Monitoring Hooded Plovers on the Fleurieu Peninsula:
A summary of breeding success for the 2018/2019 season

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Contents

Photo: David and Sue Thorn. Hooded Plover adults and fledgling at Bashams Beach

Executive Summary

The 2018/2019 Hooded Plover breeding season reaches a 10 year milestone of Hooded Plover recovery on the Fleurieu Peninsula. In 2008/2009, BirdLife Australia and Adelaide and Mount Lofty Natural Resources Management entered into an agreement to introduce BirdLife Australia's national recovery action plan for Hooded Plovers to the Fleurieu Peninsula.

During the 2018/19 season, we had 57 people entering data into the MyBeachBird data portal, with 2,625 data entries. Fifty sites were visited, with 33 breeding pairs confirmed on the Fleurieu this season. There were 86 breeding attempts (223 eggs), with 46 chicks, and 10 fledglings. This is the highest number of breeding attempts and eggs recorded in a season across ten consecutive seasons. A high percentage of the nests failed at egg stage (74.4%) and many failures were suspected to have been taken by the tide. Chick survival was at its lowest rate (21.7%), and this was the lowest fledgling per pair result (0.30) since monitoring began in 2008/09.

Management (protection of the breeding site via signage and temporary fencing) was undertaken at 70.9% of sites, and eight (89%) managed nests produced fledglings, with one (11%) nest fledging a chick from a remote site that did not require management. In addition to on-ground management, many events were undertaken on the Fleurieu Peninsula to raise awareness of the plight of the Hooded Plover, and to recruit new volunteers.

Resightings of flagged birds showed young birds breeding for the first time in 2018/19. For example, a former territory at Maslins Beach which hadn't been occupied in four seasons, was re-occupied by RV Orange (fledged in 2016). Two birds have likely died this season as they disappeared during the breeding season and have not been resighted (UV Orange; three years old, and SB Orange; at least 5.5. years old as SB was flagged as an adult).

This project is supported by the Adelaide and Mount Lofty Ranges Natural Resources Management Board, through funding from the Australian Government's National Landcare Program and the NRM Levies.

Introduction

The pressures placed on the Australian coast by over 85% of the population living within 50 kms of the coast, a growing trend for a 'seachange', and coastal tourism representing a 20 million dollar recreation investment, are undoubtedly taking their toll on the resident shorebirds who 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 Plovers and Hooded Plovers, that nest on ocean beaches and offshore islands, as well as 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. This listing occurred in 2015 after years of detailed data collection that was able to provide evidence for the species eligibility for meeting threatened criteria.

The Hooded Plovers are the most threatened of beach-nesting resident shorebirds because they are habitat specialists. They are limited to breeding exclusively on ocean beaches in South Australia, with the rare exception of some coastal saline lakes in parts of the South East coast, Yorke Peninsula and on the Eyre Peninsula. The oystercatchers have a broader nesting habitat range which includes rocky outcrops, islands and more heavily vegetated dune areas, and 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, and 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 they 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 five 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 adult birds attempt 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 evolved in to the National Beach-nesting Birds Program and is currently funded by a range of Government grants and stakeholder partnerships, as well as various philanthropic trusts and donors. The Beach-nesting Birds program on the Fleurieu Peninsula was initiated as a collaboration with Adelaide and Mt Lofty Ranges Natural Resources Management Board in 2008 -2009, with initial investment supporting the 2008 Hooded Plover Biennial Count.

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.

The national objectives of this recovery program are to:

1. Improve breeding success and population resilience of Hooded Plovers through:

   -On-ground threat mitigation at priority sites across the species range

   -Research to overcome key knowledge gaps including improving threat mitigation, as well as to evaluate and adapt best practice for Hooded Plover recovery

   -Education to shape sustainable beach use behaviours

2. Identify, protect and restore critical habitat so that the current distribution is protected and maintained or improved

3. Develop tools, resources, capacity and supportive policy to ensure long-term sustainability and consistent delivery of recovery actions

On the Fleurieu Peninsula, our aims are specifically to:

1. **Improve breeding success and population resilience of Hooded Plovers through:**

i. 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 five years for a comparison of site-based threat profiles and to quantify improvements in breeding success related to management;

ii. 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;

iii. Carry out on-ground management of vulnerable breeding sites following management directions outlined in 'A practical guide to managing beach-nesting birds in Australia';

iv. 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;

v. Use nest cameras at sites where nests repeatedly fail 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;

vi. 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. Blood samples are taken and contribute to a collaborative study of population genetics carried out by Museums Victoria, Deakin University and BirdLife Australia, and;

vii. Engage communities in Hooded Plover conservation via organised events or activities such as the biennial count; scope viewing; dogs' breakfasts; school visits; craft stalls. Awareness raising and opportunities to participate are carried out with the aim of changing beach user behaviours to promote coexistence and long-term sustainable beach use.

2. **Protect and restore critical habitat so that the current distribution is maintained, protected and resilient**

i. Maintain a distribution map and database of location of breeding pairs of Hooded Plovers;
ii. Estimate population numbers of Hooded Plovers in an eastern mainland census every two years (e.g. November 2016, November 2018);
iii. 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, and;
iv. Assess occurrence of threats at breeding sites from data collected during the biennial count and map sites according to threat status.

3. **Develop tools, resources, capacity and supportive policy to ensure long-term sustainability and consistent delivery of recovery actions**

i. Establish 'Friends of the Hooded Plover' regional groups on the Fleurieu Peninsula to encourage community ownership and long-term sustainability of the program;
ii. Develop new resources and materials to support volunteers and land managers in monitoring and recovery actions for the Hooded Plover;
iii. Hold regular meetings, workshops, training opportunities and support communications between volunteers, land managers and program coordinators so that all participants share feedback and work collaboratively toward improved recovery outcomes;
iv. Maintain and adapt the online MyBeachBird portal to support data collection, viewing and extraction;
v. Work in partnership with land managers to deliver consistent on-ground recovery actions, signage and messaging, and;
vi. Engage with local, state and federal government policy, planning and decision makers to ensure threats to Hooded Plovers and their habitat are acknowledged, and managed accordingly.

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 and induct 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. BirdLife Australia staff also carry out research to improve recovery efforts, analyse and review data to maintain an adaptive management approach, and maintain a national network for information sharing and supporting recovery of the Hooded Plover.

- On the Fleurieu Peninsula, Natural Resources Adelaide and Mount Lofty Ranges coast and marine officers coordinate and support the project and volunteers, and local council and some Department for Environment and Water (DEW) staff assist with nest protection responses. In addition the Sharing our Shores with Coastal Wildlife project officers, funded by NRM, assist in delivering key actions.
- 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 DEW. 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, as well as resourcing towards BirdLife Australia coordination.

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 and Water, councils, community and the Natural Resources Management Board. Many of these actions and priorities however, need updating due to the considerable advances in research and knowledge of South Australian Hooded Plover sites, threats and actions since 2006.

There is no National Recovery Plan for the species. The Federal Government compile Conservation Advice for the species, and the last 2014 iteration is due for review and updating in 2019.

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 2018/2019 Breeding Season

As part of BirdLife Australia's Beach-nesting Birds Program, monitoring of breeding Hooded Plover pairs via the MyBeachBird portal occurred at priority sites across South Australia. On the Fleurieu Peninsula, an attempt is made to monitor all occupied sites, i.e. the entire population of Hooded Plovers, while elsewhere in South Australia, only a small sample of breeding pairs are monitored within each NRM region due to logistical and resource constraints.

