Monitoring Hooded Plovers on the Fleurieu Peninsula:
Distribution, breeding success and management in the 2015/2016 season

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Government of South Australia
Adelaide and Mount Lofty Ranges
Natural Resources Management Board

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Contents

Top right: Shelly Beach (photo: Emma Stephens); Left: adult Hooded Plover with two chicks at Aldinga (photo: Neville Hudson); Bottom right: Beach update sign (photo: Elizabeth Steele-Collins).

Introduction

The pressures placed on the Australian coast by over 85% of the population living within 50kms of the coast, a growing trend for a 'seachange', and coastal tourism representing a 20 million dollar recreation investment, undoubtedly takes its toll on the resident shorebirds that breed on our ocean beaches during the spring and summer. In South Australia, there are four species of resident shorebirds, the Pied and Sooty Oystercatchers, Red-capped Plover and Hooded Plover. These species nest on ocean beaches and offshore islands along with other seabirds such as the nationally threatened Fairy Tern.

Hooded Plovers are listed as Vulnerable and both Oystercatcher species as Rare in South Australia under the National Parks and Wildlife Act 1972. Hooded Plovers (Eastern) are also listed as Vulnerable under national legislation, the Environment Protection and Biodiversity Conservation Act 1999 and at the National Threatened Species Summit in July 2015 the Hooded Plover was listed as one of 12 bird species in Australia for action and to improve the trajectory of by 2020.

The Hooded Plovers are the most threatened of beach-nesting resident shorebirds because they are habitat specialists. They are limited to breeding exclusively on high energy ocean beaches in South Australia, with the rare exception of some coastal saline lakes in parts of the South East coast and on the Eyre Peninsula. The oystercatchers have a broader nesting habitat range which includes rocky outcrops, islands and more heavily vegetated dune areas, while red-capped plovers occupy a range of habitats including samphire saltmarsh, freshwater wetlands, low energy beaches, saltfields and claypans.

Beach-nesters make simple nest-scrapes in the sand and their well-camouflaged eggs and chicks are extremely difficult to spot. These well camouflaged nests are therefore at great risk of being trampled by visitors to the beach. People, unleashed dogs, horses and vehicles on beaches not only pose a direct threat, but also disturb incubating adults, resulting in temporary nest abandonment which exposes the eggs to harsh temperatures and predators such as ravens, gulls, foxes and cats. This is particularly true of disturbances caused by unleashed dogs, where adults spend long periods away from the nest. Furthermore, residential development and littering attract increased numbers of predators to beaches.

Chicks cannot fly for 5 weeks and need to forage on the beach in order to survive – this places them in harm's way, and they are easily crushed or disturbed by people, dogs and vehicles on the beach. If they spend too much time in hiding, they can starve to death or be exposed to harsh temperatures in the absence of brooding. The parent birds try to distract potential threats, leaving the chicks unattended and exposed to predators. In addition, vehicles on beaches compact the sand, killing the bulk of prey items that these shorebirds rely on.

Given the severe pressures placed on coastal breeding birds, in particular the threatened status of the Hooded Plover, BirdLife Australia embarked on a project to 'promote coexistence between recreationists and beach-nesting birds' in 2006. Beaches will always be popular places for recreation within Australian culture, and the best solution to a problem which is very much human generated, is to try and engage people to change their behaviours and help protect these birds so they have a future. This project has been funded over the years by the Australian Government, Landcare Australia, The State Government of Victoria, several NRM Boards throughout South Australia and various philanthropic trusts and donors including the Hugh D. T. Williamson Foundation.

The main aim of the Beach-nesting Birds' (BNB) Project is to involve coastal communities and land managers in protection of breeding sites to see an overall improvement in breeding success. The project focuses on the Hooded Plover in Victoria and South Australia and uses an adaptive management approach, improving on-ground management and community awareness strategies over time. The results are applicable in a broader sense to other beach-nesting birds around Australia.

On the Fleurieu Peninsula, the project aims to:

1. Maintain a distribution map and database of location of breeding pairs of Hooded Plovers;
2. Estimate population numbers of Hooded Plovers in an eastern mainland census every two years (e.g. November 2014, November 2016, November 2018);
3. At the time of each biennial count, assess the threats to each pair in a snapshot assessment and any management in place to alleviate these threats;
4. Assess occurrence of threats at breeding sites from data collected during the biennial count and map sites according to threat status;
5. Monitor the breeding status of all known pairs on the Fleurieu Peninsula during the breeding months (August-March). Seek to maintain monitoring of these sites over at

least 5 years for a comparison of site-based threat profiles and to quantify improvements in breeding success related to management [in separate report compiled by BirdLife Australia];

6. For sites where we have been collecting threat data, seek to assess changes in the occurrence and severity of threats over time and the impact of threats on breeding outcomes;
7. Carry out on-ground management of vulnerable breeding sites following management directions outlined in 'A practical guide to managing beach-nesting birds in Australia';
8. Investigate the effectiveness of nest site protection (does management work) and make modifications for subsequent seasons. Managements need to adapt to local site and beach user specifications;
9. Use nest cameras to detect and identify nest predators and to determine nest fates. This is done following strict protocols and to a limited degree to avoid any potential for training predators to associate cameras with nests;
10. Band a sample of Hooded Plovers on the Fleurieu Peninsula and maintain resighting database so as to track movements, dispersal and document survival rates and site fidelity. This will lead to better knowledge about exchange of birds between the Fleurieu Peninsula and other regions of South Australia, and possibly other states, enabling a better idea of what we consider a population;
11. Establish 'Friends of the Hooded Plover' regional groups on the Fleurieu Peninsula to encourage community ownership and long-term sustainability of the program, and;
12. Engage communities in Hooded Plover conservation via organised events or activities such as the biennial count; scope viewing; dogs' breakfasts; school visits; craft stalls.

The main roles of the different groups working on this project are as follows:

- BirdLife Australia Staff provide strategic direction for recovery of Hooded Plovers across the Eastern mainland, register volunteers, maintain ethics and permit approvals, provide advice, workshops, training and technical support, as well as data analysis and maintenance of the national MyBeachBird database.
- On the Fleurieu peninsula, Natural Resources Adelaide and Mount Lofty Ranges Coast, Marine and Estuary managers and officers coordinate and support the project and volunteers, and local council and Department of Environment, Water and Natural Resources (DEWNR) staff assist with nest protection responses.
- Volunteer Regional Coordinators and Volunteers undertake the very important roles of monitoring breeding birds and site threats, recording data on the portal, installing fences/signs, and talking with the public, etc.

At a regional level, two Coastal Action Plans have been completed for the Adelaide and Mount Lofty Ranges Natural Resources Management Board region; the Southern Fleurieu Coastal Action Plan and for relevant coastal areas of the Metropolitan Adelaide and Northern Coastal Action Plan. These plans contain detailed coastal maps and plant and animal lists. The plans also outline key conservation priorities along the coast, provide suggested actions and identify key players to be involved.

The Coastal Action Plans are used to assist in priority setting of coastal management actions for the AMLR NRM Board, councils and DEWNR. In implementing the Coastal Action Plans, the Adelaide and Mount Lofty Ranges NRM Board resources the local implementation of actions identified in the Coastal Action Plans including implementation of local initiatives to conserve Hooded Plovers.

The South Australian Recovery Plan for the Hooded Plover (Baker-Gabb and Weston 2006) still remains in draft form. Relevant actions and priorities of this draft were incorporated into the Coastal Action Plan's detailed local actions to manage foreshore use to minimise impact on the species during the nesting and fledging season. Key players identified are the Department for Environment, Water and Natural Resources, councils, community and the Natural Resources Management Board. Many of these actions and priorities however, would now need updating due to the considerable advances in research and knowledge of South Australian Hooded Plover sites, threats and actions since 2006.

In view of the status of this species, the Hooded Plover has also been flagged as a focal species for the Southern Fleurieu Coastal Action Plan and for relevant coastal areas of the Metropolitan Adelaide and Northern Coastal Action Plan area.

An overview of the 2015-2016 Breeding Season

Victoria

The Beach-nesting Birds (BNB) project has been running in Victoria since 2006, with breeding success and threats monitored over nine successive breeding seasons for up to 140 pairs (see summary in Table 2).

Success across the state was unusually high, with South Gippsland producing the highest number of fledglings per pair (0.92 fledglings per pair) on mainland Victoria and the Mornington Peninsula having the lowest number of fledglings per pair (0.23 fledglings per pair). Although in the 2014/15 season, Mornington Peninsulas result was 0.12 fledglings per pair, for a National Park which gets over 4 million visitors every year, this season was impressive, but still more can be done to increase the fledgling per pair rate for the area. The western part of the state (Warrnambool to Narrawong), had a consistently high season, with 0.76 fledglings per pair and Bass Coast recorded the highest number of fledglings over 10 years of monitoring with 23 in total (0.63 fledglings per pair). Table 3 summarises fledgling production according to regions along the Victorian coast. Overall, breeding success along the Victorian coastline was 0.79 fledglings per pair, which is assessed as an above average year, this result has not been recorded for the 10 years the Beach-nesting Bird Project has been running.

Table 2. Number of pairs monitored, nests found and their fate across Victoria. Data for previous seasons is incomplete at this stage as vetting of the data is a slow process and BirdLife Australia is currently attempting to sort through a backlog of data, due to losing staff at critical times from funding cuts. Estimates are included to provide an indication of the season. [Phillip Island data has not been included in this table as monitoring here is not coordinated by BirdLife Australia].

Season	Pairs monitored	Total nests	Nests fail egg	Nests Hatched	Nests fledged	# confirmed fledglings	# eggs laid	# chicks hatched
2006/07	90	147	86	61	24	35	353	145
2007/08	86	157	100	57	24	32	372	140
2008/09	79	119	74	45	23	30	290	102
2009/10	103	167	96	70	43	69	386	139
2010/11	114	208	140	67	29	38	469	175
2011/12	120	224	165	51	19	24	474	94
2012/13	128	211	143	66	29	49	484	114
2013/14	130					53		
2014/15	140					55		
2015/16	155					120		

Photo: Dean Ingwersen

Table 3. Number of confirmed fledglings produced by pairs in Victoria (based on data received; including additional pairs monitored by Phillip Island Nature Park) according to the different regions of the coast.

Region	**06/07 106 pairs**	**07/08 100 pairs**	**08/09 96 pairs**	**09/10 119 pairs**	**10/11 123 pairs**	**11/12 137 pairs**	**12/13 148 pairs**	**13/14 144 pairs**	**14/15 156 pairs**	**15/16 173 pairs**
Far West Vic	2	6	11	31	5	1	14	32	25	26
Shipwreck coast	7	3	0	4	0	1	-	-	-	3
Otway coast	0	1	3	0	1	0	2	1	5	10
Surf coast	2	4	2	2	2	2	0	2	3	3
Bellarine	3	3	4	4	3	2	2	4	5	5
Mornington Peninsula	10	6	6	7	10	3	9	1	4	7
Phillip Island	8	4	6	9	7	12	4	8	12	17
Bass Coast	4	2	4	20	17	6	10	7	8	23
Venus Bay-Waratah Bay (South Gippsland)	1	0	0	2	0	7	8	6	5	15
Lakes area, EG	2	0	0	0	-	-	-	-	-	-
Croajingalong (Marlo-Mallacoota)	4	7	0	1	0	-	-	-	-	0
Total fledglings	43	36	36	80	45	34	53	61	67	137
# fledglings per pair monitored	0.41	0.36	0.38	0.67	0.37	0.25	0.36	0.42	0.43	0.79

South Australia

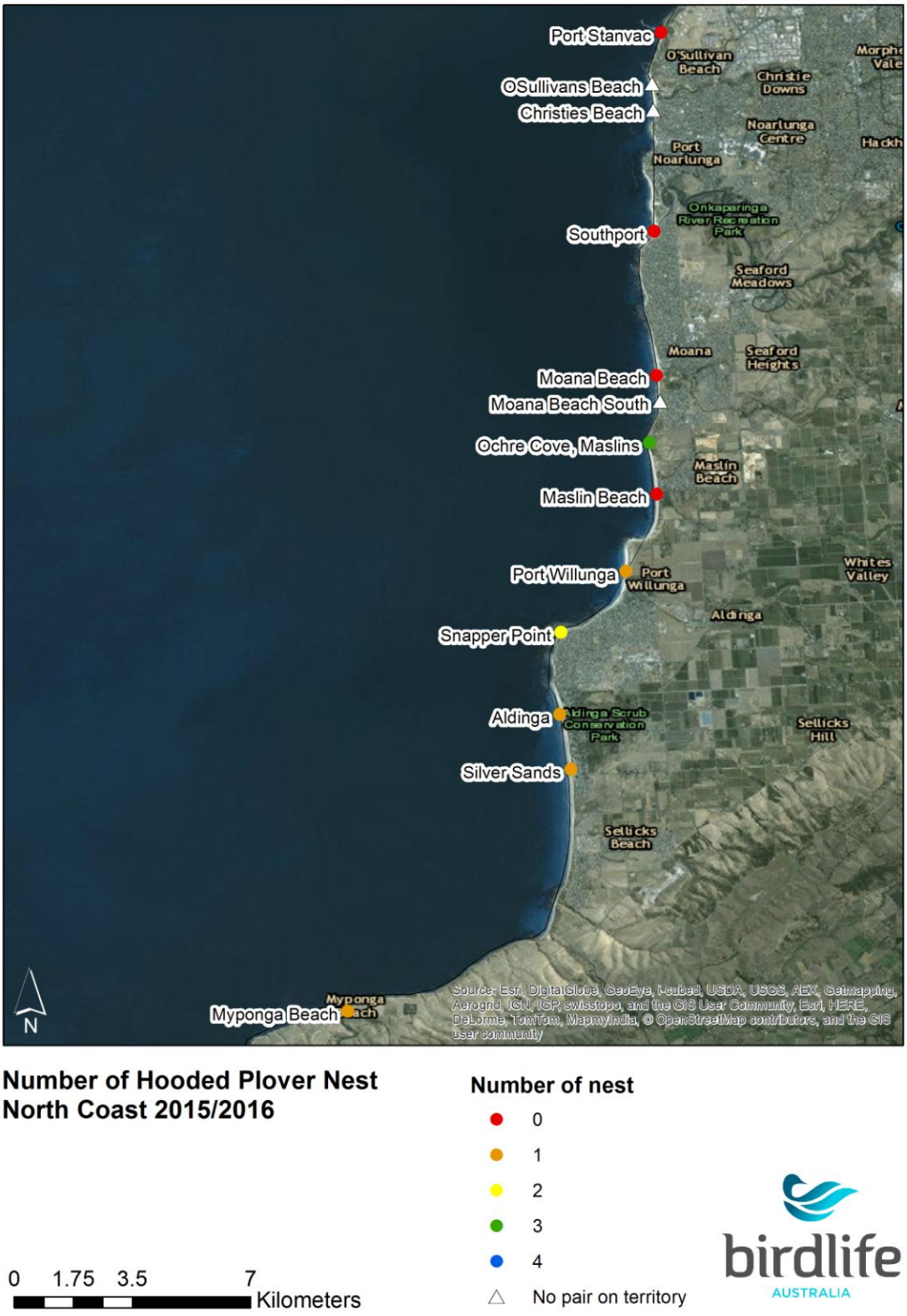
As a part of BirdLife Australia's Beach-nesting Birds Project, monitoring of breeding Hooded Plover pairs via the MyBeachBird portal occurred on the Fleurieu Peninsula, Yorke Peninsula, Eyre Peninsula, Ceduna, Kangaroo Island and South Eastern South Australia.

