSION

The improvement for most wader populations in their breeding success in the Arctic summer of 2017, compared with the 2016 Arctic summer, is very pleasing to note. However, it will require many more good breeding seasons to restore the worst of the population losses which have been recorded in the East Asian-Australian Flyway in the last 20 years.

ACKNOWLEDGEMENTS

Large teams are required for the catching and banding operations from which this data is derived. Controlled strongly in our fieldwork opportunities by forecast tide heights, we regularly have to suffer less than ideal climatic conditions in order to make the required catches. Those members who have taken part in VWSG and AWSG fieldwork teams during each year are greatly thanked for their efforts and perseverance.

Thanks are due to the various authorities in Victoria, Tasmania, Western Australia and South Australia who granted the necessary ethics and scientific research permits. The Australian Bird and Bat Banding Scheme in Canberra is also thanked for providing permits and bands for this fieldwork. Chris Hassell, of the Global Flyway Network, was partly funded by the Netherlands Organisation for Scientific Research (NOW) and partly by the 2014 Spinoza Prize awarded to Theunis Piersma by the Dutch government.

Table 1. Percentage of juvenile (first year) waders in cannon-net catches in south-east Australia 2016/2017.

Species	No. of catches		Total caught	Juveniles		Long-term median* % juvenile (years)		Assessment of 2016 breeding success
	Large (>50)	Small (<50)		No.	%			
Red-necked Stint *Calidris ruficollis*	4	4	2671	837	**31.3**	17.0	(38)	Very Good
Curlew Sandpiper *C. ferruginea*	1	3	344	164	**47.6**	10.6	(37)	Exceptional
Bar-tailed Godwit *Limosa lapponica*	0	1	24	3	**12.5**	16.5	(27)	Below Average
Red Knot *C. canutus*	0	2	31	28	**90.3**	65.5	(20)	Very Good
Ruddy Turnstone *Arenaria interpres*	1	18	506	145	**28.6**	10.5	(26)	Very Good
Sanderling *C. alba*	1	0	143	25	**17.5**	12.6	(25)	Good
Sharp-tailed Sandpiper *C. acuminata*	0	1	13	1	**(7.7)**	14.8	(34)	(Very Poor)

All birds cannon-netted in the period 2th November to 25th 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 2016/2017 figures.

Table 2. Percentage of juvenile (first year) waders in cannon-net catches in north-west Australia in 2016/2017.

Species	No. of catches		Total caught	Juveniles		Assessment of 2016 breeding success
	Large (>50)	Small (<50)		No.	%	
Great Knot *Calidris tenuirostris*	5	7	553	50	**9.0**	Below Average
Bar-tailed Godwit *Limosa lapponica*	1	5	182	20	**11.0**	Average
Red-necked Stint *C. ruficollis*	3	6	390	67	**17.2**	Average
Red Knot *C. canutus*	1	5	97	21	**21.6**	Good
Curlew Sandpiper *C. ferruginea*	1	7	149	60	**40.3**	Exceptional
Ruddy Turnstone *Arenaria interpres*	0	5	25	9	**36.0**	Very Good
Non-arctic northern migrants						
Greater Sand Plover *Charadrius leschenaultii*	4	6	715	87	**12.4**	Very Poor
Terek Sandpiper *Xenus cinereus*	0	7	120	7	**5.8**	Very Poor
Grey-tailed Tattler *Heteroscelus brevipes*	1	10	228	33	**14.5**	Below Average

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 2016/2017.

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	16/17	*Average (19yrs)*
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	28.6	*14.0*
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	31.3	*16.9*
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	47.6	*15.7*
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	-	*18.0*
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	17.5	*14.5*
Red Knot *C. canutus*	(2.8)	38	52	69	(92)	(86)	29	73	58	(75)	(-)	(-)	78	68	(-)	(95)	(100)	(100)	90.3	*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	12.5	*24.0*

All birds cannon-netted between 15th November and 25th 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 18 years) exclude figures in brackets (small samples) and exclude 2016/2017 figures.

Table 4. Percentage of first year birds in wader catches in north-west Australia 1998/1999 to 2016/2017...

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	16/17	Average (18yrs)
Red-necked Stint *Calidris ruficollis*	26	46	15	17	41	10	13	20	21	20	10	17	18	24	15	19	10	11.1	17.2	*19.6*
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	40.3	*16.7*
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	9.0	*11.3*
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	21.6	*16.1*
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	11.0	*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	12.4	*22.7*
Terek Sandpiper *Xenus cinereus*	12	(0)	8.5	12	11	19	14	13	11	13	15	19	25	5	12	15	12	9.2	5.8	*13.4*
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	14.5	*19.8*

All birds cannon-netted in the period 1 November to mid-March. Averages (for previous 18 years) exclude figures in brackets (small samples) and exclude 2016/2017 figures.