The volunteers of the Fleurieu Peninsula once again showed tremendous effort in entering their sightings into the portal with a total of 2,625 data records entered into the online data portal during the 2018/2019 season. This is an increase in entries (467 more entries) from the previous season. Nine data portal user accounts were responsible for 1,787 (68%) data portal entries. Some of these entries are reports passed on to these users and entered on their behalf, but otherwise the high number of entries by some users signals a greater need to share the load at some sites to avoid volunteer burnout. For the additional 31.9% of sites, data is collected by a larger number of volunteers (40 portal users) who each contribute to build a picture of the breeding success and threats at sites. Every observation counts, and each and every one of the Fleurieu volunteers should be very proud as they are a region with one of the highest quality data sets for Hooded Plovers.

Overall, volunteers from the Fleurieu accounted for 72% of the data portal entries received from across South Australia, and 25% of all Victorian and South Australian data (entered as of the 7th May 2019), which is to be commended. It also highlights the value of having an employed volunteer coordinator (funded by the Adelaide and Mount Lofty Ranges NRM Board), BirdLife Australia staff based in Adelaide working on the Sharing our Shores with Coastal Wildlife Project, and the network of support available from the AMLR Coast and Marine NRM team.

There were 50 sites that were checked by volunteers over the breeding season. Of these 50 sites, 33 sites had pairs on territory, and 9 sites had birds sighted, either individuals, flocks or non-nesting pairs (no breeding detected). The remaining 8 sites had no birds

sighted for the season, but are still checked as they were historically occupied and potentially a location where young birds may try to re-establish a territory. A breakdown of the number of data portal entries for each site, and the threats that were assessed at each site can be found in Table 1.

Lands End, Waitpinga West and Goolwa each had a pair of Hooded Plovers regularly present on territory, but no nests were confirmed here. Nests at Lands End can be inherently difficult to find; this season, a nest was suspected based on the adults behaviour but the nest was not located. Waitpinga West had five scrapes recorded, but no confirmed breeding and the Goolwa Pair were found to have scrapes near the Middleton section of beach. These three pairs were included in the overall tally of nesting pairs on site because it is most probable that they were breeding pairs whose nests failed rapidly, in between observation visits. Figures 1-3 provide an overview of breeding sites monitored.

In the 2018/19, there were a number of territory changes and several new sites arose, these include:

- In the 2017/2018 season, we weren't sure if the pairs at Olivers Reef and Victor Central were the same pair. PX white was flagged at the end of the 2018 season. This season, it has been confirmed that the same pair have been using Victor Central/Olivers Reef/Hindmarsh River Mouth, as PX white and unbanded (unb) partner nested at Victor Central, and then took their chicks to Olivers Reef and Hindmarsh River Mouth territories.
- A new pair at Yankalilla River Mouth was confirmed as nesting in December. JZ white and unb managed to have one nesting attempt and also fledge a chick from this site. JZ white fledged from Lands End in February 2016.
- After several seasons of only three breeding pairs occupying Tunkalilla Beach, a new unbanded pair began to occupy Tunk Head Alcove. This is fantastic news to have another pair on Tunkalilla, particularly because of the high number of previous adult losses (suspected mortalities) at this critical site (2017/18 report).
- Maslins Beach territory has been re-occupied by a new pair, RV Orange & unb. The original resident pair NA orange and unb moved from Maslins beach to Ochre Cove in 2014/2015. This territory then remained vacant for four seasons until 2018/19. RV Orange fledged from Carrickalinga Rotunda in February 2016.

Figure 1. Breeding sites on the Southern and South Western Fleurieu Peninsula for the 2018/2019 season.

Figure 2. Breeding sites on the Eastern Fleurieu Peninsula for the 2018/2019 season.

Figure 3. Breeding sites on the Western Fleurieu Peninsula for the 2018/2019 season * *note: Aldinga North is between Aldinga and Snapper Point*

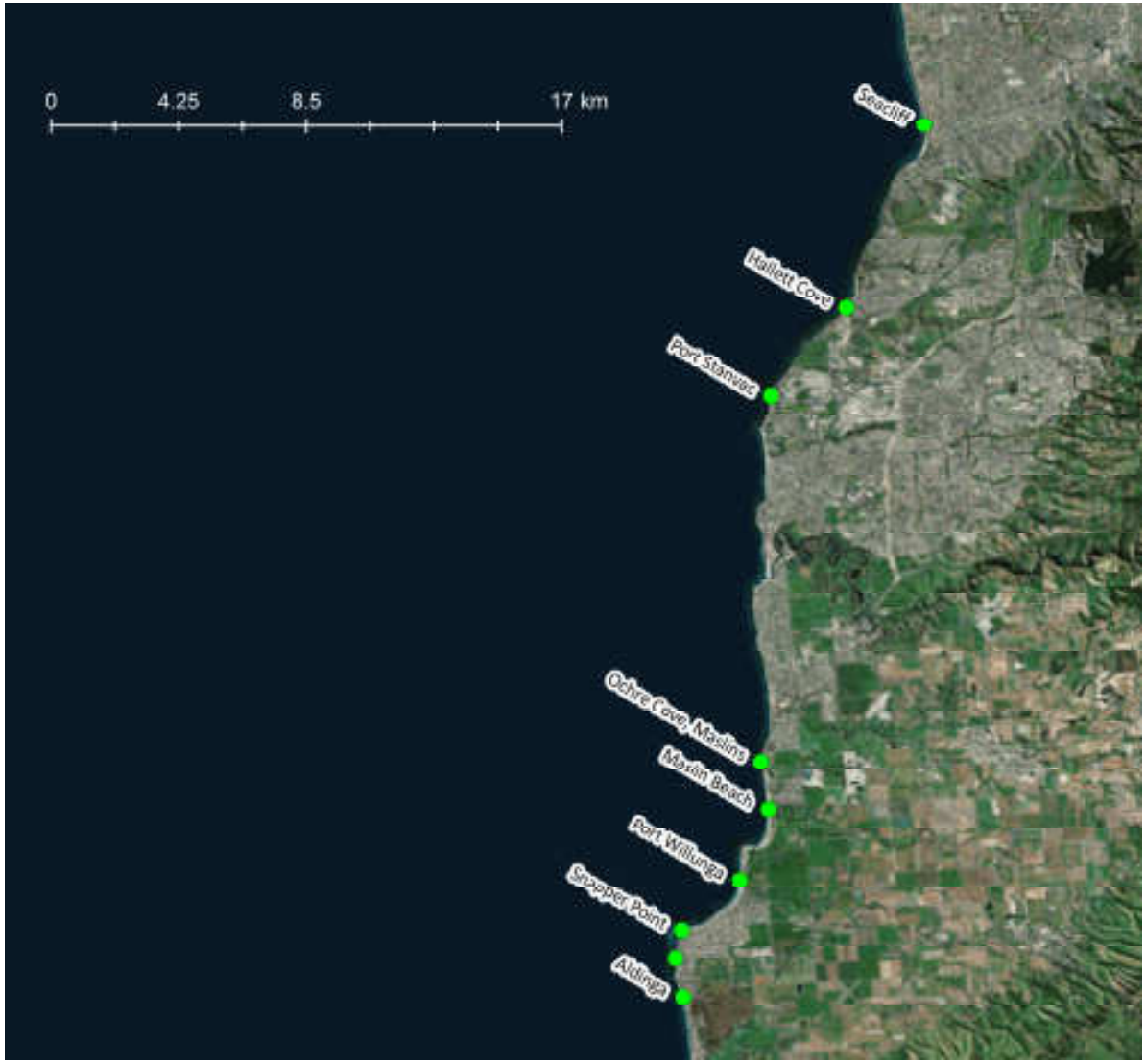

Table 1. Number of portal entries and threat assessments on the Fleurieu Peninsula during the 2018/19 breeding season. Portal entries are the number of entries entered via the online data portal. Full threat assessments includes both the observed number of threats plus print assessments.