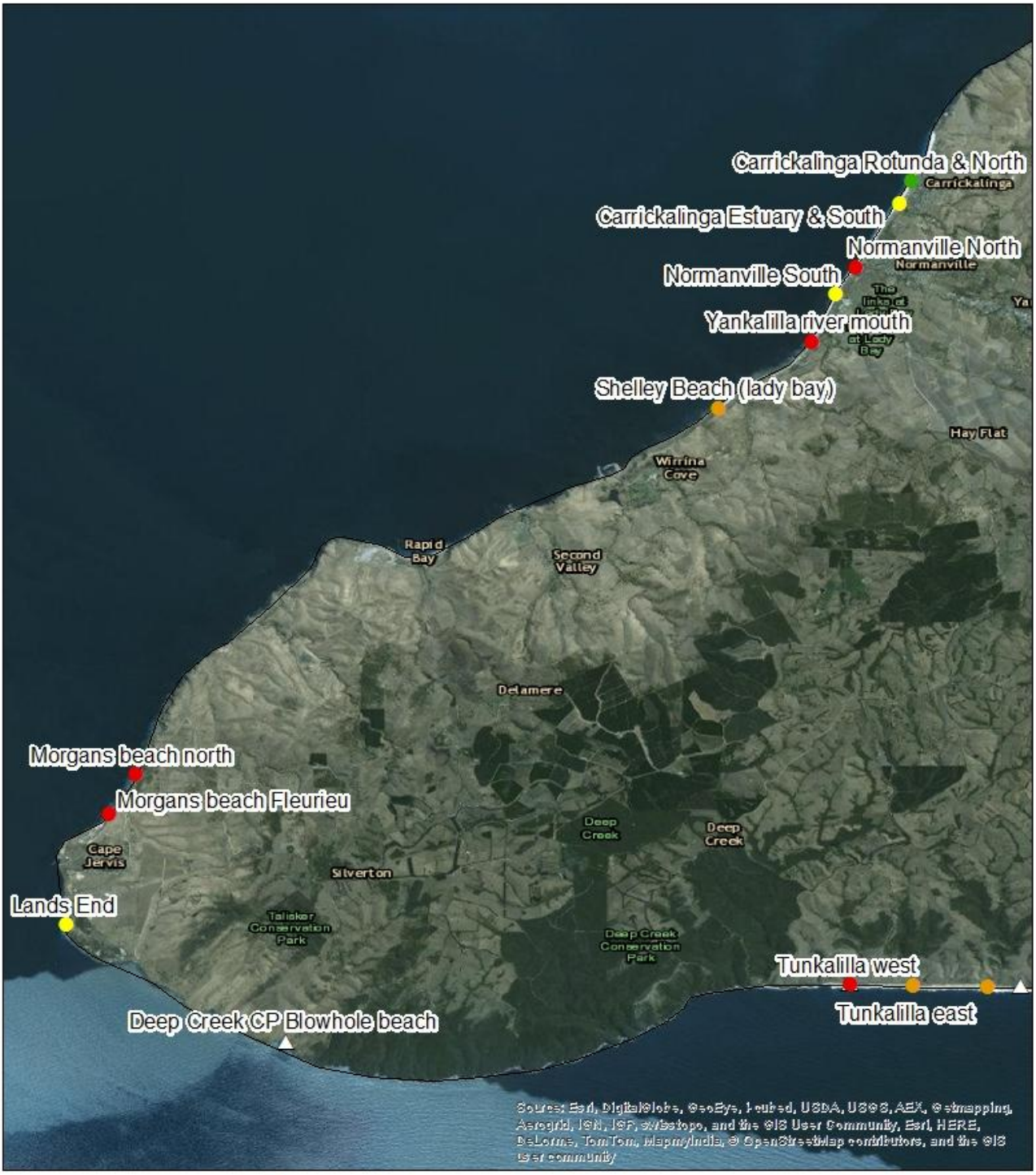
On the Fleurieu Peninsula during the 2015/16 season, a total of 1,941 data records were entered into the online data portal; this is a 68% increase on last year's total of 1,157 entries for this region. This far exceeds data entries for elsewhere in South Australia and represents 86% of all South Australian data portal entries, highlighting the value in having an employed coordinator through the Adelaide and Mount Lofty Ranges NRM Board. Overall, volunteers from the Fleurieu accounted for 24% of the data reports received from across Victoria, Tasmania, West Australia and South Australia, which is to be applauded.

Of the 1,941 data records on the Fleurieu Peninsula during the 2015/16 season 1860 (95.83% of records) contained visit duration; from this, volunteer investment in monitoring is calculated at 1,157 hours, 510 hours more than the 2014/15 breeding season. This is an underestimate as many data entries did not record duration of site visits, and these calculations do not include travel times to and from sites, time invested in data entry post-visit and assisting with community engagement activities etc. This notable 74% increase from last year's total is likely due to an increase in individual monitoring effort and an increase in volunteer numbers . Seven volunteers recorded over 100 monitoring visits and were responsible for 1,223 (63%) of the data portal entries, with one particularly dedicated volunteer totalling an astonishing 284 visits.

Data collected this season was for a total of 45 sites. Figure 4 provides an overview of sites monitored, the presence of birds and nesting activity at sites. Pairs were recorded at only 22 (49%) of those sites. Sixteen percent of sites (n=7) had no sightings of Hooded Plovers during the breeding season. The remaining 17 sites (38%) had sightings of individual adult Hooded Plovers, juveniles or flocks, but no evidence of breeding activity.

Figure 4: Sites that were monitored during the 2015/16 breeding season on the Fleurieu Peninsula and the number of nesting attempts per site.





Number of Hooded Plover Nest South West Coast 2015/2016

Number of nest

- 0
- 1
- 2
- 3
- 4
- △ No pair on territory

0 2 4 8 Kilometers

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Number of Hooded Plover Nest
Central South Coast 2015/2016

Number of nest

- 0
- 1
- 2
- 3
- 4
- △ No pair on territory

0 1.25 2.5 5 Kilometers

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Number of Hooded Plover Nest
East South Coast 2015/2016

Number of nest

- 0
- 1
- 2
- 3
- 4
- △ No pair on territory

0 1 2 4 Kilometers

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Hooded Plovers were not observed during the 2015/16 season at Christies Beach, Deep Creek CP Blowhole Beach, Goolwa, Moana Beach South, Tunkalila Base/mid-west gully, Tunkalilla 1st alcove far East and Tunkalilla Tunk head alcove. Christies Beach, Deep Creek CP Blowhole Beach, Goolwa, Tunkalila Base/mid-west gully, Tunkalilla 1st alcove far East and Tunkalilla Tunk head alcove did not have any sightings of Hooded Plovers in the 2014/15 breeding season either.

The sites where Hooded Plovers were observed but where no observations of nesting attempts were: Coolawang, Hindmarsh River mouth, Maslins Beach, Normanville North, Port Stanvac, Sheepies Beach, Southport, Tunkalilla West, Waitpinga Beach (West) and Waitpinga estuary. At some sites this may partly be because there was incomplete monitoring for the breeding season (see Table 4), but at other sites, it is likely that these are unsuitable for nesting and only used as foraging sites for non-breeders or as dispersal routes to suitable sites.

A breakdown of the number of visits to each site, the presence or absence of Hooded Plovers and the volunteers who monitored sites can be found in Table 4. Overall, 30 sites were monitored across at least 5 months of the breeding season. Of the 22 sites with breeding pairs of Hooded Plovers on territory, there was on average 80% monitoring coverage during the breeding months (minimum of one monthly visit per site). It is evident that Tunkalilla and Ballaparudda, have not had the same level of visitation as last season, with reduced visitation for some of these sites going from 19 visits in the 2014-15 season, to 5 in the 2015-16 season. Visitation at these sites was lower than previous seasons, due to access and the remoteness of the site.

Ochre Cove Fledgling. Photo: Sue and Ashley Read

Table 4. Number of portal entries and coverage across the breeding season at sites on the Fleurieu Peninsula during the 2015/16 breeding season. Portal entries (days) are the number of independent days there were portal entries, at some sites volunteers entre more than one entry per day. Grey highlighted cells represent sites where no birds were sighted during the breeding season. Apricot highlighted cells represent sites where no breeding occurred, but instead there were sightings of single adults, juveniles or flocks. Blue highlighted cells represent sites where a pair was on territory regularly but no nests were detected. Visits where adult birds were present are given as a percentage of total visits. Coverage refers to the proportion of the breeding season monitored (out of the peak 8 months where breeding usually occurs, August-March. * Due there being three territories at Tunkalilla this season, the territories have been renamed throughout this report. Territories Tunkalilla far West and Western estuary, are referred to as *Tunkalilla West*. Tunkalilla creek/3rd house East, Heysen East and Shed Caravan are reported as *Tunkalilla East*, and Tunkalilla mid-west estuary and first house East are referred to as *Tunkalilla midway.* Additionally, because there were two pairs spread across four sites at Carrickalinga territories Carrickalinga estuary and Carrickalinga South are reported as *Carrickalinga estuary/South* while Carrickalinga North and Carrickalinga rotunda are reported as *Carrickalinga North/rotunda*.

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
Aldinga	Aug - Oct, Jan - Apr	75%	41	73% (30)	Dudley Corbett, Neville Hudson	Faye Lush & Joyce West, Sue & Ashley Read, Emma Stephens, Fred & Heather Carrangis
Ballaparudda	Nov - Feb	50%	6	83% (5)	Elizabeth Steele-Collins	David & Sue Thorn
Bashams Beach	Aug - Mar	100%	81	74% (60)	Debbie Prestwood, Mary Akkerman, Richard Edwards, Win Syson	David & Sue Thorn, Rob Brinsley
Callawonga	Nov - Jan	37%	4	50% (2)	Elizabeth Steele-Collins, David & Sue Thorn	
Carrickalinga estuary/South	Sep - Feb	75%	40	88% (35)	Anthea and Rick Williams, David & Sue Thorn, Sondra Bywater, Wendy White	Emma Stephens, Jacqui Salkeld, Mike Heard

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
Carrickalinga North/rotunda	Sep - Mar	88%	82	83% (68)	Anthea and Rick Williams, David & Sue Thorn, Emma Stephens, Jacqui Salkeld, Wendy White	Joy Whellum, Richard Edwards, Mike Heard, Deanna Gulley, Emma Stephens
Christies Beach	Sep - Oct, Mar	38%	3	0% (0)	Angela Parker, John Cobb	
Coolawang	Aug - Sep, Nov - Mar	88%	14	64% (9)	Rob Brinsley	David & Sue Thorn, Dean Cutten, Emma Stephens
Deep Creek CP Blowhole beach	Oct	13%	1	0% (0)	Elizabeth Steele-Collins	David & Sue Thorn
Goolwa	Oct - Nov, Jan	38%	3	0%(0)	Debbie Prestwood, Mary Akkerman, Rob Brinsley	Keith Jones
Hindmarsh River mouth	Aug - Mar	100%	39	49% (19)	David & Sue Thorn, Richard Edwards	Debbie Prestwood, Emma Stephens, Andrew Jeffery
Inman River Outlet	Sep - Mar	88%	11	36% (4)	Elizabeth Steele-Collins, Richard Edwards, Ross Brittain and Janette Diment	David & Sue Thorn, Emma Stephens
Lands End	Oct - Mar	75%	36	97% (35)	David & Sue Thorn, Michael Rumsewicz, Rhonda Smith, Wendy White	Elizabeth Steele-Collins, Emma Stephens, Grainne Maguire, Jodie Schmid, Joy Whellum
Maslins Beach	Aug - Nov, Jan - Mar	88%	17	59% (10)	Jill Hadden, Meredith Harvey, Sue & Ashley Read	Karin Riederer
Middleton	Oct - Feb	63%	32	69% (22)	David & Sue Thorn, Debbie Prestwood, Richard Edwards, Win	Keith Jones, Mary Akkerman, Rob Brinsley

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
					Syson	
Moana Beach	Aug - Jan	75%	25	12% (3)	Angela Parker	Neville Hudson, Peter Allen, Emma Stephens
Moana Beach South	Nov - Feb	50%	10	0%(0)	Angela Parker	Emma Stephens
Morgans Beach Fleurieu	Sep - Jan	63%	15	13%(2)	Peta & Pierre Kruse	David & Sue Thorn, Wendy White
Morgans Beach North - private access only	Sep	13%	1	100% (1)	Jodie Schmid	
Myponga Beach	Aug - Feb	88%	27	78% (21)	Cecilie Siggs, Michele & Gary Sawyer	Linda & Jim Stacey, Alysse Page, David & Sue Thorn, Emma Stephens, Grainne Maguire, Jodie Schmid, Neville Hudson, Wendy White
Normanville North	Sep - Mar	88%	38	71% (27)	David & Sue Thorn, Joy Whellum, Sondra Bywater, Wendy White	Anthea & Rick Williams, Emma Stephens
Normanville South	Sep - Mar	88%	103	98% (101)	Caroline Weatherstone, Joy Whellum, Wendy White	Anthea & Rick Williams, Emma Stephens, John Cobb, Mike Heard, Sondra Bywater
Ochre Cove, Maslins Beach	Aug - Mar	100%	102	96% (97)	Jill Hadden, Karin Riederer, Meredith & Jim	Angela Parker, Crystal Burgess

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
					Harvey, Sue and Ashley Read	
Olivers Reef	Sep - Mar	88%	103	88% (91)	David & Sue Thorn, Debbie Prestwood, Richard Edwards	Elizabeth Steele-Collins
O'Sullivans Beach	Sep - Oct, Mar	38%	3	0% (0)	Angela Parker, John Cobb	
Parsons Beach	Aug - Mar	100%	29	66% (19)	Dean Cutten, Rob Brinsley	
Port Stanvac	Oct, Dec - Jan	38%	3	100% (3)	Emma Stephens, Peter Allen	
Port Willunga	Sep - Mar	88%	45	82% (37)	Dylan Braund, Sue and Ashley Read	Faye Lush & Joyce West, Jill Hadden, Neville Hudson
Sheepies Beach	Aug - Mar	100%	22	36% (8)	Dean Cutten, Rob Brinsley	David & Sue Thorn, Emma Stephens
Shelley Beach (Lady Bay)	Sep - Feb	75%	38	63% (24)	David & Sue Thorn, Peta & Pierre Kruse	Emma Stephens, Richard Edwards
Silver Sands	Sep - Mar	88%	85	76% (65)	Dudley Corbett, Neville Hudson	Alysse Page, Emma Stephens, Sue & Ashley Read, Fred & Heather Carrangis, Faye Lush & Joyce West
Snapper Point	Aug - Mar	100%	123	89% (110)	Angela Parker, Dudley Corbett, Julie Burgher, Neville Hudson, Sue & Ashley Read	Emma Stephens

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
Southport	Sep - Mar	88%	27	37% (10)	Angela Parker, John Cobb, Neville Hudson	Aleisa Lamanna, Peter Allen, Sue & Ashley Read
Tunkalila Base/mid-west gully	Sep, Dec - Jan	38%	3	0% (0)	David & Sue Thorn, Rob Brinsley	
Tunkalilla 1st alcove far East	Sep, Dec	25%	2	0% (0)	Rob Brinsley	
Tunkalilla East*	Sep, Dec - Jan	38%	4	100% (4)	Rob Brinsley	Elizabeth Steele-Collins, Emma Stephens, Caroline Taylor & Corey Jackson
Tunkalilla West*	Sep, Dec - Jan	38%	5	80% (4)	David & Sue Thorn, Rob Brinsley	
Tunkalilla midway*	Sep, Dec - Jan	38%	5	80% (4)	Rob Brinsley	David & Sue Thorn, Elizabeth Steele-Collins, Emma Stephens, Caroline Taylor & Corey Jackson
Tunkalilla Tunk Head alcove	Sep	13%	1	0% (0)	Rob Brinsley	
Waitpinga Beach (East)	Aug - Mar	100%	33	100% (33)	David & Sue Thorn, Rob Brinsley	Keith Jones, Emma Stephens
Waitpinga Beach (West)	Aug - Mar	100%	24	38% (9)	David & Sue Thorn, Rob Brinsley	Dean Cutten, Matthew Angrave, Rhonda Smith
Waitpinga estuary	Aug - Mar	100%	23	35% (8)	David & Sue Thorn, Rob Brinsley	Elizabeth Steele-Collins
Watsons Gap	Aug - Mar	100%	116	91% (106)	David & Sue Thorn, Debbie Prestwood, Elizabeth Steele-Collins, Richard Edwards, Rob	Mary Akkerman

Site/Territory	Visitation period (breeding season)	Coverage during breeding season	Portal entries (days)	Visits HP adults present	Main monitor/s	Additional observers
					Brinsley, Win Syson	
Yankalilla River mouth	Sep - Jan	63%	8	13% (1)	David & Sue Thorn, Richard Edwards	Emma Stephens
Yilki	Aug - Mar	100%	165	99% (163)	David & Sue Thorn, Debbie Prestwood, Elizabeth Steele-Collins, Jill Hadden, Lance Grey, Mary Akkerman, Richard Edwards, Rob Brinsley, Ross Brittain and Janette Diment	Emma Stephens

Nesting success

In the 2015/16 breeding season there were 42 Hooded Plover nesting attempts by 21 breeding pairs on the Fleurieu Peninsula. This was the second highest number of nests recorded in seven seasons of intensive monitoring, with the 2014/15 breeding season having the highest number of recorded nests (46). *LA and UB; a pair that have historically nested at Tunkililla, were never confirmed to have had a breeding attempt during the 2015/16 season (although it was likely that they did). Because of this; for the purpose of this report they have been included in analysis as a breeding pair; but, without any confirmed nests.