VWSG Financial Report 2016/17

The financial performance of the VWSG in the 2016/17 year was an improvement on the previous year. A surplus of around $6,000 was recorded, which compares favourably with a loss of a similar amount in 2015/16.

In fact, the relative financial performance was largely an artefact of the timing of purchases. We consume approximately $2,000 worth of electric fuses, a similar value of engraved leg-flags and several hundred dollars' worth of black powder each year. However, we usually only make one purchase of such items per year and thus the timing of this will significantly affect our annual accounts. For instance, in the latest financial year we did not purchase any electric fuses. Also, the geolocators which we used on Red-necked Stints were all purchased in the 2015/16 financial period.

The accounts are presented with income and expenditures divided into different segments. In particular, ongoing fieldwork equipment costs and consumable items are grouped together. Thus our overall fieldwork expenditure for the 2016/17 year was $11,497 compared with $18,493 in the previous financial year. The costs of obtaining a Firearms Certificate are also included this year and this will recur in future years as we increase the number of individuals in the group who are licensed to handle black powder (for the cartridges).

In 2016/17 we offered the Bulletin in electronic form instead of 'printed form only' to VWSG members. About half of the membership decided to take the electronic form, saving around $1,000 in printing costs. Also, because of the increased subscription level (from $20 to $30) our subscription income increased significantly, to $3,395.

As always, the financial viability of the group depends on generous grants and donations from group members and other organisations. Xenia Dennett fantastically again donated $7,500 and this was again used to assist with the costs of our electronic tracking work. Various other VWSG members made donations totalling $968 – a wonderful bonus. And a bonus still to come is a generous contribution of $10,400 from Deakin University for VWSG making 1,040 individual birds available for the collection of data (mainly cloacal swabs for avian disease testing) in the field.

CoastCare also gave us another generous contribution ($4,250) towards fieldwork costs and equipment purchase and maintenance.

Without these marvellously helpful contributions we would be able to carry out far less fieldwork and our current high levels of operational efficiency would be compromised.

We plan to review our cash position over the next few weeks and potentially alter the way we hold money to give us a greater level of interest income. We will also be closing our Macquarie cash account as it has rarely been used in recent years.

Helen Vaughan and Clive Minton

Victorian Wader Study Group Inc. ABN 12 794 488

Income and Expenditure Statement for the year ended 30 June 2017

Income		**Expenditure**	
Subscriptions	3395.00	Printing of Bulletins	1182.50
Donation, Xenia Dennett	7500.00	Postage, photocopying etc.	141.15
Other donations by VWSG members*	968.00	Secretarial Assistance	5602.26
Interest cheque account	12.54	Bank Charges	7.50
Interest, cash reserves	131.68	Incorporation fee	55.80
Interest term deposit	323.38	King Island shortfall	45.80
Grant from CoastCare	4250.00	Artwork	300.00
		King Island Port fee	100.00
		Firearms License (Rob Patrick)	264.20
		Trailer registration	57.00
		Miscellaneous items	40.85
Sub-total	**$16,580.60**	**Sub-total**	**$7,797.06**
Excess AGM meals	287.00	Engraved flags	1742.51
Proceeds from raffle	480.00	Black Powder	380.00
Excess from Corner Inlet, SA stays	109.20	Sheet for flags	319.00
		Ropes	142.00
		Balances	400.00
		Rubber	170.55
		Trailer, equipment repairs	432.88
		Miscellaneous equipment	113.22
Sub-total	**$876.20**	**Sub-total**	**$3,700.16**
TOTAL INCOME	**$17,456.80**	**TOTAL EXPENDITURE**	**$11,497.22**
Cash Balance at 01/07/2016		*Cash balance at 30/06/2017*	
Westpac Cheque Account	6850.59	Westpac Cheque Account	12077.98
Westpac Cash Reserve	12066.92	Westpac Cash Reserve	12193.60
Westpac Term Deposit	35541.25	Westpac Term Deposit	35864.63
Macquarie Cash Account	230.67	Macquarie Cash Account	231.80
Petty Cash	4.00	Petty Cash	15.00
		(Unpresented cheque)	(80.00)
NET TOTAL	**$54,423.43**	**NET TOTAL**	**$60,383.01**