Site/Territory	Portal entries	Number Threat assessments	Full threat assessments	% Full threat assessments completed
Bashams Beach	195	121	97	49.7%
Ochre Cove, Maslins	183	179	143	78.1%
Maslin Beach	180	155	94	52.2%
Seacliff	175	107	85	48.6%
Middleton beach	171	107	90	52.6%
Normanville South	157	122	44	28.0%
Yilki	122	83	64	52.5%
Watsons Gap	113	110	102	90.3%
Carrickalinga Rotunda	110	88	60	54.5%
Port Willunga	94	93	93	98.9%
Hallett Cove	84	82	58	69.0%
Shelley Beach (lady bay)	82	69	59	72.0%
Inman River Outlet	76	70	62	81.6%
Victor Central	76	71	56	73.7%
Snapper Point	70	66	54	77.1%
Aldinga Nth (Aldinga Beach Rd)	60	59	56	93.3%
Carrickalinga North	53	46	43	81.1%
Olivers Reef	43	41	35	81.4%
Yankalilla river mouth	43	14	11	25.6%
Aldinga	41	41	39	95.1%
Parsons Beach	39	38	31	79.5%
Myponga Beach	32	5	5	15.6%
Sheepies beach	31	30	26	83.9%
Hindmarsh River Mouth	27	27	25	92.6%
Waitpinga Beach (east)	25	25	22	88.0%
Waitpinga Beach (west)	23	23	19	82.6%
Carrickalinga South	22	14	13	59.1%
Tunkalilla first house east	21	21	20	95.2%
Goolwa beach	19	15	15	78.9%
Tunkalilla Base/mid-West gully	18	18	15	83.3%
Tunkalilla creek/3rd house east	18	18	15	83.3%
Tunkalilla Heysen east	18	18	17	94.4%
Tunkalilla mid-west estuary	18	18	16	88.9%
Tunkalilla shed caravan	18	18	15	83.3%
Carrickalinga Estuary	16	11	8	50.0%
Tunkalilla 1st alcove far east	15	15	15	100.0%
Waitpinga Estuary	15	15	15	100.0%
Tunkalilla far west	14	14	12	85.7%
Tunkalilla western estuary	14	14	11	78.6%
Tunkalilla Tunk Head alcove	12	12	10	83.3%
Moana Beach South	10	10	10	100.0%

Site/Territory	Portal entries	Number Threat assessments	Full threat assessments	% Full threat assessments completed
Normanville North	10	5	2	20.0%
Port Stanvac	10	5	4	40.0%
Lands End	9	3	3	33.3%
Southport	7	7	7	100.0%
Ballaparudda	5	5	5	100.0%
Callawonga	5	5	5	100.0%
Moana Beach	5	5	5	100.0%
Silver Sands	5	5	5	100.0%
Middleton beach unb pair	4	4	4	100.0%
Morgans beach Fleurieu	4	3	3	75.0%
Coolawang	3	2	2	66.7%
Trig point	3	3	3	100.0%
Christies Beach	1	0	0	0.0%
O'Sullivans Beach	1	0	0	0.0%
Total	**2,625**	**2,155**	**1,728**	**65.8%**

In the 2018/19 breeding season there were 86 nesting attempts by 33 breeding pairs on the Fleurieu Peninsula. This was the highest number of nests recorded since monitoring began in 2008/09 and likely relates to the highest number of pairs that have bred on the Fleurieu in a given season (see Table 2).


Photo: Kerri Bartley. PX shading egg at Victor Central

Table 2. Summary of number of breeding pairs, sites monitored for breeding, nests, hatching or failing at egg stage, total number of eggs and chicks observed, and total chicks that fledged on the Fleurieu Peninsula over ten breeding seasons.

Season	# pairs (# sites monitor)	# nests	# nests hatch	# nests fail egg stage	# eggs	# chicks obsv. (% of eggs)	# fledglings (% of chicks)	Fldlg/ Pair
2009/2010	12 (12)	18	9 (50.0%)	9	49	19 (38.8%)	7 (36.8%)	0.58
2010/2011	19 (23)	36	14 (38.9%)	22	83	26 (31.3%)	9 (34.6%)	0.47
2011/2012	14 (26)	24	10 (41.7%)	14	60	22 (36.7%)	8 (36.4%)	0.57
2012/2013	20 (38)	34	11 (32.4%)	23	76	23 (30.3%)	9 (39.1%)	0.45
2013/2014	18 (35)	35	12 (34.3%)	23	84	23 (27.4%)	9 (39.1%)	0.50
2014/2015	20 (44)	46	17 (37.0%)	29	107	32 (29.9%)	10 (31.3%)	0.50
2015/2016	21 (45)	42	26 (61.9%)	16	112	63 (56.3%)	19 (30.2%)	0.90
2016/2017	24 (46)	56	19 (33.9%)	37	141	39 (27.7%)	16 (41.0%)	0.67
2017/2018	27 (47)	59	23 (39.0%)	36	153	52 (34.0%)	18 (34.6%)	0.67
2018/2019	33 (50)	86	22 (25.6%)	64	223	46 (20.6%)	10 (21.7%)	0.30

Ten fledglings were produced in the 2018/2019 breeding season, which is the lowest number of fledglings recorded in the past four breeding seasons (Table 2). It also should be noted that the 2018/19 breeding season had the greatest number of pairs, meaning the low fledgling tally is a valid concern.

A nest had only a 25.6% chance of hatching successfully this season, and chick survival was well below average at 21.7% (average 34.3 ± 1.7%). Low egg and chick survival combined led to the overall low fledging success of the season.

The approximate benchmark for fledgling production to maintain population viability over time is set at 0.40 – 0.50 fledglings per pair per season. In 2018/19, the Fleurieu has had the worst fledgling per pair result since monitoring began, with 0.30 fledglings per pair. In addition to using this as a benchmark to measure success we also want to see variation in the pairs responsible for this fledgling production to maintain genetic variation. Figures 4 to 7 provide a geographic overview of hatched nests, and fledged nests. Table 3 provides a summary of nesting attempts for each pair monitored and Table 5 expands this into more detail about each individual nesting attempt.

The earliest recorded nests were late August. As usual, the Ochre Cove pair started the season off with a nest on the 19th August. Watsons Gap (23rd), Port Willunga (29th) and Seacliff (29th) also had August nests. Three of these early nests failed, but the Seacliff nest managed to hatch, and also fledge one chick from this early nest.