Although the total numbers of nests remained similar to 2014/15, the percentage of nests hatching has increased dramatically since last season. This is the highest percent of nests hatching in all seven years of monitoring and no doubt contributed to an almost doubling in the number of chicks observed (63 chicks). The percentage of chicks fledging successfully (30.2%) was lowest of the seven successive breeding seasons. However, the increase in chick numbers allowed for the production of 19 fledglings, by far the most of any breeding season. The number of fledglings per breeding pair almost doubled when compared to the last seven breeding seasons (0.90 fledglings per pair). More than meeting the benchmark (0.47 fledglings per pair) for fledgling production that we set for evaluating success, and for maintaining population numbers over time (BirdLife unpubl.).

Of the chicks that perished and never made it to fledge the average age to which they survived was 9.45 ± 2.63 SE days. Figure 5 illustrates how the probability of chick survival changes over time, unsurprisingly the steepest decline in survival is between zero and 10 days of age; in fact, 75% of all chick mortality occurs before chicks are 11.5 days old.

Figure 5. Kaplan-Meier survival curve (solid line) and standard errors (dashed lines) of survival probability for chicks on the Fleurieu Peninsula during the 2015/16 breeding season.

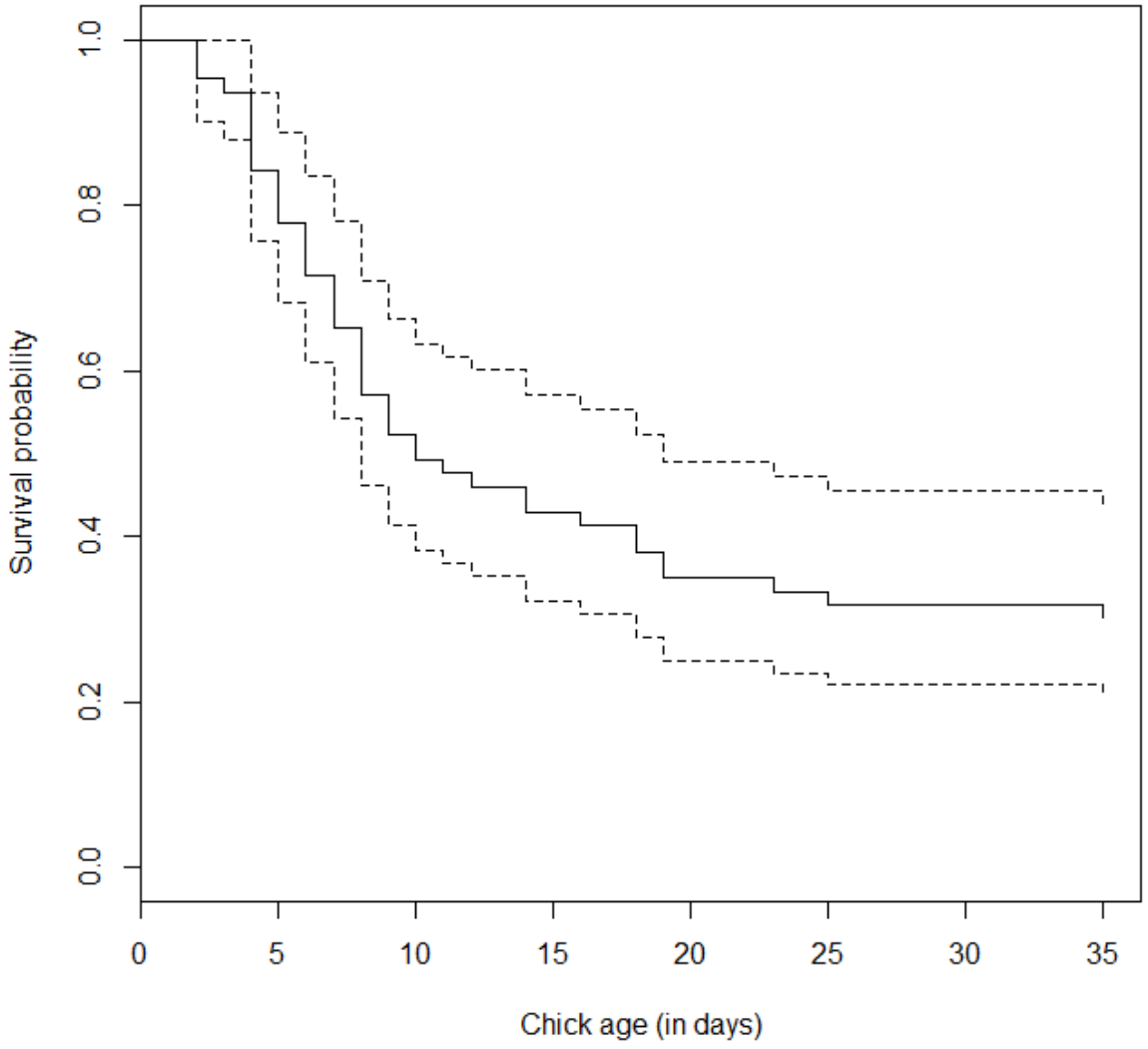


Table 5. Summary of nests, hatching or failing at egg stage, total number of eggs and chicks observed, and total chicks that fledged on the Fleurieu Peninsula over seven breeding seasons.

Season	# nests	# nests hatch	# nests fail egg stage	# eggs	# chicks obsv. (% of eggs)	# fledglings (% of chicks)	Fldlg/ Pair
2009/2010 12 sites 12 breeding pairs	18	9 (50.0%)	9	49	19 (38.8%)	7 (36.8%)	0.58
2010/2011 23 sites 19 breeding pairs	36	14 (38.9%)	22	83	26 (31.3%)	9 (34.6%)	0.47
2011/2012 26 sites 14 breeding pairs	24	10 (41.7%)	14	60	22 (36.7%)	8 (36.4%)	0.57
2012/2013 38 sites 20 breeding pairs	34	11 (32.4%)	23	76	23 (30.3%)	9 (39.1%)	0.45
2013/2014 35 sites 18 breeding pairs	35	12 (34.3%)	23	84	23 (27.4%)	9 (39.1%)	0.50
2014/2015 44 sites 20 breeding pairs	46	17 (37.0%)	29	107	32 (29.9%)	10 (31.3%)	0.50
2015/2016 45 sites 21 breeding pairs	42	26 (61.9%)	16	112	63 (56.3%)	19 (30.2%)	0.90

Figure 6 gives a geographic overview of successes and failures and Table 6 provides of nesting attempts for each monitored pair.

Figure 6: Nesting success and failure on the Fleurieu Peninsula during the 2015/16 season.

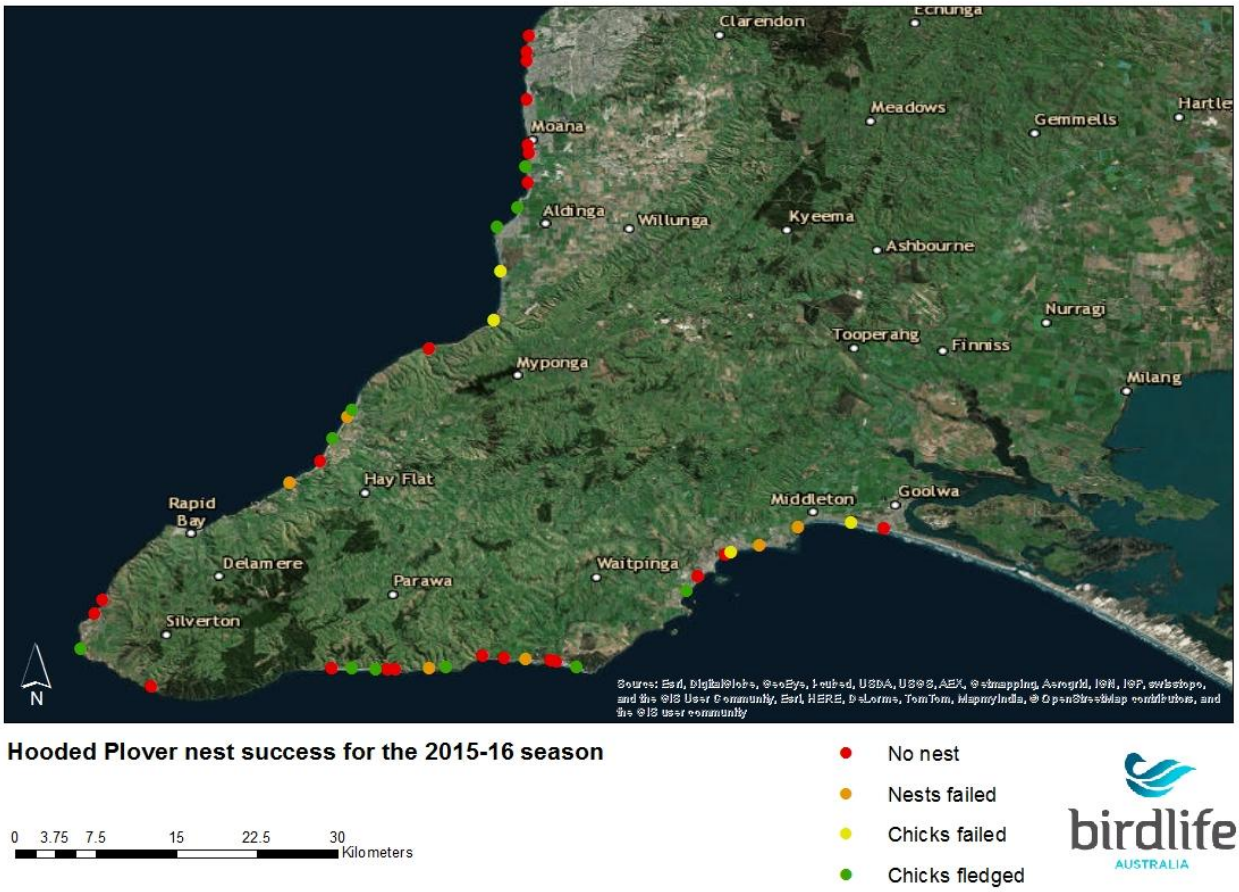


Table 6. Summary of nests, number of nests managed, hatching or failing at egg stage, total number of eggs and chicks observed and total chicks that fledged from that site in the 2015/16 breeding season. 'At access' refers to sites which had temporary signs erected at access points as the only type of breeding site protection. 'On beach' refers to signs and fencing erected around the breeding site.

Site	# Nests	On beach	At access	# nests fail egg stage	# nests hatch	# eggs	# chick obsv.	# nests fldgd	# fldgd
Aldinga	1	1	0	0	1	3	2	0	0
Ballaparudda	1	1	0	0	1	3	2	1	2
Bashams Beach	3	3	0	3	0	9	0	0	0
Callawonga	1	1	0	1	0	3	0	0	0
Carrickalinga estuary/South	2	1	0	0	0	4	0	0	0
Carrickalinga North/rotunda	3	2	3	2	1	7	2	1	2
Christies Beach	0	0	0	0	0	0	0	0	0
Coolawang	0	0	0	0	0	0	0	0	0
Deep Creek CP Blowhole Beach	0	0	0	0	0	0	0	0	0
Goolwa	0	0	0	0	0	0	0	0	0
Hindmarsh River mouth	0	0	0	0	0	0	0	0	0
Inman River Outlet	0	0	0	0	0	0	0	0	0
Lands End	2	0	0	0	2	5	5	2	3
Maslins Beach	0	0	0	0	0	0	0	0	0
Middleton Beach	1	0	1	0	1	3	3	0	0
Moana Beach	0	0	0	0	0	0	0	0	0
Moana Beach South	0	0	0	0	0	0	0	0	0
Morgans Beach Fleurieu	0	0	0	0	0	0	0	0	0
Morgans Beach North - private access only	0	0	0	0	0	0	0	0	0
Myponga Beach	1	1	0	0	1	3	2	1	1
Normanville North	0	0	0	0	0	0	0	0	0

Site	# Nests	On beach	At access	# nests fail egg stage	# nests hatch	# eggs	# chick obsv.	# nests fldgd	# fldgd
Normanville South	2	2	0	0	2	6	6	2	3
Ochre Cove, Maslins	3	3	0	0	3	9	9	1	1
Olivers Reef	3	2	3	2	1	8	3	0	0
OSullivans Beach	0	0	0	0	0	0	0	0	0
Parsons Beach	2	0	2	2	0	6	0	0	0
Port Stanvac	0	0	0	0	0	0	0	0	0
Port Willunga	1	1	0	0	1	2	2	1	1
Sheepies Beach	0	0	0	0	0	0	0	0	0
Shelley Beach (Lady Bay)	1	1	0	1	0	2	0	0	0
Silver Sands	1	1	0	0	1	2	2	0	0
Snapper Point	2	2	0	0	2	5	4	1	1
Southport	0	0	0	0	0	0	0	0	0
Tunkalila Base/mid-west gully	0	0	0	0	0	0	0	0	0
Tunkalilla 1st alcove far East	0	0	0	0	0	0	0	0	0
Tunkalilla East	1	0	0	0	1	3	1	1	1
Tunkalilla West	0	0	0	0	0	0	0	0	0
Tunkalilla midway	1	0	0	0	1	2	2	1	1
Tunkalilla Tunk Head alcove	0	0	0	0	0	0	0	0	0
Waitpinga Beach (East)	4	1	2	3	1	10	2	1	1
Waitpinga Beach (West)	0	0	0	0	0	0	0	0	0
Waitpinga estuary	0	0	0	0	0	0	0	0	0
Watsons Gap	3	3	0	0	3	8	8	0	0
Yankalilla River mouth	0	0	0	0	0	0	0	0	0
Yilki	3	3	0	0	3	9	8	1	2
Total	**42**	**29**	**7**	**16**	**26**	**112**	**63**	**14**	**19**

Table 6 summarises the nesting activity of pairs according to entries in the MyBeachBird Data Portal and Table 7 expands this into more detail about each nesting attempt. The earliest recorded nest was on the 18th of August, at Ochre Cove. Egg laying started to slow by the end of January/start of February, with the last nest of the season still being incubated on the 20th of February at Watsons Gap. Chick rearing continued through into mid March with the last chick recorded fledging at Waitpinga.

Thirty percent of pairs (6) had three or more nesting attempts during the season; 35% (7) had two nesting attempts while another 35% (7) had only one nesting attempt. The pair at Waitpinga Beach East (KP and unbanded) had an impressive four attempts throughout the season, finally managing to fledge a chick on the last attempt. SA and UE too managed to have four nesting attempts; three of these were at Bashams Beach, and the fourth at Middleton. AU and BX also managed 4 nesting attempts, the first, catching volunteers off guard with the discovery of chicks at Olivers Reef and the remaining three attempts occurring at Watsons Gap. Unfortunately none of AU and BX's or SA and UE's breeding attempts managed to produce fledglings.