*Hugo Phillipps Prue Wright Priscilla Park Mike Connor Bob Swindley Deryn Thomas Bev and Geoff Abbott Jonathon Stevenson Ann Renkin Heather and Jim Phillipson Bob Dawson Bethany Hoye Andrew Browne Mary-Ann Van Trigt Heather Alexander Tania Ireton

Bev	Abbott
Geoff	Abbott
Ruby	Albury
Heather	Alexander
Charles	Allen
Jocelyn	Allen
Malcolm	Allen
Mark	Anderson
Peter	Anton
Robyn	Atkinson
Steve	Atkinson
Rose	Baulch
Graham	Beal
Jenny	Beal
Margaret	Bennett
Andy	Bennett
Gail	Berry
Rob	Berry
David	Billinghurst
Robin	Borland
Robert	Brinkman
Judy	Brown
Malcolm	Brown
Andrew	Browne
Sue	Bryceson
Kate	Buchanan
Anna	Buchhorn
Paul	Buchhorn
Hannah	Buys
Sarah	Campbell
Jeff	Campbell
Cathy	Cavallo
Richard	Chamberlain
Ann	Chappel
Mervyn	Chappel
Smathie	Chong
Maureen	Christie
Allan	Clarke
Rob	Clemens
Bretan	Clifford
Pete	Collins
Mike	Connor
Dave	Cropley
Michael	Dawkins
Bob	Dawson
Xenia	Dennett
Barbara	Dickson
Joris	Driessen
Dianne	Emslie
Alice	Ewing
Jon	Fallaw,
Maureen	Fitzgerald
Robin	Fitzgerald
Amelia	Formby
Angela	Gibbs
Colin	Gibbs
Don	Gillespie
Joyce	Gillespie
Kate	Gorringe-Smith
Carlene	Gosbell
Ken	Gosbell
Andrew	Gosden
Kath	Gosden
Olivia	Gourley
Doris	Graham
Nathan	Gregory
Nicole	Grenfell
Patrick-Jean	Guay
Jim	Gunn
Surong	Gunn
Angie	Gutowski
Petra	Hanke
Birgita	Hansen
Neville	Hatten
Becky	Hayward
Peter	Hermans
Oki	Hidayat
Andrej	Hohmann
Patsy	Hohnen
David	Hollands
Margaret	Hollands
Vivien	Holyoake
Tracey-Ann	Hooley
Bethany	Hoye
Tania	Ireton
Roz	Jessop
Murray	Johns
Penny	Johns
Steve	Johnson
Greg	Kerr
Debbie	King
Marcel	Klaassen
Irma	Kluger
Angus	Lamin
Tessa	Lamin
Brett	Lane
Bruce	Lavender
Hannah	Lee
Mark	Lethlean
Janet	Limb
Simeon	Lisovski
Moira	Longden
Debbie	Loyn
Richard	Loyn
John	Lyons
Susie	Lyons
Meg	Macmillan
Pat	Macwhirter
Grace	Maglio
Ila	Marks
Brian	Martin
Gary	Matthews
Golo	Maurer
Clare	McCutcheon
Joan	McDonald
Rod	McFarlane,
David	Melville
Eric	Miller
Heidi	Miller
Clive	Minton
Pat	Minton
Stewart	Monckton
Lorraine	Moore
Rowan	Mott
Jordan	O'Neill
Maureen	O'Neill
Paul	O'Neill
Priscilla	Park
Graham	Parkyn
Vicki	Parkyn
Penelope	Pascoe
Linda	Patrick
Rob	Patrick
Reece	Pedler
Sara	Petrovic
Hugo	Phillipps
Heather	Phillipson
Jim	Phillipson
Alan	Pilkington
Wendy	Pilkington
Mike	Preeston
Thomas	Putt
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Marj	Reni
Ann	Renkin
Jenny	Reside
Jim	Reside
Annabel	Richards
Roger	Richards
Don	Ripper
Jude	Ripper
Alice	Risely
Bruce	Robertson
Don	Robertson
Greta	Robertson
Annie	Rogers
Danny	Rogers
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Sandy	Stewart
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Bob	Swindley
Naoko	Takeuchi
Laura	Tan
Christine	Taylor
Susan	Taylor
Deryn	Thomas
Lyne	Thomas
David	Trudgen
Wendy	Trudgen
Connor	Van Doorn
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Paul	Van Loon
Mary-Ann	Vantrigt
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FINP
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(*Phil Straw)*
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