Breeding slowed after January, with the last nests recorded in early February at Tunkalilla East, Tunkalilla Midway and Tunk Head Alcove. Tunkalilla East resulted in one fledgling in late-March, Tunkalilla Midway failed at egg stage in late February, and Tunk Head Alcove managed to produce chicks, but the chicks failed in March. Half of the fledglings produced were confirmed fledged in February/March.

Eight pairs had only one nesting attempt for the entire season (24.2%), where in 2017/2018, only six pairs had one nesting attempt. 15.2% of pairs (5) had two nesting attempts, 24.2% of pairs (8) had three attempts, 12.1% (4 pairs) had four attempts, 6.1% (2 pairs) had five nesting attempts, and three pairs had a record number six nesting attempts (9.1%). The pairs with six nesting attempts were: Yilki, Inman River Outlet and Tunkalilla Midway. Each of these pairs produced a record number of 16 eggs each in one season. Furthermore, the pair at Inman River (RR and unb) also had five nesting attempts, the highest recorded, last season (2017/2018). Over two seasons, RR Orange (and partner) have produced 29 eggs at Inman River Mouth, and only ever hatched one chick. It is sites like these that need to be targeted for remote camera use to determine what the cause of nest failure is and how to best manage the site, as it is at great risk of becoming a 'sink'.

Of the 86 confirmed nests that were monitored, 74.4% (64 nests) failed during the egg stage. It is difficult to determine the causes of fate without using remote cameras, or being present at the exact moment of nest failure, and so many causes of nest failure are recorded as unknown. In 2018/2019, 64.1% of nests (41) failed to unknown causes. However for a number of these nests (n=18), there were prints and evidence around the nest suggesting the following potential causes of failure: 14.6% (6) nests were suspected depredated by avian predators such as raven, magpie, and kestrel, 2.4% (1) suspected dog, 4.9% (2) suspect tide and 2.4% (1) suspect human interference or tide. Another 19.5% (8) were suspected failures to fox depredation, with Maslin Beach and Watsons Gap failures having fox prints leading to the nest site. Ochre Cove had a fox scat on the nest site. A previous study by Mead et al (2012), showed that foxes often investigate nesting sites after a depredation event by a different predator. Similarly, a camera on a nest at Tunkalilla years ago revealed that the pair experienced an extreme heat spell where the eggs ultimately failed and were abandoned – this nest was then visited by a fox days after abandonment. Thus there can be fox prints at the nest, but in fact, in some cases, another predator had already been there first and eaten the eggs

(e.g. a magpie). The remaining 56.1% (23) had no evidence around the nest and failed to an unknown source.

Of the causes of nest failure that could be confirmed, 21.7% (5) were abandoned, 4.3% (1) was observed being predated by ravens (Inman River Outlet), and the remaining 74% (17) nests failed due to tidal inundation. Of all nest failures, known and unknown, tidal inundation caused 26.5% of nest failures.

Photo: David and Sue Thorn; Raven Depredation December at Inman River Outlet

Figure 4: Hatched nests on the Northern Coast of Fleurieu Peninsula during the 2018/19 season.

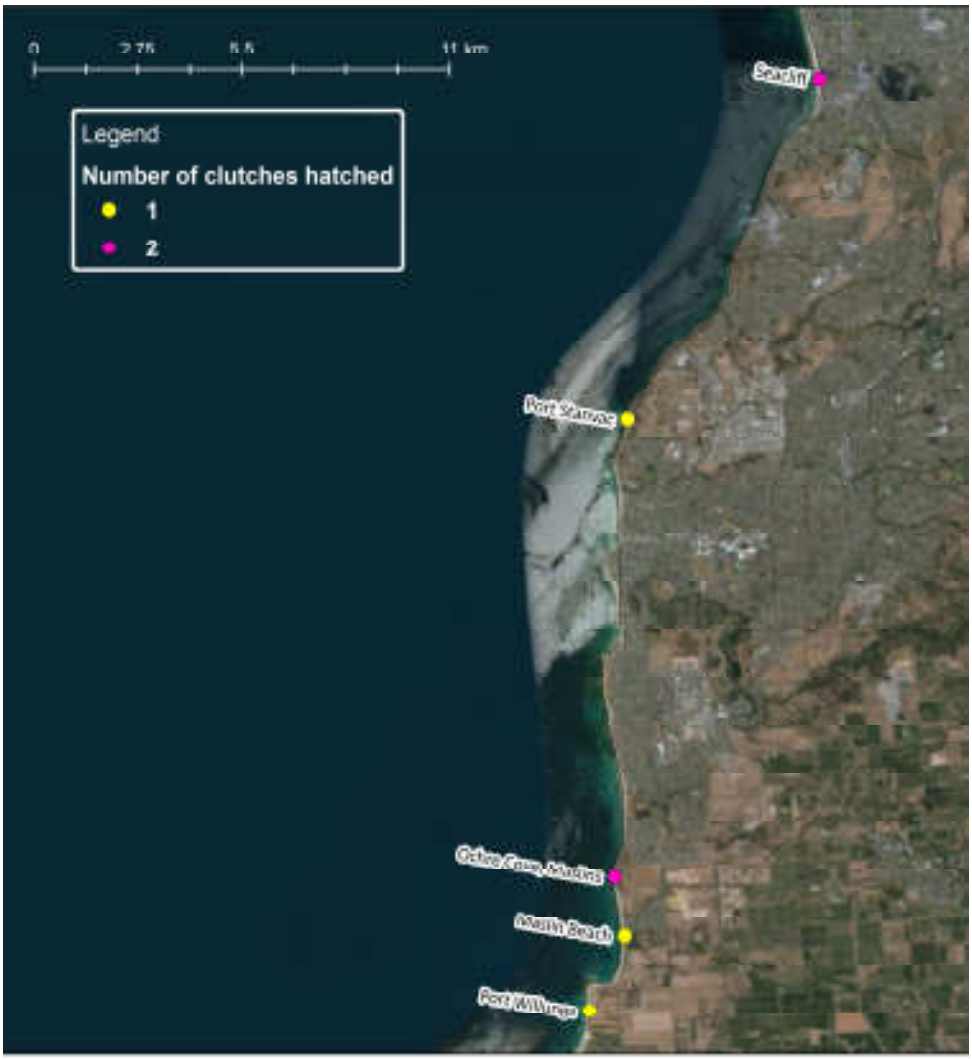

Figure 5: Hatched nests on the Eastern Coast of Fleurieu Peninsula during the 2017/18 season.