Of the 42 nests monitored, 38% (16) failed during the egg stage, a significantly lower percentage than all six previous seasons. The main causes of egg failure that were suspected and reported were: tide (4 nests; Callawonga, Waitpinga Beach East, Olivers Reef and Carrickalinga estuary), gulls (3 nests; all three at Bashams Beach), fox (2 nests, Carrickalinga rotunda & North and Olivers Reef), raven/magpie (2 nests; both at Parsons Beach) and abandoned (1 nest at Shelly Beach). For the remaining four nests, there were no obvious clues to the cause of nest failure.

Seventeen of the 19 pairs hatched chicks, a substantial increase on previous seasons (e.g. 8 pairs successfully hatched chicks in 2014/15). Although the hatching – fledging remained similar to previous seasons (30.2%), the dramatic increase in chick hatching allowed 12 pairs (of 19) to produce a combined total of 19 fledglings. This is the highest number of fledglings produced to date, and double the number of fledglings of previous seasons.

The causes of chick failure were predominately unknown, however, there were suspected failures due to: kestrel/kite (2 failure events; both at Watsons Gap) and tide (1 failure event at Yilki).

Just like the 2014/15 breeding season the earliest confirmed fledgling of the 2015/16 season came from the earliest nest reported on the Fleurieu Peninsula (found on the 18th of August and fledging on 21st of October) at Ochre Cove, Maslins Beach (NA and unbanded). Unfortunately this was the only fledgling NA and partner were able to produce as their following two attempts failed in the chick stage. Both Normanville South and Lands End were of particular note as they fledged three chicks each, spread over their combined four breeding attempts; also of note: Ballaparudda, Carrickalinga North/rotunda and Yilki all fledged two chicks each in early February. (see Table 7).

Overall, an egg had a 17% chance of fledging a chick successfully (19 fledglings out of a total of 112 eggs). This was an increase 7.7% from the previous season (in 2014/15 there was a 9.3% chance of an egg becoming a fledgling), and a increase of 6.3% from the season before (in 2013/14 there was 10.7% chance). Additionally; this season a nest had a 33.3% chance of fledging at least one chick (14 fledged nests out of 42 total nests; 18.1% higher than the 2014/15 season).

HV, DP and chicks; Photo: Sue and Ash Read

Table 7. Detailed summary of nest progress for each site according to data entered in the MyBeachBird data portal and sent to BirdLife Australia for the 2015/16 breeding season.

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Aldinga	9/09/2015	Suspect nest	1				HV, DP
Aldinga	10/09/2015	Nest (with eggs)	1	3			HV, DP
Aldinga	6/10/2015	Suspect chicks	1				HV, DP
Aldinga	7/10/2015	Chicks sighted	1		2		HV, DP
Aldinga	10/10/2015	Chick sighted (one chick lost; unknown)	1		1		HV, DP
Aldinga	11/10/2015	Suspect chick failed	1		0		HV, DP
Ballaparudda	13/12/2015	Nest (with eggs)	1	3			unb, unb
Ballaparudda	5/01/2016	Chicks sighted	1		2		unb, unb
Ballaparudda	9/02/2016	X2 Chicks fledged	1		2		unb, unb
Bashams Beach	3/09/2015	Nest (with eggs)	1	1			SA, UE
Bashams Beach	4/09/2015	Nest (with eggs; second egg)	1	2			SA, UE
Bashams Beach	6/09/2015	Nest (with eggs; third egg)	1	3			SA, UE
Bashams Beach	13/09/2015	Failed since last visit (gulls)	1	0			SA, UE
Bashams Beach	15/09/2015	Scrape (no eggs)					SA, UE
Bashams Beach	22/09/2015	Nest (with eggs)	2	1			SA, UE
Bashams Beach	25/09/2015	Nest (with eggs; second egg)	2	2			SA, UE
Bashams Beach	27/09/2015	Nest (with eggs; third egg)	2	3			SA, UE
Bashams Beach	6/10/2015	Failed since last visit (gulls)	2	0			SA, UE
Bashams Beach	21/10/2015	Nest (with eggs)	3	3			SA, UE
Bashams Beach	31/10/2015	Failed since last visit (gulls)	3				SA, UE
Bashams Beach	16/01/2016	Suspect nest					SA, UE
Callawonga	11/11/2015	Nest (with eggs)	1	3			unb, unb
Callawonga	13/12/2015	Failed since last visit (tide)	1	0			unb, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Carrickalinga estuary & South	15/11/2015	Scrape (no eggs)					CK, SS
Carrickalinga estuary & South	3/12/2015	Nest (with eggs)	1	2			CK, SS
Carrickalinga estuary & South	22/12/2015	Failed since last visit (unknown)	1	0			CK, SS
Carrickalinga estuary & South	12/01/2016	Nest (with eggs)	2	1			CK, SS
Carrickalinga estuary & South	19/01/2016	Nest (with eggs; second egg)	2	2			CK, SS
Carrickalinga estuary & South	28/01/2016	Nest (with eggs)	2	1			CK, SS
Carrickalinga estuary & South	31/01/2016	Failed since last visit (tide)	2	0			CK, SS
Carrickalinga rotunda & North	10/09/2015	Nest (with eggs)	1	3			LP, unb
Carrickalinga rotunda & North	14/09/2015	Failed since last visit (unknown)	1	0			LP, unb
Carrickalinga rotunda & North	25/10/2015	Scrape (no eggs)					LP, unb
Carrickalinga rotunda & North	5/11/2015	Nest (with eggs)	2	2			LP, unb
Carrickalinga rotunda & North	6/11/2015	Failed since last visit (fox)	2	0			LP, unb
Carrickalinga rotunda & North	22/11/2015	Scrape (no eggs)					LP, unb
Carrickalinga rotunda & North	15/12/2015	Nest (with eggs)	3	2			LP, unb
Carrickalinga rotunda & North	4/01/2016	Chicks sighted	3		2		LP, unb
Carrickalinga rotunda & North	8/01/2016	Chicks sighted	3		2		LP, unb
Carrickalinga rotunda & North	8/02/2016	X2 Chicks fledged	3		2		LP, unb
Christies Beach	7/09/2015	No birds sighted (site not used for nesting)					
Coolawang	31/08/2015	Birds sighted (site not used for nesting)					
Deep Creek CP Blowhole beach	1/10/2015	No birds sighted (site not used for nesting)					
Goolwa Beach	30/10/2015	No birds sighted (site not used for nesting)					
Hindmarsh River mouth	5/10/2015	Scrape (no eggs)					unknown
Inman River Outlet	16/09/2015	Birds sighted (site not used for nesting)					
Lands End	29/09/2015	Chicks sighted	1		2		JW, unb
Lands End	6/11/2015	Chick sighted (one chick lost; unknown)	1		1		JW, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Lands End	11/11/2015	Chick fledged (age unknown; strong flight)	1		1		JW, unb
Lands End	13/12/2015	Nest (with eggs)	2	3			JW, unb
Lands End	10/01/2016	Chicks sighted	2		2		JW, unb
Lands End	17/01/2016	Chicks sighted (third chick sighted)	2		3		JW, unb
Lands End	19/01/2016	Chicks sighted (one chick lost; unknown)	2		2		JW, unb
Lands End	14/02/2016	X2 Chicks fledged	2		2		JW, unb
Maslin Beach	23/08/2015	Birds sighted (site not used for nesting)					
Middleton Beach	17/12/2015	Chicks sighted	1		3		SA, UE
Middleton Beach	25/12/2015	Suspect chicks failed (unknown)	1		0		SA, UE
Moana Beach	7/09/2015	Birds sighted (site not used for nesting)					
Moana Beach South	5/11/2015	No birds sighted (site not used for nesting)					
Morgans Beach Fleurieu	19/09/2015	Birds sighted (site not used for nesting)					
Morgans Beach North - private access only	17/09/2015	Birds sighted (site not used for nesting)					
Myponga Beach	25/09/2015	Nest (with eggs)	1	3			EY, US
Myponga Beach	22/10/2015	Chicks sighted	1		2		EY, US
Myponga Beach	31/10/2015	Chick sighted (one chick lost; unknown)	1		1		EY, US
Myponga Beach	28/11/2015	X1 Chick fledged	1		1		EY, US
Normanville North	6/11/2015	Scrape (no eggs)					PD, unb
Normanville South	14/09/2015	Nest (with eggs)	1	3			unb, unb
Normanville South	3/10/2015	Chicks sighted	1		3		unb, unb
Normanville South	8/10/2015	Chick sighted (two chicks lost; unknown)	1		1		unb, unb
Normanville South	7/11/2015	X1 Chick fledged	1		1		unb, unb
Normanville South	28/11/2015	Nest (with eggs)	2	1			unb, unb
Normanville South	3/12/2015	Nest (with eggs; second and third egg)	2	3			unb, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Normanville South	29/12/2015	Chicks sighted	2		3		unb, unb
Normanville South	20/01/2016	Chick sighted (one chick lost; unknown)	2		2		unb, unb
Normanville South	2/02/2016	X2 Chicks fledged	2		2		unb, unb
Ochre Cove, Maslins	18/08/2015	Nest (with eggs)	1	3			NA, unb
Ochre Cove, Maslins	16/09/2015	Chicks sighted	1		3		NA, unb
Ochre Cove, Maslins	20/09/2015	Chicks sighted (one chick lost; unknown)	1		2		NA, unb
Ochre Cove, Maslins	1/10/2015	Chick sighted (one chick lost; unknown)	1		1		NA, unb
Ochre Cove, Maslins	21/10/2015	X1 Chick fledged	1		1		NA, unb
Ochre Cove, Maslins	1/11/2015	Nest (with eggs)	2	3			NA, unb
Ochre Cove, Maslins	30/11/2015	Chicks sighted	2		3		NA, unb
Ochre Cove, Maslins	15/12/2015	Chicks sighted (one chick lost; unknown)	2		2		NA, unb
Ochre Cove, Maslins	18/12/2015	Suspect chicks failed (unknown)	2		0		NA, unb
Ochre Cove, Maslins	5/01/2016	Nest (with eggs)	3	3			NA, unb
Ochre Cove, Maslins	30/01/2016	Chicks sighted	3		3		NA, unb
Ochre Cove, Maslins	1/02/2016	Chicks sighted (one chick lost; unknown)	3		2		NA, unb
Ochre Cove, Maslins	6/02/2016	Chick sighted (one chick lost; unknown)	3		1		NA, unb
Ochre Cove, Maslins	23/02/2016	Suspect chick failed	3		0		NA, unb
Olivers Reef	24/09/2015	Chicks sighted	1		3		AU, BX
Olivers Reef	30/09/2015	Suspect chicks failed (unknown)	1		0		AU, BX
Olivers Reef	27/10/2015	Scrape (no eggs)	2				AU, BX
Olivers Reef	11/11/2015	Nest (with eggs)	2	1			unb, unb
Olivers Reef	13/11/2015	Nest (with eggs; second egg)	2	2			unb, unb
Olivers Reef	16/11/2015	Nest (with eggs; third egg)	2	3			unb, unb
Olivers Reef	26/11/2015	Failed since last visit (tide)	2	0			unb, unb
Olivers Reef	29/11/2015	Scrape (no eggs)					unb, unb
Olivers Reef	9/12/2015	Nest (with eggs)	3	2			unb, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Olivers Reef	31/12/2015	Failed since last visit (fox)	3	0			unb, unb
OSullivans Beach	7/09/2015	No birds sighted (site not used for nesting)					
Parsons Beach	24/11/2015	Scrape (no eggs)					EV, unb
Parsons Beach	29/11/2015	Nest (with eggs)	1	1			EV, unb
Parsons Beach	1/12/2015	Nest (with eggs; second egg)	1	2			EV, unb
Parsons Beach	4/12/2015	Nest (with eggs; third egg)	1	3			EV, unb
Parsons Beach	15/12/2015	Failed since last visit (raven/magpie)	1	0			EV, unb
Parsons Beach	29/12/2015	Nest (with eggs)	2	3			EV, unb
Parsons Beach	5/01/2016	Failed since last visit (raven/magpie)	2				EV, unb
Port Stanvac	1/12/2015	Birds sighted					
Port Willunga	28/10/2015	Nest (with eggs)	1	2			DP, HV
Port Willunga	24/11/2015	Chicks sighted	1		2		DP, HV
Port Willunga	10/12/2015	Chick sighted (one chick lost; unknown)	1		1		DP, HV
Port Willunga	31/12/2015	X1 Chick fledged	1		1		DP, HV
Sheepies Beach	24/11/2015	Scrape (no eggs)					unb, unb
Shelley Beach (Lady Bay)	6/11/2015	Scrape (no eggs)	1				SB, unb
Shelley Beach (Lady Bay)	15/11/2015	Suspect nest	1				SB, unb
Shelley Beach (Lady Bay)	15/12/2015	Nest (with eggs)	1	2			SB, unb
Shelley Beach (Lady Bay)	8/02/2016	Failed since last visit (abandoned)	1	1			SB, unb
Silver Sands	28/10/2015	Scrape (no eggs)					SR, unb
Silver Sands	29/10/2015	Nest (with eggs)	1	1			SR, unb
Silver Sands	1/11/2015	Nest (with eggs; second egg)	1	2			SR, unb
Silver Sands	29/11/2015	Chicks sighted	1		2		SR, unb
Silver Sands	2/12/2015	Suspect chicks failed (unknown)	1		0		SR, unb
Snapper Point	16/09/2015	Suspect nest					unb, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Snapper Point	17/09/2015	Nest (with eggs)	1	3			unb, unb
Snapper Point	4/10/2015	Chicks sighted	1		2		unb, unb
Snapper Point	13/10/2015	Suspect chicks failed (unknown)	1		0		unb, unb
Snapper Point	25/10/2015	Nest (with eggs)	2	1			unb, unb
Snapper Point	29/10/2015	Nest (with eggs; second egg)	2	2			unb, unb
Snapper Point	23/11/2015	Chicks sighted	2		2		unb, unb
Snapper Point	26/11/2015	Chick sighted (one chick lost; unknown)	2		1		unb, unb
Snapper Point	28/12/2015	X1 Chick fledged	2		1		unb, unb
Southport	17/12/2015	Birds sighted (site not used for nesting)					
Tunkalila Base/mid-west gully	1/09/2015	No birds sighted (site not used for nesting)					
Tunkalilla 1st alcove far East	1/09/2015	No birds sighted (site not used for nesting)					
Tunkalilla East	3/12/2015	Nest (with eggs)	1	3			DK, unb
Tunkalilla East	21/12/2015	Chick sighted	1		1		DK, unb
Tunkalilla East	21/01/2016	X1 Chick fledged	1		1		DK, unb
Tunkalilla West	21/01/2016	Suspect chicks				3	LA, UB
Tunkalilla midway	3/12/2015	Chicks sighted	1		2		MT, unb
Tunkalilla midway	21/12/2015	X1 chick fledged	1		1		MT, unb
Tunkalilla Tunk Head alcove	1/09/2015	No birds sighted (site not used for nesting)					
Waitpinga Beach (East)	14/09/2015	Suspect nest (copulation observed)	1				KP, unb
Waitpinga Beach (East)	7/10/2015	Scrape (no eggs)					KP, unb
Waitpinga Beach (East)	9/11/2015	Nest (with eggs)	2	1			KP, unb
Waitpinga Beach (East)	13/11/2015	Nest (with eggs; second and third egg)	2	3			KP, unb
Waitpinga Beach (East)	24/11/2015	Failed since last visit (tide)	2	0			KP, unb
Waitpinga Beach (East)	9/12/2015	Nest (with eggs)	3	2			KP, unb
Waitpinga Beach (East)	15/12/2015	Failed since last visit (unknown)	3	0			KP, unb