Figure 6: Hatched nests on the South and Eastern Coast of Fleurieu Peninsula during the 2018/19 season

Figure 7: Fledged nest sites on the Fleurieu Peninsula during the 2018/19 season

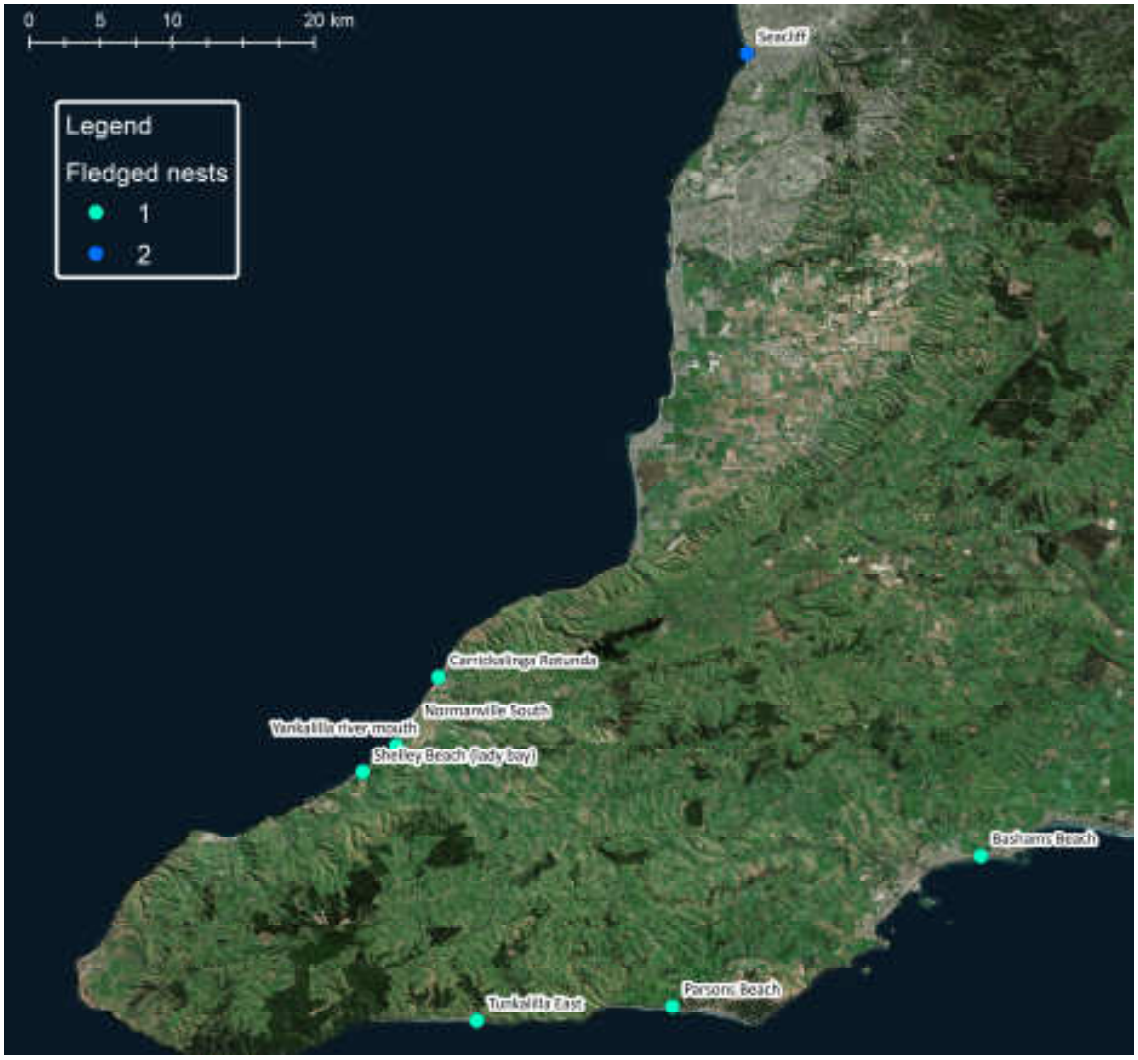

Table 3. Summary of nests, number of nests that failed, hatched and fledged, and total number of eggs, chicks observed and chicks that fledged from each site monitored in the 2018/19 breeding season.

Site	Pair ID	# Nests	# nests fail egg stage	# nests hatch	# nests fledge	# eggs	# chick obsv.	# fledglings
Aldinga	SR & unb	3	3	0	0	9	0	0
Aldinga Nth/Snapper Point	unb & unb	3	3	0	0	8	0	0
Ballaparudda	unb & unb	1	1	0	0	3	0	0
Callawonga	unb & unb	1	1	0	0	3	0	0
Hallett Cove	UV & unb/ unb& unb	3	3	0	0	8	0	0
Bashams Beach	unb & unb	4	3	1	1	8	2	1
Carrickalinga South	SS & unb & unknown	2	2	0	0	4	0	0
Carrickalinga North	PD & unb	3	3	0	0	6	0	0
Carrickalinga Rotunda	LP & unb	3	2	1	1	9	2	1
Lands End	unb & unb	0	0	0	0	0	0	0
Maslin Beach	RV & unb	4	3	1	0	10	2	0
Middleton beach	SA & UE	1	0	1	0	3	3	0
Goolwa beach	unb & unb	0	0	0	0	0	0	0
Normanville South	unb & unb	3	1	2	1	8	3	1
Ochre Cove, Maslins	NA & unb	4	2	2	0	12	6	0
Parsons Beach	EV & unb	1	0	1	1	3	3	2
Port Stanvac	ES & AR	2	1	1	0	6	1	0
Port Willunga	DP & HV	5	4	1	0	9	2	0
Seacliff	XS & unb	2	0	2	2	6	5	2
Sheepies beach	unb & unb	1	0	1	0	2	2	0
Shelley Beach (lady bay)	DT & SB	2	0	2	1	4	4	1
Waitpinga Beach (east)	UA & unb	2	2	0	0	6	0	0
Waitpinga Beach (west)	unb & unb	0	0	0	0	0	0	0
Watsons Gap	BX & unb	5	5	0	0	15	0	0
Yilki	VH & KV	6	5	1	0	16	2	0
Yankalilla river mouth	JZ & unb	1	0	1	1	2	1	1

Site	Pair ID	# Nests	# nests fail egg stage	# nests hatch	# nests fledge	# eggs	# chick obsv.	# fledglings
Inman River Outlet	RR & unb	6	6	0	0	16	0	0
Victor Central	PX & unb	3	1	2	0	9	5	0
Hindmarsh/Olivers	YV & unb	1	1	0	0	1	0	0
Tunkalilla East	YB & unb	4	3	1	1	9	2	1
Tunkalilla Midway	ME & unb	6	6	0	0	16	0	0
Tunk Head alcove	unb & unb	1	0	1	0	3	1	0
Tunkalilla West	EW & unb	3	3	0	0	9	0	0
TOTAL 33 Pairs		**86**	**64**	**22**	**9**	**223**	**46**	**10**

There were 22 nests confirmed as hatched (25.6%), and of these, 9 successfully fledged chicks (40.9% of hatched nests fledged). Of the chicks observed (46 confirmed chicks), 10 fledged (21.7%). There was a fledgling recorded at Port Stanvac, but based on the data entered in the portal, and through conversations with the monitors, we did not have sightings late enough in the chick phase to confirm fledging by the standards used for all other data. A fledgling is a chick that has reached 35 days of age, and can fly well enough to get away from a predator. Chicks often do short, low flights as they approach fledging age. These are classified as "practice flights" and while the birds can fly, they cannot fly for a sustained period, so if they were to be chased by a dog or predator for example, the chick would still be vulnerable to predation as they have not fully fledged. Based on the limited data for the Port Stanvac chick (and no nest was sighted), we cannot accurately estimate the age of the chick, and it was never seen to fly. At best estimate it was around 32-33 days old. While it may have potentially fledged, BirdLife Australia cannot count it as a confirmed fledgling for this season as it would compromise our consistency with analysing the data.