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Waitpinga Beach (East)	5/01/2016	Scrape (no eggs)					KP, unb
Waitpinga Beach (East)	19/01/2016	Nest (with eggs)	4	2			KP, unb
Waitpinga Beach (East)	8/02/2016	Chicks sighted	4		2		KP, unb
Waitpinga Beach (East)	16/02/2016	Chick sighted (one chick lost; unknown)	4		1		KP, unb
Waitpinga Beach (East)	15/03/2016	X1 Chick fledged	4		1		KP, unb
Waitpinga Beach (West)	31/08/2015	Birds sighted (site not used for nesting)					
Waitpinga estuary	5/11/2015	Scrape (no eggs)					EV, unb
Watsons Gap	19/10/2015	Nest (with eggs)	1	3			AU, BX
Watsons Gap	11/11/2015	Chicks sighted	1		3		AU, BX
Watsons Gap	14/11/2015	Suspect chicks failed (unknown)	1		0		AU, BX
Watsons Gap	20/11/2015	Scrape (no eggs)					AU, BX
Watsons Gap	27/11/2015	Nest (with eggs)	2	1			AU, BX
Watsons Gap	28/11/2015	Nest (with eggs; second egg)	2	2			AU, BX
Watsons Gap	1/12/2015	Nest (with eggs; third egg)	2	3			AU, BX
Watsons Gap	28/12/2015	Chicks sighted	2		2		AU, BX
Watsons Gap	29/12/2015	Chicks sighted (third chick sighted)	2		3		AU, BX
Watsons Gap	2/01/2016	Chicks sighted (one chick lost)	2		2		AU, BX
Watsons Gap	3/01/2016	Suspect chicks failed (unknown)	2		0		AU, BX
Watsons Gap	20/01/2016	Nest (with eggs)	3	1			AU, BX
Watsons Gap	22/01/2016	Nest (with eggs; second egg)	3	2			AU, BX
Watsons Gap	20/02/2016	Chicks sighted	3		2		AU, BX
Watsons Gap	4/03/2016	Chick sighted (one chick lost; suspect kestrel/kite	3		1		AU, BX
Watsons Gap	4/03/2016	Suspect chick failed (suspect kestrel/kite)	3		0		AU, BX
Yankalilla River mouth	22/11/2015	Birds sighted (site not used for nesting)					unb, unb
Yilki	29/08/2015	Nest (with eggs)	1	2			KV, VH

Site/Territory	Date	Nest update	Attempt #	egg #	chick #	chick assumed #	band ID
Yilki	30/08/2015	Nest (with eggs; third egg)	1	3			KV, VH
Yilki	29/09/2015	Chicks sighted	1		2		KV, VH
Yilki	4/10/2015	Chicks sighted (one chick lost; unknown)	1		1		KV, VH
Yilki	7/10/2015	Suspect chick failed (unknown)	1		0		KV, VH
Yilki	20/10/2015	Suspect nest					KV, VH
Yilki	27/10/2015	Nest (with eggs)	2	3			KV, VH
Yilki	25/11/2015	Chicks sighted	2		3		KV, VH
Yilki	26/11/2015	Suspect chicks failed (tide)	2		0		KV, VH
Yilki	2/12/2015	Scrape (no eggs)					KV, VH
Yilki	7/12/2015	Nest (with eggs)	3	1			KV, VH
Yilki	8/12/2015	Nest (with eggs; second egg)	3	2			KV, VH
Yilki	16/12/2015	Nest (with eggs; third egg)	3	3			KV, VH
Yilki	9/01/2016	Chicks sighted	3		3		KV, VH
Yilki	26/01/2016	Chicks sighted (one chick lost; unknown)	3		2		KV, VH
Yilki	13/02/2016	X2 Chicks fledged	3		2		KV, VH

Flagging

In total, 455 Hooded Plovers have been banded and flagged as part of BirdLife Australia's research program in Victoria and South Australia since 2010. On the Fleurieu, there are now 52 banded/flagged birds: including 8 juveniles from the 2015/16 breeding season (see Table 8).

We rely on reporting of Hooded Plovers sightings once they have been flagged in order to build up a 'history' for each flagged individual and learn about their movements, breeding partner/s and longevity. Figures 6 and 7 reveal the identification of pairs at sites monitored across the Fleurieu Peninsula in the 2015/16 season. This season on the Fleurieu Peninsula there were 21 breeding pairs; seven pairs had both individuals flagged, another nine pairs had only one member of the pair flagged, while the remaining five pairs were completely unflagged.

Flagging has revealed some interesting changes in site occupation of which we would have been unaware without the individual identification of birds.

Last season (2014/15), there was no recorded nesting at Middleton Beach, Olivers Reef, Port Willunga, Silver Sands, Snapper Point or Watsons Gap; yet this season there was breeding at all of these sites. SA and UE were observed to have three nesting attempts at Bashams Beach throughout September and October. None of these three nests made it to hatching; however, after a short move to over to Middleton Beach their fourth and final nest managed to hatch, unfortunately these three chicks never made it to fledge. AU and BX were spotted with chicks at Olivers Reef, and not long after these sightings AU, BX and family disappeared and the site was occupied by a pair of unbanded birds. In October AU and BX were sighted with a new nest at Watsons Gap where they remained for the rest of the season. Neither the unbanded pair at Olivers Reef or AU and BX fledged chicks during the 2015/16 season.

Similar to the above; DP and HV started the breeding season at Aldinga. After a chick failure event in September they moved from Aldinga (where no breeding was observed for the rest of the season) to Port Willunga. This second attempt was successful and DP and HV fledged a chick in late December. The nearby territory of Silver Sands was occupied by SR and unbanded. They did not manage to fledge any chicks; however this is was likely SRs' first breeding season.

Snapper point was a surprise this season, as no nesting has been observed there throughout the previous six seasons of monitoring. An unbanded pair took up residence and managed to fledge a single chick in late December on their second breeding attempt.

EV and KP are another particularly interesting case of breeding birds that changed partners this year. EV and KP nested together during the 2014/15 season at Waitpinga Beach West (two unsuccessful attempts); however, during the 2015/16 season EV had moved to Parsons Beach with an unbanded bird (two unsuccessful nesting attempts). Meanwhile KP had moved down to Waitpinga Beach East and was paired with another unbanded bird and successfully fledged a single chick (flagged YB) in mid March.

Additionally, a number of exceptionally dedicated volunteers, reported several interesting movements across the Fleurieu Peninsula including: the return of 'MV' who was flagged as a juvenile at Normanville North/Carrickalinga Sands 28/11/15, now a sub-adult and was sighted on numerous occasions at Silver Sands. Two adults; 'YN' and 'PD' from Waitpinga, YN banded as a juvenile, PD as a chick in February 2014 both sighted often at Olivers Reef and Carrickalinga respectively. HV (from Pt Willunga) investigated Yilki around the 14th to 15th of May, and was then sighted back at Snapper Point the next morning and also 'RV' (banded at Carrickalinga Rotunda) spent a lot of time at Aldinga and Silver Sands, was seen at Carrickalinga South on the 5th of May, then returned back to Aldinga on the 7th of May.

Juvenile MV; Photo: Grainne Maguire

Table 8. A summary of leg flagged Hooded Plovers captured and banded on the Fleurieu Peninsula to March 2016. All birds were captured by qualified, experienced and licensed banders (Grainne Maguire, Terry Dennis and Emma Stephens). Partner at the time of banding is displayed.

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Maslin Beach	8-05-12	Adult	Female	metal	MX (orange)		Non-breeding	Partner unbanded
Myponga Beach	8-05-12	Adult	Female	metal	EY (orange)		Non-breeding	Partner unbanded
Carrickalinga North (N end)	22-01-13	Adult	Unk	metal	NA (orange)		not nesting	Suspect partner AR
Watsons Gap	18-01-13	Adult	Female	metal	AU (orange)		with recently fledged chick	Partner unbanded (on 20/1/13 banded as BX)
Parsons Beach (far SW end)	18-01-13	Adult	Female	metal	CL (orange)		Not nesting	Partner EV
Parsons Beach (far SW end)	18-01-13	Adult		metal		EV (orange)	Not nesting	Partner CL
Waitpinga Beach (E end)	18-01-13	Adult	Female	metal	KJ (orange)		Not nesting	Partner unbanded
Tunkalilla Beach 3rd house East	19-01-13	Juvenile	Male	metal	DK (orange)		1 of 3 chicks that fledged from Western end	Sibling of EM
Tunkalilla Beach 3rd house East	19-01-13	Juvenile	Male	metal	EM (orange)		1 of 3 chicks that fledged from Western end	Sibling of DK
Watsons Gap estuary	20-01-13	Adult		metal		BX (orange)	With recently fledged chick (7 days ago)	Partner AU
Carrickalinga estuary	21-01-13	Adult	Male	metal	CK (orange)		With 2 other adults, aggression, no nesting	Unknown, caught with LP
Carrickalinga estuary	21-01-13	Adult		metal		LP (orange)	With 2 other adults, aggression, no nesting	Unknown, caught with CK
Carrickalinga North (N end)	22-01-13	Adult	Unk	metal	NA (orange)		Not nesting	Suspect partner AR
Carrickalinga North (N end)	22-01-13	Adult	Male	metal		AR (orange)	not nesting	Suspect partner NA

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Snapper Point (Pt Willunga end)	22-01-13	Adult	Male	metal	HV (orange)		Port Willunga pair, not nesting, recent failure	Partner unbanded
Carrickalinga Pitmans leap access	27-09-13	Adult	Male	metal	SS (orange)		not nesting, with 1 other bird	Partner CK
Carrickalinga (toilet block)	27-09-13	Subadult	Male	metal	DJ (orange)		Alone	
Lady Bay Shelley Beach	27-09-13	Adult	Unk	metal	SB (orange)		not nesting	Partner LD
Lady Bay Shelley Beach	27-09-13	Adult	Unk	metal		LD (orange)	not nesting	Partner SB
Inman River outlet	13-11-13	Adult		metal	KV (orange)		mating, no scrapes found	Partner unbanded
Bashams Beach	13-11-13	Adult	Male	metal		SA (orange)	lone bird, no partner seen for months	
Tunkalilla far West	14-11-13	Adult	Female	metal	LA (orange)		new nest, recently laid, 3 eggs	Partner unbanded
Tunkalilla Western estuary	14-11-13	Adult		metal	KW (orange)		fresh scrapes	Partner unbanded
Tunkalilla mid-west estuary	14-11-13	Adult		metal		MT (orange)	new nest, 2 eggs, due to hatch late Nov/early Dec	Partner unbanded
Tunkalilla creek/3rd house East	14-11-13	Adult		metal	ST (orange)		lone bird, suspect nest	
Waitpinga Beach East	10-02-14	Chick		metal	PD (orange)		30 days old	Parents KJ and unbanded

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Waitpinga Beach East	10-02-14	Chick		metal	PR (orange)		30 days old	Parents KJ and unbanded
Callawonga Beach	10-02-14	Chick		metal	KP (orange)		25 days old	
Callawonga Beach	10-02-14	Chick		metal			25 days old, much lighter than sibling KP so no flag given	
Waitpinga Beach West	25-02-14	Juvenile	Male	metal	YN (orange)			
Waitpinga Beach West	25-02-14	Juvenile	Female	metal	TZ (orange)			
Waitpinga Beach West	26-02-14	Juvenile	Female	metal	UE (orange)			
Waitpinga Beach West	26-02-14	Juvenile	Male	metal	HX (orange)			
Tunkalilla Creek/3rd house East	28-04-14	Juvenile		metal	PR (orange)		RECAPTURE	Parents KJ and unbanded
Tunkalilla far West	28-04-14	Adult	Male	metal	UB (orange)			Partner 'LA'
Waitpinga Beach East	30-04-14	Adult	Female	metal	KJ (orange)		RECAPTURE	
Port Willunga North	29-08-14	Adult		metal		DP (orange)		With LP at time of banding
Ochre cove, Maslins Beach	16-10-14	Chick	Male	metal	SR (orange)			Parents TJ and NA
Ochre cove, Maslins Beach	16-10-14	Adult	Male	metal	TJ (orange)		Chicks	Partner NA
Tunkalilla Beach Western estuary	17-10-14	Adult	Female	metal		WE (orange)	Scrape no eggs	Partner KW
Tunkalilla Beach mid-west estuary	17-10-14	Adult	Female	metal	ME (orange)		On territory	Partner MT
Waitpinga East	21-01-15	Chick		metal	RR (orange)			

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Heyson East - Tunkalilla Beach	25-03-15	Chick		metal	HT (orange)			
Yilki - Encounter Bay	13-03-15	Chick		metal				
Myponga Beach	21-08-15	Adult	Male	metal		US (orange)		Partner of EY
Lands End	24-11-15	Adult		metal	JW (orange)		Fledgling chick	Partner unbanded
Lands End	24-11-15	Chick		metal	EW (orange)			Parents JW and unb
Myponga Beach	28-11-15	Chick		metal	UV (orange)			Parents EY and US
Normanville North/Carrickalinga Sands	28-11-15	Juvenile		metal	MV (orange)			One parent unbanded
Carrickalinga North/rotunda	23-02-16	Juvenile		metal	RV (orange)			Parents LP and unbanded
Lands End	29-02-16	Juvenile		metal		JZ (white)		Parents JW and unbanded
Lands End	29-02-16	Juvenile		metal	ZW (white)			Parents JW and unbanded
Yilki	29-02-16	Juvenile		metal	VH (white)			Parents KV and VH (orange)
Yilki	29-02-16	Adult		metal		VH (orange)	Fledgling chick	Parent of VH (white)
Waitpinga Beach East	23-03-16	Juvenile		metal		YB (white)		Parents KP and unbanded

Figure 7. Hooded Plover monitoring sites on the Northern coast of the Fleurieu Peninsula over the 2015/16 breeding season, showing the leg flag identities for each pair found at that particular site for this season and the flagged chicks in parentheses following the parents identities.