The 10 fledglings produced this season were from nine pairs of Hooded Plovers, with one pair producing fledglings from two separate nesting attempts. The pairs were: Bashams Beach (1 fledgling), Carrickalinga Rotunda (1 fledgling), Normanville South (1 fledgling), Shelley Beach Lady Bay (1 fledgling), Yankalilla River Mouth (1 fledgling), Tunkalilla East (1 fledgling), Parsons Beach (2 fledglings), and Seacliff (2 fledglings: one from two separate nesting attempts). This is repeated success for some pairs, such as Seacliff which also produced a fledgling last season, and YB white and unb who have fledged six birds in three seasons at Tunkalilla East!

Tunkalilla East has been one of the most successful sites, if not the most successful site for fledglings on the Fleurieu Peninsula. Table 4 shows the number of fledglings from Tunkalilla East since season 2012/2013. While the pairs have changed over the years, the site down the eastern end of Tunkalilla, has been a very productive site. It is imperative that access through the locked gate at Tunkalilla be provided to volunteers next season to ensure we can adequately monitor this site due to its conservation significance.

Table 4. Fledglings from Tunkalilla East over seven consecutive seasons.

Season	Number Nests	Number fledge nests	Number Fledglings	Flag ID
2012/13	2	1	1	unb &unb
2013/14	3	1	1	ST orange & unb
2014/15	3	2	4	DK orange & unb
2015/16	1	1	1	DK orange & unb
2016/17	4	1	1	YB white & unb
2017/18	2	2	4	YB white & unb
2018/19	4	1	1	YB white & unb
7 seasons	**19**	**9**	**13**	

Overall an egg had a 4.5% chance of fledgling (10 fledglings from 223 eggs), which is much lower than the 11.8% chance of an egg fledgling from last season (2017/2018). A nest had a 10.5% chance of fledging at least one chick (9 nests out of 64 nests; compared to 18.6% in 2017/2018). Chick survival was lower than ever recorded for the Fleurieu, with only 21.7% of chicks fledging this season, this is compared to 34.6% last season (2017/2018) and 41% of chicks surviving to fledgling during the 2016/2017 season. The latter however being the highest rate of chick survival ever recorded over ten years of monitoring.

The causes of chick failure were predominately unknown (93.8%), but in two cases we were able to observe one chick killed by a magpie and in the other, the chicks were last observed before nightfall and overnight the entire beach was washed away by high tide and the chicks disappeared, presumably drowned. There were additional suspected causes of failure, including kestrels, magpies/ravens and a dog.

One of the three chicks at the Seacliff nest in September was observed being predated by a magpie. The Volunteer observed the adults doing broken wing display towards a

juvenile magpie, which had something in its beak as it flew into the dunes. The adult pair of Hooded Plovers managed to lead the magpie away and eventually the magpie left the area, with the adult Hooded Plovers flying after it. The chick body was located in the dunes and collected (under BirdLife Australia's instruction) and was to be donated to the South Australian Museum. The other two chicks in this clutch were not harmed, with one of the chicks fledging.

At Middleton Beach, the chicks were lost to tide, where the entire beach and foredune was washed away overnight, leaving a one metre cliff on the beach the next morning. There were no signs of the chicks, as there was no beach for the chicks to hide and escape from the tidal inundation.

In one case where a chick disappeared at Shelley Beach (Lady Bay), this was timed with the disappearance of the parent bird. In February, SB Orange went missing when its chick was four weeks old. This is not typical behaviour and we suspect SB Orange has died. The remaining adult, DT White, continued to care for the chick for another five days. After this, DT White was seen with an unbanded adult and two days after the unbanded adult was seen with DT White, the chick went missing at 29 day old. SB Orange has still not been sighted since the 8th February, 2019.

While Tunkalilla East has been successful in producing fledglings, the birds have experienced close calls with predators during the season. On one occasion, a pair of magpies flew in and attacked the Hooded Plover pair and their chicks. The Hoodies attempted to chase the magpies, but as the Hoodies turned back to protect their chicks, one of the adults was grabbed by a magpie mid-air. The hoodie was brought to the ground and set upon by three magpies. The adult hoodie was on its back with feet in the air, and volunteer, Rob Brinsley ran towards the birds, causing the magpies to fly and potentially saving the adult from further harassment or injury. With the adult hoodie (YB White), still on its back, the worst was feared as YB White was not moving. Luckily, YB White flew out to sea strongly, and landed back on the beach, not appearing to have any injuries. The adults and chicks reunited and one of these chicks went on to fledge.

Table 5. Detailed summary of nest progress for each site according to data entered in the MyBeachBird data portal and sent to BirdLife Australia for the 2018/19 breeding season. * denotes where an egg/nest number is assumed.

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Aldinga	18/09/2018	Nest (with eggs)	1	3		SR (Orange) & unb
Aldinga	28/09/2018	Failed since last visit (unknown)	1			SR (Orange) & unb
Aldinga	5/10/2018	Nest (with eggs)	2	1		SR (Orange) & unb
Aldinga	8/10/2018	Second egg confirmed	2	2		SR (Orange) & unb
Aldinga	9/10/2018	Third egg confirmed	2	3		SR (Orange) & unb
Aldinga	11/10/2018	Failed since last visit (unknown)	2			SR (Orange) & unb
Aldinga	21/10/2018	Nest (with eggs)	3	1		SR (Orange) & unb
Aldinga	22/10/2018	Second egg confirmed	3	2		SR (Orange) & unb
Aldinga	24/10/2018	Third egg confirmed	3	3		SR (Orange) & unb
Aldinga	26/10/2018	Failed since last visit (unknown)	3			SR (Orange) & unb
Aldinga	31/10/2018	Scrape (no eggs)				SR (Orange) & unb
Aldinga	3/11/2018	Scrape (no eggs)				SR (Orange) & unb
Aldinga	4/11/2018	Scrape (no eggs)				SR (Orange) & unb
Aldinga	9/11/2018	Scrape (no eggs)				SR (Orange) & unb
Aldinga	12/11/2018	Scrape (no eggs)				SR (Orange) & unb
Aldinga Nth/Snapper Point	8/09/2018	Nest (with eggs)	1	3		unb & unb
Aldinga Nth/Snapper Point	16/09/2018	Failed since last visit (tide)	1			unb & unb
Snapper Point/Aldinga Nth	1/10/2018	Nest (with eggs)	2	3		unb & unb
Snapper Point/Aldinga Nth	21/10/2018	Suspect chicks	2			unb & unb
Snapper Point/Aldinga Nth	21/10/2018	Nest (with eggs)	2			unb & unb
Snapper Point/Aldinga Nth	22/10/2018	Failed since last visit (unknown)	2			unb & unb
Snapper Point/Aldinga Nth	4/11/2018	Suspect nest				unb & unb
Snapper Point/Aldinga Nth	5/11/2018	Nest (with eggs)	3	2		unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Snapper Point/Aldinga Nth	17/11/2018	Failed since last visit (unknown)	3			unb & unb
Aldinga Nth/Snapper Point	5/01/2019	Suspect nest				unb & unb
Ballaparudda	20/10/2018	Scrape (no eggs)				unb & unb
Ballaparudda	30/10/2018	Scrape (no eggs)				unb & unb
Ballaparudda	20/11/2018	Nest (with eggs)	2	3		unb & unb
Ballaparudda		*assume nest failed*				unb & unb
Ballaparudda	4/12/2018	Scrape (no eggs)				unb & unb
Ballaparudda	21/12/2018	Scrape (no eggs)				unb & unb
Bashams Beach	4/09/2018	Nest (with eggs)	1	1		unb & unb
Bashams Beach	5/09/2018	Suspect nest (mating)	1			unb & unb
Bashams Beach	10/09/2018	Failed since last visit (unknown; suspect avian)	1			unb & unb
Bashams Beach	19/09/2018	Nest (with eggs)	2	1		unb & unb
Bashams Beach	21/09/2018	Second egg confirmed	2	2		unb & unb
Bashams Beach	8/10/2018	Third egg confirmed	2	3		unb & unb
Bashams Beach	22/10/2018	No birds sighted	2			unb & unb
Bashams Beach	22/10/2018	Chicks sighted	2		2	unb & unb
Bashams Beach	12/11/2018	One chick failed (unknown)	2		1	unb & unb
Bashams Beach	26/11/2018	Fledged	2		1	unb & unb
Bashams Beach	10/12/2018	Nest (with eggs)	3	1		unb & unb
Bashams Beach	14/12/2018	Failed since last visit (tide)	3			unb & unb
Bashams Beach	26/12/2018	Nest found	4	2		unb & unb
Bashams Beach	27/12/2018	Third egg confirmed	4	3		unb & unb
Bashams Beach	28/01/2019	Failed since last visit (Abandoned: suspect eggs failed due to extreme heat. *multiple visits were made after this to ensure that they had indeed failed.*)	4			unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Callawonga	30/10/2018	Nest (with eggs)		3		unb & unb
Callawonga	20/11/2018	Failed since last visit (unknown)				unb & unb
Callawonga	4/12/2018	Scrape (no eggs)				unb & unb
Carrickalinga Estuary	4/12/2018	Scrape (no eggs) - unsuccessful attempt to mate				
Carrickalinga North	7/09/2018	Nest (with eggs)	1	1		PD (Orange) & unb
Carrickalinga North	9/09/2018	Failed since last visit (unknown)	1			PD (Orange) & unb
Carrickalinga North	22/09/2018	Nest (with eggs)	2	3		PD (Orange) & unb
Carrickalinga North	6/10/2018	Failed since last visit (unknown)	2			PD (Orange) & unb
Carrickalinga North	12/10/2018	Suspect nest				PD (Orange) & unb
Carrickalinga North	12/10/2018	Nest (with eggs)	3	1		PD (Orange) & unb
Carrickalinga North	16/10/2018	Second egg confirmed	3	2		PD (Orange) & unb
Carrickalinga North	18/10/2018	Failed since last visit (unknown: suspect tide)	3			PD (Orange) & unb
Carrickalinga Rotunda	29/09/2018	Suspect nest				LP (Orange) unb
Carrickalinga Rotunda	2/10/2018	Nest (with eggs)	1	2		LP (Orange) unb
Carrickalinga Rotunda	12/10/2018	Third egg confirmed	1	3		LP (Orange) unb
Carrickalinga Rotunda	22/10/2018	Failed since last visit (unknown; avian prints above nest site)	1			LP (Orange) unb
Carrickalinga Rotunda	5/11/2018	Suspect nest	2			LP (Orange) unb
Carrickalinga Rotunda	6/11/2018	Nest (with eggs)	2	3		LP (Orange) unb
Carrickalinga Rotunda	22/11/2018	Failed since last visit (tide)	2			
Carrickalinga Rotunda	7/12/2018	Nest (with eggs)	3	2		LP (Orange) unb
Carrickalinga Rotunda	16/12/2018	Third egg confirmed	3	3		LP (Orange) unb
Carrickalinga Rotunda	5/01/2019	Chicks sighted	3		2	LP (Orange) unb
Carrickalinga Rotunda	3/02/2019	One chick failed (unknown)	3		1	LP (Orange) unb
Carrickalinga Rotunda	15/02/2019	Confirmed Fledged	3		1	LP (Orange) unb
Carrickalinga South	30/10/2018	Scrape (no eggs)				Unknown
Carrickalinga South	4/12/2018	Nest (with eggs)	1	2		SS & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Carrickalinga South	5/12/2018	Third egg confirmed	unsure	3		SS & unb
Carrickalinga South	7/12/2018	Failed since last visit (Unknown; suspect raven)				
Carrickalinga South	22/01/2019	Nest (with eggs)	unsure	1		Unknown
Carrickalinga South	23/01/2019	Failed since last visit (unknown)				Unknown
Christies Beach		No birds sighted (1 visit)				
Coolawang		No birds sighted (3 visits)				
Deep Creek CP Blowhole beach		Not visited				
Goolwa beach		Birds sighted, not used for nesting				
Hallett Cove	7/09/2018	Scrape (no eggs)				UV (Orange) & unb
Hallett Cove	22/09/2018	Nest (with eggs)	1	1		UV (Orange) & unb
Hallett Cove	29/09/2018	Second egg confirmed	1	2		UV (Orange) & unb
Hallett Cove	3/10/2018	birds not sighted incubating. Birds in a location they've not been sighted before.	1	2		UV (Orange) & unb
Hallett Cove	5/10/2018	No birds sighted	1	2		UV (Orange) & unb
Hallett Cove	9/10/2018	Birds 100m from nest, don't appear interested in it.	1			Last day UV (Orange) sighted
Hallett Cove	12/10/2018	Confirmed failed (abandoned). X2 unb birds on site. UV not sighted	2			unb & unb
Hallett Cove	19/10/2018	Scrape (no eggs)	2			unb & unb
Hallett Cove	28/10/2018	Birds seen mating	2			unb & unb
Hallett Cove	8/11/2018	Suspect nest	2			unb & unb
Hallett Cove	12/11/2018	Nest (with eggs)	2	3		unb & unb
Hallett Cove	22/11/2018	Eggs washed out by tide, 1 egg damaged, 1 not found, 1 survived	2	1		unb & unb
Hallett Cove	23/11/2018	Failed since last visit (tide)	2			unb & unb
Hallett Cove	23/12/2018	Suspect nest	3			unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Hallett Cove	27/12/2018	Nest (with eggs)	3	3		unb & unb
Hallett Cove	9/01/2019	Failed since last visit (unknown)	3			unb & unb
Inman River Outlet	22/09/2018	Nest (with eggs)	1	3		RR (Orange) & unb
Inman River Outlet	30/09/2018	Failed since last visit (suspect fox)	1			RR (Orange) & unb
Inman River Outlet	8/10/2018	Scrape (no eggs)				RR (Orange) & unb
Inman River Outlet	11/10/2018	Nest (with eggs)	2	1		RR (Orange) & unb
Inman River Outlet	12/10/2018	Second egg confirmed	2	2		RR (Orange) & unb
Inman River Outlet	15/10/2018	Third egg confirmed	2	3		RR (Orange) & unb
Inman River Outlet	3/11/2018	Failed since last visit (unknown: suspect raven)	2			RR (Orange) & unb
Inman River Outlet	12/11/2018	Nest (with eggs)	3	1		RR (Orange) & unb
Inman River Outlet	13/11/2018	Second egg confirmed at 7:30am	3	2		RR (Orange) & unb
Inman River Outlet	13/11/2018	Two eggs failed at 3:30pm. (unknown: suspect raven)	3			RR (Orange) & unb
Inman River Outlet	14/11/2018	Scrape (no eggs)	3			RR (Orange) & unb
Inman River Outlet	15/11/2018	Nest found. This is the third egg from clutch #2	3	1		RR (Orange) & unb
Inman River Outlet	22/11/2018	Failed since last visit (tide)	3			RR (Orange) & unb
Inman River Outlet	4/12/2018	Nest (with eggs)	4	3		RR (Orange) & unb
Inman River Outlet	7/12/2018	Eggs present in the AM	4			RR (Orange) & unb
Inman River Outlet	7/12/2018	Failed in the PM (ravens Confirmed; seen predating eggs)	4			RR (Orange) & unb
Inman River Outlet	11/12/2018	Scrape (no eggs)				RR (Orange) & unb
Inman River Outlet	20/12/2018	Nest (with eggs)	5	2		RR (Orange) & unb
Inman River Outlet	28/12/2018	Failed since last visit (suspect magpie)	5			RR (Orange) & unb
Inman River Outlet	2/01/2019	Scrape (no eggs)				RR (Orange) & unb
Inman River Outlet	4/01/2019	Nest (with eggs)	6	1		RR (Orange) & unb
Inman River Outlet	6/01/2019	Second egg confirmed	6	2		RR (Orange) & unb
Inman River Outlet	8/01/2019	Failed since last visit (tide)	6			RR (Orange) & unb
Inman River Outlet	14/01/2019	Scrape (no eggs)				RR (Orange) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Inman River Outlet	15/01/2019	Scrape (no eggs)				RR (Orange) & unb
Lands End	16/11/2018	Suspect nest, distraction displays				
Maslin Beach	12/09/2018	Scrape (no eggs)				RV (Orange) & unb
Maslin Beach	1/10/2018	Nest (with eggs)	1	1		RV (Orange) & unb
Maslin Beach	15/10/2018	Failed since last visit (Unknown: suspect fox, prints through nest site)	1			RV (Orange) & unb
Maslin Beach	25/10/2018	Nest (with eggs)	2	1		RV (Orange) & unb
Maslin Beach	26/10/2018	Second egg confirmed	2	2		RV (Orange) & unb
Maslin Beach	8/11/2018	Third egg confirmed	2	3		RV (Orange) & unb
Maslin Beach	22/11/2018	Failed since last visit (tide)	2			RV (Orange) & unb
Maslin Beach	9/12/2018	Nest (with eggs)	3	3		RV (Orange) & unb
Maslin Beach	17/12/2018	Failed since last visit (unknown)	3			RV (Orange) & unb
Maslin Beach	28/12/2018	Nest found; two eggs assumed	4	3*		RV (Orange) & unb
Maslin Beach	25/01/2019	One chick sighted	4		1	RV (Orange) & unb
Maslin Beach	26/01/2019	Second chick sighted	4		2	RV (Orange) & unb
Maslin Beach	29/01/2019	Suspect chicks failed	4			RV (Orange) & unb
Maslin Beach	30/01/2019	No birds sighted	4			RV (Orange) & unb
Maslin Beach	30/01/2019	Confirmed chick failed (unknown)	4			RV (Orange) & unb
Middleton beach	2/10/2018	Scrape (no eggs)				SA (Orange) & UE (Orange)
Middleton beach	2/10/2018	First egg laid 3 hours after scrape found	1	1		SA (Orange) & UE (Orange)
Middleton beach	3/10/2018	Second egg confirmed	1	2		SA (Orange) & UE (Orange)
Middleton beach	6/10/2018	Third egg confirmed	1	3		SA (Orange) & UE (Orange)
Middleton beach	4/11/2018	Chicks sighted	1		3	SA (Orange) & UE (Orange)
Middleton beach	7/11/2018	One chick failed (unknown)	1		2	SA (Orange) & UE (Orange)
Middleton beach	16/11/2018	Adult SA Orange seaweed around leg, rescued. Flag removed as precaution.	1			UE (Orange) & metal only