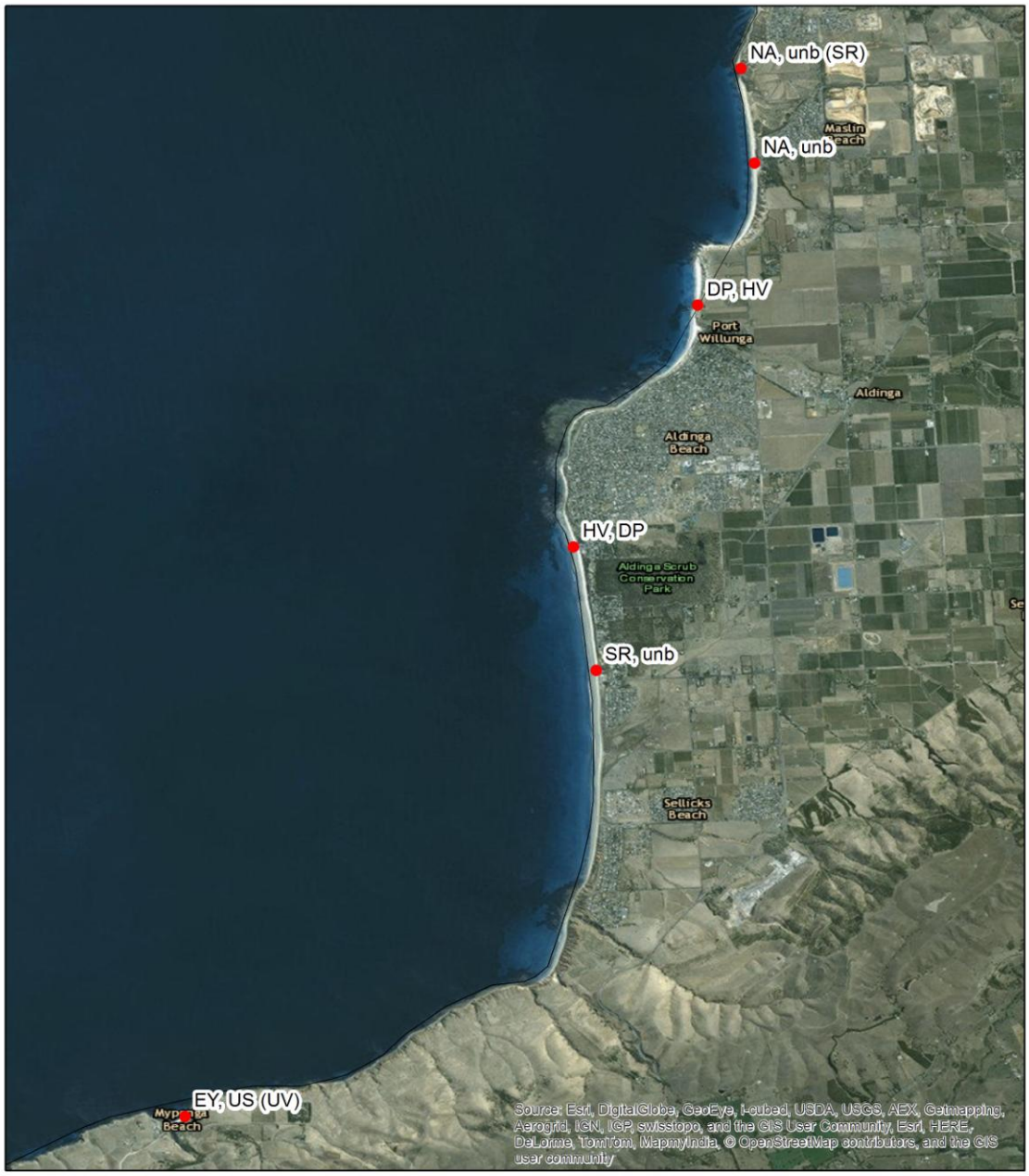
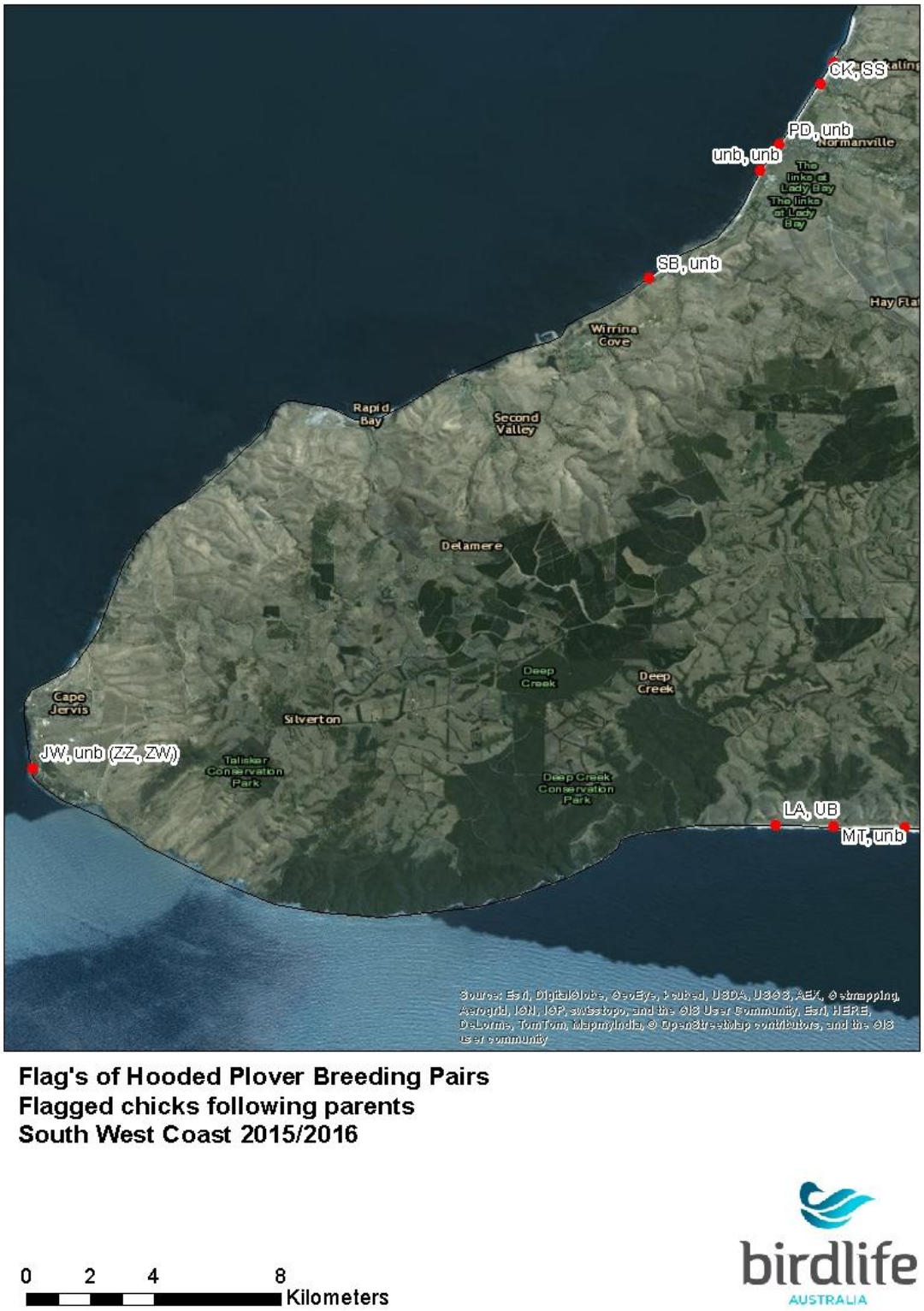


Figure 8. Hooded Plover breeding sites on the South West coast of the Fleurieu Peninsula over the 2015/16 breeding season, showing the leg flag identities for each pair found at that particular site for this season and the flagged chicks in parentheses following the parents identities.

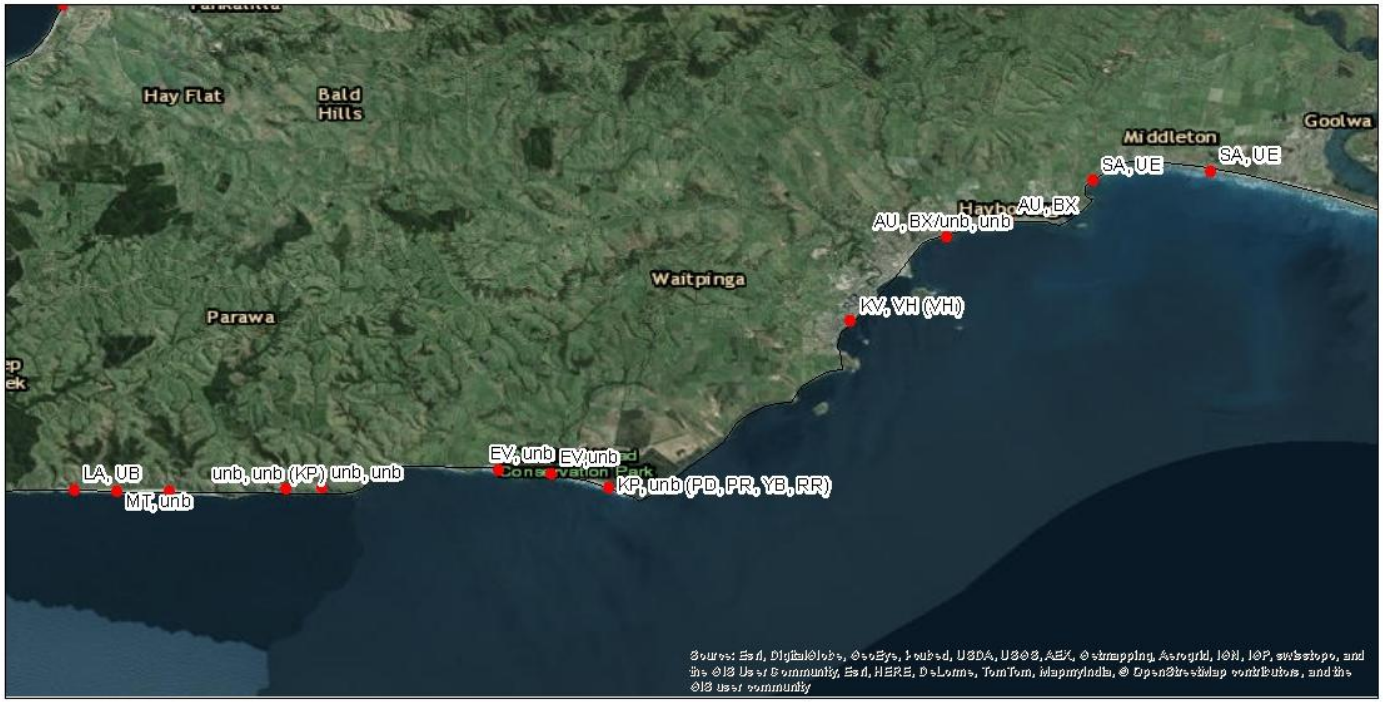


Flag's of Hooded Plover Breeding Pairs
Flagged chicks following parents
South West Coast 2015/2016

0 2 4 8 Kilometers

birdlife AUSTRALIA

Figure 9. Hooded Plover monitoring sites on the South coast of the Fleurieu Peninsula over the 2015/16 breeding season, showing the leg flag identities for each pair found at that particular site for this season and the flagged chicks in parentheses following the parents' identities.



Breeding Site Management

In total, only five of the 42 nests on the Fleurieu Peninsula were without any management during the egg stage, these were: one nest at Carrickalinga estuary and South, one nest found as chicks at Lands End, another nest found as eggs at Lands End, one nest at Tunkalilla East, one nest of 'suspect chicks' at Tunkalilla West and one nest found as chicks at Tunkalilla midway. Of the 42 total nests, 26 successfully hatched. Of these 26 nests that hatched, only three sites (Lands End, Tunkalilla East and Tunkalilla midway) did not have some form of management throughout the egg stage. Seven sites which hatched nest/s had signs at access points only (Olivers Reef, Waitpinga East and one nesting attempt at Carrickalinga North and rotunda). All other successfully hatched nest sites had active management (site protection in the form of signs and fencing) on the beach (Table 10). Some sites were extremely remote with limited access and at the time they were deemed at a reduced risk of human impacts, so active management on the beach was limited.

Similarly, only five of the 27 nesting attempts that produced chicks on the Fleurieu Peninsula during the 2015/16 were without some form of management during the chick stage (81.5% of broods were managed in some capacity), the broods without some form of management were; two broods of chicks at Lands End and one brood each at Tunkalilla East, Tunkalilla West (suspected) and Tunkililla midway. Fourteen of the 19 total fledglings produced (74%) came from nests with some form of beach management (i.e. at least some form of signage). Ten of these fledglings (53% of total fledglings) were produced from nests where active management (site protection; signs, fencing, shelters and/or wardens) was present on the beach (Table 10). Unsurprisingly, it was the remote sites that produced fledglings without any form of management; Lands End (3 fledglings), Tunkalilla East (1 fledgling) and Tunkalilla midway (1 fledgling).

Photo: Emma Stephens

Table 10. Summary of management across sites during the 2015/16 breeding season.

Pair	Date	Nesting stage	Nest habitat	Attempt #	Egg #	Chick #	Fledge #	Cause of failure	Management
Aldinga	10/09/2015	Nest	Beach	1	3				Sign Access, Sign Nest, Rope fence
Aldinga	7/10/2015	Chicks		1		2	0	Unknown	Sign Access, Sign Nest, Rope fence, Wardens
Ballaparudda	13/12/2015	Nest	Beach	1	3				Sign Access, Permanent fence
Ballaparudda	5/01/2016	Chicks		1		2	2		Sign Access, Permanent fence
Bashams Beach	3/09/2015	Nest	Foredune	1	1			Gulls	Sign Nest, Rope fence
Bashams Beach	22/09/2015	Nest	Beach	2	1			Gulls	Sign Nest, Rope fence
Bashams Beach	21/10/2015	Nest	Beach	3	3			Gulls	Sign Access, Sign Nest, Rope fence
Callawonga	11/11/2015	Nest	Beach	1	3			Tide	Permanent fence
Carrickalinga estuary & South	3/12/2015	Nest	Estuary/spit	1	2			Unknown	None
Carrickalinga estuary & South	12/01/2016	Nest	Estuary/spit	2	1			Tide	Sign Nest, Rope fence
Carrickalinga rotunda & North	10/09/2015	Nest	Beach	1	3			Unknown	Sign Access, Sign Nest, Rope fence
Carrickalinga rotunda & North	5/11/2015	Nest	Beach	2	2			Fox	Sign Access
Carrickalinga rotunda & North	15/12/2015	Nest	Beach	3	2				Sign Access, Sign Nest, Rope fence
Carrickalinga rotunda & North	4/01/2016	Chicks		3		2	2		Sign Nest, Rope fence
Lands End	29/09/2015	Chicks		1		2	1		None

Pair	Date	Nesting stage	Nest habitat	Attempt #	Egg #	Chick #	Fledge #	Cause of failure	Management
Lands End	13/12/2015	Nest	Beach	2	3				None
Lands End	10/01/2016	Chicks		2		2	2		None
Middleton beach	17/12/2015	Chicks		1		3	0	Unknown	Sign Access, Nest signs, Wardens
Myponga Beach	25/09/2015	Nest	Estuary/spit	1	3				Sign Access, Rope fence
Myponga Beach	22/10/2015	Chicks		1		2	1		Sign Nest, Rope fence, Sign Access
Normanville South	14/09/2015	Nest	Beach	1	3				Sign Access, Sign Nest, Rope fence
Normanville South	3/10/2015	Chicks		1		3	1		Sign Access, Sign Nest, Rope fence
Normanville South	28/11/2015	Nest	Beach	2	1				Sign Access, Sign Nest, Rope fence
Normanville South	29/12/2015	Chicks		2		3	2		Sign Access, Sign Nest, Rope fence
Ochre Cove, Maslins	18/08/2015	Nest	Foredune	1	3				Sign Access, Sign Nest, Rope fence
Ochre Cove, Maslins	16/09/2015	Chicks		1		3	1		Sign Access, Rope fence
Ochre Cove, Maslins	1/11/2015	Nest	Beach	2	3				Sign Access, Sign Nest, Rope fence
Ochre Cove, Maslins	30/11/2015	Chicks		2		3	0	Unknown	Sign Access, Sign Nest, Rope fence
Ochre Cove, Maslins	5/01/2016	Nest	Beach	3	3				Sign Access, Sign Nest, Rope fence
Ochre Cove, Maslins	30/01/2016	Chicks		3		3	0	Unknown	Sign Access, Sign Nest, Rope fence
Olivers Reef	24/09/2015	Chicks		1		3	0	Unknown	Sign Access
Olivers Reef	11/11/2015	Nest	Beach	2	1			Tide	Sign Access, Sign Nest, Rope fence
Olivers Reef	9/12/2015	Nest	Foredune	3	2			Fox	Sign Access, Sign Nest, Rope fence
Parsons Beach	29/11/2015	Nest	Foredune	1	1			Magpie/raven	Sign Access
Parsons Beach	29/12/2015	Nest	Foredune	2	3			Magpie/raven	Sign Access
Port Willunga	28/10/2015	Nest	Beach	1	2				Sign Access, Sign Nest, Rope fence
Port Willunga	24/11/2015	Chicks		1		2	1		Sign Access, Sign Nest, Rope fence
Shelley Beach (Lady bay)	15/12/2015	Nest	Beach	1	2			Abandoned	Sign Nest, Rope fence
Silver Sands	29/10/2015	Nest	Beach	1	1				Sign Access, Sign Nest, Rope fence

Pair	Date	Nesting stage	Nest habitat	Attempt #	Egg #	Chick #	Fledge #	Cause of failure	Management
Silver Sands	29/11/2015	Chicks		1		2	0	Unknown	Sign Access, Sign Nest, Rope fence
Snapper Point	17/09/2015	Nest	Beach	1	3				Sign Access, Sign Nest, Rope fence
Snapper Point	4/10/2015	Chicks		1		2	0	Unknown	Sign Access, Sign Nest, Rope fence
Snapper Point	25/10/2015	Nest	Beach	2	1				Sign Access, Sign Nest, Rope fence
Snapper Point	23/11/2015	Chicks		2		2	1		Sign Access, Sign Nest, Banners, Rope fence
Tunkalilla East	3/12/2015	Nest	Beach	1	3				None
Tunkalilla East	21/12/2015	Chick		1		1	1		None
Tunkalilla West	21/01/2016	Suspect chicks							None
Tunkalilla midway	3/12/2015	Chicks		1		2	1		None
Waitpinga Beach (East)	9/11/2015	Nest	Beach	2	1			Tide	Sign Access, Sign Nest
Waitpinga Beach (East)	9/12/2015	Nest	Dune	3	2			Unknown	Sign Access
Waitpinga Beach (East)	19/01/2016	Nest	Beach	4	2				Sign Access
Waitpinga Beach (East)	8/02/2016	Chicks		4		2	1		Sign Access
Watsons Gap	19/10/2015	Nest	Beach	1	3				Sign Access, Sign Nest, Rope fence
Watsons Gap	11/11/2015	Chicks		1		3	0	Unknown	Sign Access, Sign Nest, Rope fence
Watsons Gap	27/11/2015	Nest	Beach	2	1				Sign Access, Sign Nest, Rope fence
Watsons Gap	28/12/2015	Chicks		2		2	0	Kestrel/kite	Sign Access, Sign Nest, Rope fence, Shelters, Wardens
Watsons Gap	20/01/2016	Nest	Beach	3	1				Sign Access, Sign Nest, Rope fence
Watsons Gap	20/02/2016	Chicks		3		2	0	Kestrel/kite	Sign Access, Banners, Rope fence, Wardens

Pair	Date	Nesting stage	Nest habitat	Attempt #	Egg #	Chick #	Fledge #	Cause of failure	Management
Yilki	29/08/2015	Nest	Beach	1	2				Sign Access, Sign Nest, Rope fence
Yilki	29/09/2015	Chicks		1		2	0	Unknown	Sign Access, Sign Nest, Rope fence
Yilki	27/10/2015	Nest	Beach	2	3				Sign Access, Sign Nest, Rope fence
Yilki	25/11/2015	Chicks		2		3	0	Tide	Sign Access, Sign Nest, Rope fence
Yilki	7/12/2015	Nest	Beach	3	1				Sign Access, Sign Nest, Rope fence
Yilki	9/01/2016	Chicks		3		3	2		Sign Access, Sign Nest, Rope fence, Shelters, Wardens

No standing signs and additional fencing installed by City of Onkaparinga and volunteers to prevent cars parking up against the fenced nest at Aldinga Beach. Photo: Neville Hudson

Threats to breeding pairs

Of the 1,930 entries on the data portal for the 2015/16, of these entries, 1348 (69.8%) had complete threat assessments of sites (n=45 sites), while 1611 (83.5%) of entries included threat assessments which incorporated only directly observed threats and not evidence of threats (prints and tracks).

Callawonga, Christies Beach, Deep Creek CP Blowhole beach, Goolwa beach, Morgans beach, Morgans beach North (private access), O'Sullivans beach, Port Stanvac, Tunkalila Base/mid-west gully, Tunkalilla 1st alcove far east and Tunkalilla Tunk Head alcove were not included in the analysis or summary tables for threat data, as less than 5 threat assessments were completed throughout the season. This was often due to fewer visits to these sites. The sites with the highest number of threat assessments received were Yilki (200 records), Watsons Gap (124 records), Snapper (Point 124) and Olivers Reef (123 records). Given threats are likely to vary temporally (time of day and season), having many assessments gives us a better understanding of the average frequency, variety and intensity of threats the birds experience.

The threat data entered into the data portal assists BirdLife Australia with targeted management for each beach. Hooded Plovers and their beach habitats have a variety of threats and by gathering sufficient information on the threats at each site, we can assess whether human-based threats are the most dominant and can even determine the main user groups and target awareness raising activities to that particular group. The data that is collected from this citizen science project has enabled us to learn about ongoing trends and adapt our management over time. Having sound data also means we can influence policy. The Hooded Plover (Eastern subspecies) was listed under the EPBC Act (1999) in November 2014, and this was largely due to the body of research and monitoring that has occurred in the past decade. We need to continue collecting this data in order to make successful long-term conservation management decisions.

The most prevalent threats at sites on the Fleurieu Peninsula for the 2015/16 season were people, dogs, silver gulls and pacific gulls (Table 10), which were similar to the 2014/2015 season, with the one difference being that pacific gulls replaced foxes as the 4th most prevalent threat. From 2009, when detailed monitoring began on the Fleurieu Peninsula, the presence of people on beaches has been recorded more than any other threat type.

Dogs off lead were more prevalent than dogs on lead, occurring at 43.53% and 36.47% of sites respectively. The total number of dogs off leash for 2015/16 season was 2364, significantly more than the 1421 dogs on leash. This pattern has been seen for the last seven seasons. Illegal vehicles, stock (prints), native mammals (prints), horses and birds of prey were the least prevalent threats during this season.

Table 10. Proportion of visits where threats were observed, divided into direct observation of the threat (1585 visit) and evidence of the threat via tracks and prints (1328 visits).

Threat	Prop. of visits (Direct Observation)	Prop. of visit (Evidence – Tracks & Prints)
People - beach use	74.38% (1179)	95.33% (1266)
Dog	55.27% (876)	80.35% (1067)
Silver gulls	69.46% (1101)	
Dogs off lead	43.53% (690)	
Dogs on lead	36.47% (578)	
Pacific gulls	26.06% (413)	
Vehicle Tracks		17.02% (226)
Fox Prints		16.27% (216)
Magpies	12.24% (194)	
Ravens	8.58% (136)	
Permitted vehicles	7.95% (126)	
Horses	1.58% (25)	7.38% (98)
Bird of Prey	5.43% (86)	
Native Mammal Prints		2.26% (30)
Stock Prints		1.05% (14)
Illegal Vehicles		0.69% (11)

Table 11 provides a summary of the proportion of sites where given threats were observed. Silver gulls were the only threat recorded at all sites. People, including direct observation and prints were recorded at all but one site. Ballaparudda was the only site that did not have people recorded during any visits where threat assessments were undertaken, this site is one of the most remote sites on the Fleurieu Peninsula and threat assessments were only collected on six occasions (collected on each of the 6 visits made to the site).

Dogs, both through direct observation and prints, were recorded at 28 out of the 34 sites analysed. They were not recorded at Ballaparudda, Coolawang, Waitpinga (West), or

any of the Tunkalilla sites. At 12 sites foxes are deemed to be of greatest concern; at others stock are a prevalent threat (e.g. Ballaparudda); while at others, dogs off and on lead dominate the threat profile (e.g. Aldinga & Southport) (Table 13).

Table 11. Proportion of sites where threats were observed (sites are named in abbreviated form). Tracks and prints are included as evidence of threats, unless categorised separately.

Threats	**Percentage**	**Detected at:**	**Not detected at:**
Silver gulls	100% (34)	All sites	
Human beach use and Footprints	97.1% (33)	All sites, except for:	Ballaparudda
Human Footprints	97.1% (33)	All sites, except for:	Ballaparudda
Pacific gulls	94.1% (32)	All sites, except for:	Ballaparudda, Tunkalilla far West/Western estuary
Human beach use	94.1% (32)	All sites, except for:	Ballaparudda, Tunkalilla East
Dogs and Dog prints	82.3% (28)	All sites, except for:	Ballaparudda, Coolawang, Tunkalilla East, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (West)
Dog prints	82.3% (28)	All sites, except for:	Ballaparudda, Coolawang, Tunkalilla east, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (West)
Dogs off Leash	70.6% (24)	All sites, except for:	Ballaparudda, Coolawang, Parsons Beach, Sheepies beach, Tunkalilla east, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (east), Waitpinga Beach (West), Waitpinga estuary
Dogs	70.6% (24)	All sites, except for:	Ballaparudda, Coolawang, Parsons Beach, Sheepies beach, Tunkalilla east, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (East), Waitpinga Beach (West), Waitpinga estuary
Magpies	70.6% (24)	All sites, except for:	Hindmarsh River Mouth,

Threats	Percentage	Detected at:	Not detected at:
			Moana Beach South, Normanville North, Normanville South, Silver Sands, Southport, Tunkalilla midway, Waitpinga estuary, Yankalilla river mouth
Fox Prints	67.6% (23)	All sites, except for:	Aldinga, Bashams Beach, Inman River Outlet, Maslin Beach, Moana Beach, Moana Beach South, Myponga Beach, Normanville South, Port Willunga, Silver Sands, Snapper Point
Ravens	67.6% (23)	All sites, except for:	Ballaparudda, Coolawang, Maslin Beach, Moana Beach, Moana Beach South, Myponga Beach, Ochre Cove (Maslins), Port Willunga, Southport, Tunkalilla east, Tunkalilla midway
Dogs on Leash	64.7% (22)	All sites, except for:	Ballaparudda, Coolawang, Lands End, Parsons Beach, Sheepies beach, Tunkalilla east, Tunkalilla West, Tunkalilla miway, Waitpinga Beach (East), Waitpinga Beach (West), Waitpinga estuary, Yankalilla river mouth
Bird of Prey	64.7% (22)	All sites, except for:	Ballaparudda, Carrickalinga rotunda & North, Inman River Outlet, Maslin Beach, Middleton beach, Sheepies beach, Southport, Tunkalilla east

Threats	Percentage	Detected at:	Not detected at:
			Tunkalilla West, Tunkalilla midway, Waitpinga estuary, Yankalilla river mouth
Vehicles and Vehicle tracks	55.9% (19)	All sites, except for:	Ballaparudda, Bashams Beach, Carrickalinga rotunda & North, Lands End, Maslin Beach, Moana Beach South, Normanville North, Ochre Cove (Maslins), Parsons Beach, Port Willunga, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (East), Waitpinga Beach (West), Waitpinga estuary
Vehicle Tracks	55.9% (19)	All sites, except for:	Ballaparudda, Bashams Beach, Carrickalinga rotunda & North, Lands End, Maslin Beach, Moana Beach South, Normanville North, Ochre Cove (Maslins), Parsons Beach, Port Willunga, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (East), Waitpinga Beach (West), Waitpinga estuary
Permitted vehicles	32.3% (11)	Aldinga, Hindmarsh River Mouth, Moana Beach, Myponga Beach, Normanville South, Olivers Reef, Silver Sands, Snapper Point, Southport, Watsons Gap, Yilki	All other sites
Native mammal prints	32.3% (11)	Ballaparudda, Coolawang, Lands End, Myponga Beach, Sheepies beach,	All other sites

Threats	Percentage	Detected at:	Not detected at:
		Tunkalilla east, Tunkalilla West, Tunkalilla midway, Waitpinga Beach (East), Waitpinga Beach (West), Waitpinga estuary	
Illegal vehicles	17.6% (6)	Aldinga, Olivers Reef, Shelley Beach (lady bay), Silver Sands, Snapper Point, Yankalilla river mouth	All other sites
Stock prints	17.6% (6)	Aldinga, Ballaparudda, Sheepies beach, Tunkalilla East, Tunkalilla West, Tunkalilla Midway	All other sites
Horses and horse prints	14.7% (5)	Aldinga, Normanville South, Olivers Reef, Port Willunga, Silver Sands	All other sites
Horse prints	14.7% (5)	Aldinga, Normanville South, Olivers Reef, Port Willunga, Silver Sands	All other sites
Horses	8.8% (3)	Aldinga, Normanville South, Silver Sands	All other sites

The recreational activities that people were observed participating in at sites appears as a summary in Table 12. The most frequently recorded recreational activity was walking/jogging, followed by dog walking, and sitting/sunbaking. Recreational activities have shifted in relative frequency since last season, where previously driving was the least frequent, with only 1.9% of people undertaking this activity, during the 2015/16 season it was the fifth most frequent and has increased to 12.4% of people. Fishing on the other hand has reduced, from 7.2% of people undertaking these activities during 2014/15, decreasing to 2.4% of people fishing in the 2015/2016 season. Variation in threats between seasons may occur due to the variation in the number of assessments occurring at different sites between the seasons.

Table 13 provides a site by site summary of prevalence of potential threats, which allows us to identify beach user groups across sites and determine necessary management responses needed at sites (e.g. fox control). Some sites have more static recreational

users, such as anglers (Waitpinga estuary), while most other sites are dominated by mobile recreationalists (e.g. Hindmarsh and Yankalilla river mouths).

Table 12. The main activities people were undertaking when observed using the beach. In total, there were 11,903 (73.2%) people at the water's edge, 4065 (25%) on the beach, 9 (0.06%) observed inside signed/fenced areas and 285 (1.75%) in the dune.

Human recreational activity (16,262 people observed)	**% intensity**
Walking/jogging	31.6% (5,131)
Dog walking	20.1% (3,269)
Sitting/sunbaking	16.3% (2647)
Surfing/swimming	13.0% (2117)
Driving	12.4% (2019)
Playing games	4.3% (695)
Fishing	2.4% (384)

Beach update sign at Yilki, Victor Harbor. Photo: Elizabeth Steele-Collins

Table 13. The prevalence of potential threats to Hooded Plover at sites monitored. Prevalence refers to the how frequently that threat was observed (# times/# visits). Threat prevalence is categorised as heavy, moderate, sparse or rare according to the percentage of time recorded. Common activity is derived from observations of the most common recreational activities at sites.

Site (number of threat assessments observations/print)	**Heavy threats (>50%)**	**Moderate threats (20-50)**	**Sparse threats (<20%)**	**Rare threats (<6%)**	**Common activity**
Aldinga (65/62)	Dog Prints, Vehicle tracks, People, People prints, Permitted vehicles, Dogs off, Dogs on, Silver gulls,	Horse prints,	Pacific gulls, Magpie	Stock prints, Birds of Prey, Horses, Illegal vehicles, Raven	Walkers
Ballaparudda (6/6)	Native mammal prints, Stock prints, Fox	Silver gulls	Magpie		-
Bashams Beach (75/45)	Dog Prints, People prints, People, Silver gulls	Pacific gulls, Dogs off, Dogs on	Birds of Prey, Magpie, Raven		Dog Walkers
Carrickalinga estuary & South (34/24)	Dog Prints, People prints, People, Dogs off, Silver gulls, Fox	Dogs on, Raven,	Vehicle tracks, Raven	Birds of Prey, Pacific gulls, Magpie	Walkers
Carrickalinga rotunda & North (53/34)	Dog Prints, People prints, People,	Dogs off, Dogs on, Silver gulls	Native mammal prints, Magpie, Fox	Pacific gulls,	Walkers
Coolawang (15/14)	People	Magpie,	Vehicle	People,	Walkers

Site (number of threat assessments observations/print)	Heavy threats (>50%)	Moderate threats (20-50)	Sparse threats (<20%)	Rare threats (<6%)	Common activity
	prints, Fox	Silver gulls	tracks, Birds of Prey, Pacific gulls,		
Hindmarsh River Mouth (47/44)	Dog Prints, People prints, People, Dogs off, Silver gulls	Pacific gulls, Dogs on	Raven, Fox	Vehicle tracks, Birds of Prey, Permitted vehicles,	Walkers
Inman River Outlet (12/12)	Dog Prints, People prints, People, Dogs off, Silver gulls	Pacific gulls, Dogs on	Vehicle tracks, Magpie	Raven	Walkers
Lands End (28/13)	People prints, Silver gulls	Native mammal prints, Dog Prints, Pacific gulls, Raven, Fox	People, Dogs off, Magpie	Birds of Prey,	Walkers
Maslins Beach (12/10)	Dog Prints, People prints, People, Dogs off	Silver gulls	Dogs on, Magpie	Pacific gulls,	Walkers
Middleton beach (38/35)	Dogs on, People, Silver gulls	Pacific gulls, Magpie	Vehicle tracks,	Raven, Fox	Walkers
Moana Beach (24/24)	Dog Prints, Vehicle tracks, People prints, People,	Birds of Prey, Permitted vehicles, Dogs off, Dogs on,	Pacific gulls, Magpie		Sunbaking/sitting

Site (number of threat assessments observations/print)	Heavy threats (>50%)	Moderate threats (20-50)	Sparse threats (<20%)	Rare threats (<6%)	Common activity
	Silver gulls				
Moana Beach South (11/10)	Dog Prints, People prints, People, Dogs off, Silver gulls	Birds of Prey, Dogs on,	Pacific gulls,		Sunbaking/sitting
Myponga Beach (14/11)	Dog Prints, People prints, People, Silver gulls	Vehicle tracks, Permitted vehicles, Dogs on,	Native mammal prints, Birds of Prey, Pacific gulls, Dogs off		Walkers
Normanville North (23/4)	Dog Prints, People prints, People, Dogs off, Fox	Dogs on, Raven, Silver gulls		Birds of Prey, Pacific gulls,	Walkers
Normanville South (76/28)	Dog Prints, People prints, People,	Dogs on, Vehicle tracks, Permitted vehicles, Dogs off, Silver gulls	Horse prints, Raven	Birds of Prey, Pacific gulls, Horses,	Walkers
Ochre Cove, Maslins (110/103)	Dog Prints, People prints, Silver gulls	People, Pacific gulls, Magpie	Dogs on, Dogs off	Birds of Prey, Fox	Walkers
Olivers Reef (123/122)	Dog Prints, People prints, People, Dogs off, Silver gulls	Dogs on,	Birds of Prey, Pacific gulls, Fox	Vehicle tracks, Horse prints, Illegal vehicles, Permitted vehicles,	Dog Walkers

Site (number of threat assessments observations/print)	Heavy threats (>50%)	Moderate threats (20-50)	Sparse threats (<20%)	Rare threats (<6%)	Common activity
				Magpie, Raven	
Parsons Beach (31/30)	People prints, Fox, Silver gulls	People, Pacific gulls,	Birds of Prey, Magpie, Raven	Dog Prints,	Surfing/Swimming
Port Willunga (46/44)	Dog Prints, People prints, People, Dogs off	Dogs on,		Horse prints, Birds of Prey, Pacific gulls, Magpie, Silver gulls	Dog Walkers
Sheepies beach (24/20)	People prints, Fox, Silver gulls	Magpie	Vehicle tracks, Pacific gulls, Raven	Native mammal prints, Dog Prints, People,	Walkers
Shelley Beach (lady bay) (18/13)	Dog Prints, People prints, Fox,	Vehicle tracks, People, Pacific gulls, Dogs off, Magpie, Raven, Silver gulls	Birds of Prey,	Dogs on, Illegal vehicles,	Sunbaking/sitting
Silver Sands (110/108)	Dogs on, Dog Prints, Vehicle tracks, Horse prints, People prints, People, Dogs off, Silver gulls	Permitted vehicles,	Horses,	Birds of Prey, Pacific gulls, Illegal vehicles, Raven	Walkers

Site (number of threat assessments observations/print)	Heavy threats (>50%)	Moderate threats (20-50)	Sparse threats (<20%)	Rare threats (<6%)	Common activity
Snapper Point (124/115)	Dog Prints, People prints, People, Pacific gulls, Silver gulls	Dogs on, Dogs off	Birds of Prey, Magpie	Vehicle tracks, Illegal vehicles, Permitted vehicles,	Dog Walkers
Southport (22/21)	Dogs on, Dog Prints, People prints, People, Dogs off, Silver gulls	Vehicle tracks, Permitted vehicles,	Pacific gulls,	Fox	Surfing/Swimming
Tunkalilla East (12/12)	Fox, Silver gulls	Native mammal prints, Stock prints, People prints, Pacific gulls,	Vehicle tracks,	Magpie	-
Tunkalilla West (7/7)	Native mammal prints, Fox, Silver gulls	People prints, Magpie	Stock prints, People, Raven		Surfing/Swimming
Tunkalilla Midway (8/8)	Fox	Native mammal prints, Stock prints, People prints, People, Silver gulls	Pacific gulls,		Surfing/Swimming
Waitpinga Beach (east) (35/31)	People prints, Fox, Silver gulls	People, Pacific gulls, Raven	Birds of Prey, Magpie	Native mammal prints, Dog	Fishers

Site (number of threat assessments observations/print)	Heavy threats (>50%)	Moderate threats (20-50)	Sparse threats (<20%)	Rare threats (<6%)	Common activity
				Prints,	
Waitpinga Beach (West) (26/26)	People prints, Silver gulls	People, Fox	Pacific gulls, Raven	Native mammal prints, Birds of Prey, Magpie	Surfing/Swimming
Waitpinga estuary (24/20)	People prints, People, Silver gulls	Pacific gulls, Fox	Raven	Native mammal prints, Dog Prints,	Fishers
Watsons Gap (124/114)	Dog Prints, People prints, People, Silver gulls	Dogs on, Pacific gulls, Dogs off	Vehicle tracks, Birds of Prey, Magpie, Fox	Permitted vehicles, Raven	Walkers
Yankalilla river mouth (8/8)	Dog Prints, Vehicle tracks, People prints, Fox, Raven, Silver gulls	People, Pacific gulls, Dogs off	Illegal vehicles,		Walkers
Yilki (200/150)	Dogs on, Dog Prints, People prints, People, Pacific gulls, Silver gulls	Dogs off, Magpie,	Raven	Vehicle tracks, Birds of Prey, Permitted vehicles, Fox	Walkers

Table 14 provides the average number of people and dogs sighted, both off and on lead. Aldinga, Southport and Moana Beach had the highest number of people present, with between 47 and 67 people on average per visit. Aldinga, Moana Beach and Yilki had the highest number of Dog on leash on average per visit, while Port Willunga, Aldinga and Olivers Reed had the highest number of dogs off leash on average per visit. At all site, expect Moana Beach and Yilki, the average number of dogs off leash were greater than the average number of dogs on leash.

Table 14. Mean (± standard error) number of people and dogs on and off leash observed at sites.

Site (number of visits)	Average of ALL PEOPLE	Average of ALL DOGS ON	Average of ALL DOGS OFF
Aldinga (65)	66.63 ± 24.82	3.15 ± 0.80	4.29 ± 0.66
Ballaparudda (6)	0.00	0.00±	0.00
Bashams Beach (75)	2.12 ± 0.28	0.44 ± 0.11	0.59 ± 0.17
Carrickalinga estuary & South (35)	8.74 ± 2.85	0.41 ± 0.11	1.88 ± 0.50
Carrickalinga rotunda & North (53)	7.51 ± 1.55	0.51 ± 0.14	1.15 ± 0.23
Coolawang (15)	0.07 ± 0.07	0.00	0.00
Hindmarsh River Mouth (47)	10.28 ± 1.78	0.83 ± 0.19	2.85 ± 0.46
Inman River Outlet (12)	5.33 ± 1.16	1.50 ± 0.73	2.17 ± 0.84
Lands End (28)	0.43 ± 0.31	0.00	0.07 ± 0.05
Maslin Beach (12)	6.17 ± 2.36	0.25 ± 0.18	1.25 ± 0.30
Middleton beach (38)	20.11 ± 3.93	1.37 ± 0.22	1.74 ± 0.37
Moana Beach (24)	47.13 ± 30.02	2.25 ± 1.65	1.71 ± 0.53
Moana Beach South (11)	12.55 ± 5.85	1.27 ± 0.57	1.55 ± 0.39
Myponga Beach (14)	9.14 ± 3.45	0.43 ± 0.23	0.57 ± 0.27
Normanville North (23)	5.87 ± 1.44	1.13 ± 0.30	1.48 ± 0.35
Normanville South (76)	11.76 ± 2.03	0.93 ± 0.19	1.04 ± 0.19
Ochre Cove, Maslins (110)	0.85 ± 0.13	0.14 ± 0.05	0.22 ± 0.06
Olivers Reef (123)	8.70 ± 0.75	0.83 ± 0.10	3.10 ± 0.30
Parsons Beach (31)	1.42 ± 0.74	0.00	0.00
Port Willunga (46)	9.35 ± 1.00	0.89 ± 0.25	5.76 ± 0.75
Sheepies beach (24)	0.13 ± 0.13	0.00	0.00

Site (number of visits)	Average of ALL PEOPLE	Average of ALL DOGS ON	Average of ALL DOGS OFF
Shelley Beach (lady bay) (18)	2.33 ± 1.00	0.11 ± 0.11	0.72 ± 0.25
Silver Sands (110)	14.25 ± 1.48	1.38 ± 0.15	2.54 ± 0.28
Snapper Point (124)	3.31 ± 0.34	0.63 ± 0.07	1.10 ± 0.14
Southport (22)	59.95 ± 24.65	1.23 ± 0.25	1.73 ± 0.44
Tunkalilla midway (12)	0.00	0.00	0.00
Tunkalilla West (7)	0.71 ± 0.71	0.00	0.00
Tunkalilla East (8)	1.00 ± 0.68	0.00	0.00
Waitpinga Beach (East) (35)	1.31 ± 0.41	0.00	0.00
Waitpinga Beach (West) (26)	0.96 ± 0.37	0.00	0.00
Waitpinga estuary (24)	3.04 ± 1.25	0.00	0.00
Watsons Gap (124)	4.58 ± 0.58	0.49 ± 0.09	0.72 ± 0.15
Yankalilla river mouth (8)	1.00 ± 0.63	0.00	0.38 ± 0.26
Yilki (200)	7.68 ± 1.00	1.89 ± 0.21	1.31 ± 0.17

Site Management and Awareness Raising activities during 2015/16

In the 2015/16 breeding season, the following activities were carried out:

Site management:

- The Hooded Plover Council Response Plans in conjunction with Volunteer Regional Coordinators continue to guide the step by step process of management once a nest is found.
- Chick wardening occurred for the first time on the Fleurieu Peninsula during the 2015/16 breeding season.
- Chick banners were also deployed for the first time on the Fleurieu Peninsula during the 2015/16 season.
- BirdLife Australia 'Beach update' signs have been used along the South Coast and will be rolled out across the Fleurieu Peninsula in the 2016/17 season.
- Schoolies specific signage was also used on the South Coast in 2015/16, asking Schoolies for their help by avoiding the parts of beach that were marked as Hooded Plover habitat and where breeding pairs had nests or chicks. The Schoolies signs were put up at all sites where there were either nests or chicks at the time. The volunteers received a lot of feedback regarding these Schoolie signs, from public and locals all of which was positive. However on the down side, unfortunately some signs and a fence were damaged by Schoolies.
- Temporary fencing and signage around nests and chicks.
- BirdLife Australia now hold the scientific research permit with National Parks and Wildlife South Australia (NPWSA) for monitoring, capture, banding and use of remote sensing cameras on the Fleurieu Peninsula, and for the biennial count and use of remote cameras on the Fleurieu.
- New interpretive permanent signage (34 in total) has been installed across the Fleurieu. The sign design (based on BirdLife Australia signage) and printing was funded by AMLR NRM board and installed by City of Onkaparinga, District Council of Yankalilla, City of Victor Harbor, Alexandrina Council, rangers at Newland Head CP, Green Army and Friends of Heysen Trail.

Volunteer and Community Engagement:

- There were 21 new volunteers who joined the Fleurieu Peninsula monitoring program this season.
- BirdLife Australia and AMLR NRM Coast Estuary and Marine officers held a workshop for volunteers and land managers at Normanville in August 2015. The

workshop provided training for new and existing volunteers regarding monitoring, management, the data portal, Work Health Safety, and communicating with people on the beach.

- BirdLife Australia and AMLR NRM staff Grainne Maguire, Meg Cullen, Emma Stephens, Caroline Taylor and Corey Jackson held a training workshop for the new Volunteer Regional Coordinators at Victor Harbor in August 2015.
- BirdLife Australia staff (Grainne Maguire, Glenn Ehmke and Meg Cullen) visited in August and November 2015 to undertake banding with Emma Stephens.
- Deakin University and BirdLife Australia staff (Daniel Lees, Kasun Ekanayake, Aleisa Lamanna and Jean Turner) undertook Red-capped Plover banding at Moana, St Kilda and Semaphore in December and January 2016.
- Grainne Maguire and Emma Stephens met with City of Victor Harbor's Environment and Regulatory Services Manager to discuss the up-coming consultation on the dog by-law to be implemented January 2017.
- Wendy White, Emma Stephens and volunteers from the Normanville Natural Resource Centre organised a Hooded Plover stall at the Yankalilla show in October 2015.
- Wendy White has developed a pamphlet for the local beaches from Myponga Beach to Cape Jervis. The pamphlet outlines where the breeding pairs are, flagged birds, and breeding success recorded since 2006.
- Wendy White and the volunteers at the Normanville NRC have put a Hooded Plover display in the window of the NRC with photos and simple text regarding the local fledgling success.
- On Plover Appreciation Day Elizabeth Steele-Collins and Debbie Prestwood talked to beach users about the Hooded Plovers and handed out pamphlets.
- Emma Stephens presented to the City of Holdfast Bay Green Army team on beach-nesting and migratory birds, managing to recruit one of the participants as a volunteer.
- Emma Stephens, Sue Read, Ash Read, Dudley Colbert and Karin Riederer set up a Hooded Plover stall at City of Onkaparinga's Eco Beach Adventure Day at Port Noarlunga. The kids activity (colouring in Hooded plover calico bag) was extremely popular. Kids coloured in approximately 100 bags and we gave away approximately 100 dog leads.
- Sue and Ash Read were successful with an application for a City of Onkaparinga environmental grant for 3D display models and a badge maker for community events.

- Emma Stephens, Cecilie Siggs, Linda Stacey and Jim Stacey presented to the Myponga Beach Property Owner's Association AGM in March 2016. There were approximately 50 people present, two local shack owners were keen to be involved with monitoring the pair at Myponga Beach.
- Emma Stephens presented the 2015/16 breeding results at the Coastal Officer's Forum in March 2016. The Coastal Officer's Forum consists of coastal staff based at Councils, NRM and DEWNR.
- Emma Stephens along with the Samphire Coast Icon Project Coordinator presented to the NRM Board's Coastal ambassadors program participants regarding the Hooded and Red-capped Plover projects, and encouraging people to join up.
- A meeting was held with AMLR NRM, BirdLife Australia, City of Onkaparinga Council, DC Yankalilla Council, City of Victor Harbor Council and Alexandrina Council staff regarding the up-coming review of the dog by-laws with relation to Hooded Plover breeding sites.
- A de-brief meeting with NRM staff, BirdLife Australia staff and Volunteer Regional Coordinators was held in April 2016 which included planning for the 2016/17 season.
- An end of season event for all Hooded Plover volunteers was held at the Normanville Surf Life Saving Club in April 2016. Presentations were given by Emma Stephens, Meg Cullen and the Volunteer Regional Coordinators.
- Emma Stephens, Corey Jackson, Linda Durham, Mary Akkerman and Debbie Prestwood manned a Hooded Plover stall at the Whale Time Playtime Festival.

Media Engagement:

- The first nest in the region was made public in the Southern Times Messenger, and Maslin Newsletter. Karin Riederer, Sue Read and Ash Read submitted regular updates throughout the breeding season in the Maslin Newsletter (monthly publication) and also an article with the results of the season.
- Mark Akkerman submitted an article about the Yilki pair and the results of the successful season in the Victor Times.
- Wendy White has contributed articles to the Yankalilla Regional Newsletter.
- The Hooded Plover and Natural Resources Adelaide and Mount Lofty Ranges Facebook pages posted regular updates.

Acknowledgements

A huge thank you to all of the amazing volunteers who participate in Hooded Plover monitoring. The data collected is invaluable and helps us put into perspective how threatened each pair is and to adapt our managements to suit sites better. It also will help in future with any proposed planning or changes to regulations: statistics lend great weight to our submissions and recommendations.

Big thanks to Emma Stephens as the coordinator of Hooded Plover efforts on the Fleurieu Peninsula, to Corey Jackson and Emma for their site visits and assistance with site management, and to Tony Flaherty and the Adelaide and Mount Lofty Ranges NRM Board for their support and for recognising the importance of coastal biodiversity. Special thanks to the councils and rangers involved for protecting nesting sites and supporting the project and its volunteers: City of Onkaparinga, District Council of Yankalilla, DEWNR (Newland Head Conservation Park - National Parks and Wildlife SA), City of Victor Harbor and Alexandrina Council.

Also a special thank you to the Volunteer Regional Coordinators, who did a tremendous job this season in coordinating the local efforts, Wendy White, Elizabeth Steele-Collins, David and Sue Thorn and Ash and Sue Read.