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Middleton beach	22/11/2018	Chicks failed (tide; foredune washed away, leaving a 1m cliff on the beach)	1			UE (Orange) & metal only
Middleton beach unb pair	24/11/2018	Scrape (no eggs)				
Moana Beach		No birds sighted for 5 visits				
Moana Beach South		Single bird seen twice in 10 visits				
Morgans beach north		Not visited				
Morgans beach Fleurieu		No birds sighted for 4 visits				
Myponga Beach		Birds seen 3 times in 32 visits.				
Normanville North	11/11/2018	Unknown pair with scrape. Variable numbers of birds seen				
Normanville South	4/09/2018	Nest (with eggs)	1	2		unb & unb
Normanville South	6/09/2018	Third egg confirmed	1	3		unb & unb
Normanville South	17/09/2018	Failed since last visit (tide; egg found broken in seaweed near water's edge)	1			unb & unb
Normanville South	27/09/2018	Nest (with eggs)	2	1		unb & unb
Normanville South	29/09/2018	Second egg confirmed	2	2		unb & unb
Normanville South	30/09/2018	Third egg confirmed	2	3		unb & unb
Normanville South	29/10/2018	Chick sighted	2		1	unb & unb
Normanville South	8/11/2018	Chick failed (unknown)	2			unb & unb
Normanville South	5/12/2018	Suspect nest				unb & unb
Normanville South	5/12/2018	Nest (with eggs)	3	1		unb & unb
Normanville South	10/12/2018	Second egg confirmed	3	2		unb & unb
Normanville South	4/01/2019	Chick sighted	3		1	unb & unb
Normanville South	5/01/2019	Chicks sighted second chick confirmed	3		2	unb & unb
Normanville South	10/01/2019	One chick failed (unknown)	3		1	unb & unb
Normanville South	2/02/2019	Fledged	3		1	unb & unb
O'Sullivans Beach		No birds sighted, only one visit				

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Ochre Cove, Maslins	10/08/2018	Scrape (no eggs)				NA (Orange) & unb
Ochre Cove, Maslins	17/08/2018	Scrape (no eggs)				NA (Orange) & unb
Ochre Cove, Maslins	19/08/2018	Nest (with eggs)	1	1		NA (Orange) & unb
Ochre Cove, Maslins	20/08/2018	Second egg confirmed	1	2		NA (Orange) & unb
Ochre Cove, Maslins	24/08/2018	Third egg confirmed	1	3		NA (Orange) & unb
Ochre Cove, Maslins	16/09/2018	Failed since last visit (unknown: temporary fence had been stolen, and evidence of high tide)	1			NA (Orange) & unb
Ochre Cove, Maslins	1/10/2018	Nest (with eggs)	2	3		NA (Orange) & unb
Ochre Cove, Maslins	12/10/2018	Failed since last visit (suspect fox; fox scat on nest site)	2			NA (Orange) & unb
Ochre Cove, Maslins	19/10/2018	Nest (with eggs)	3	1		NA (Orange) & unb
Ochre Cove, Maslins	22/10/2018	Second egg confirmed	3	2		NA (Orange) & unb
Ochre Cove, Maslins	24/10/2018	Third egg confirmed	3	3		NA (Orange) & unb
Ochre Cove, Maslins	19/11/2018	Chicks sighted	3		2	NA (Orange) & unb
Ochre Cove, Maslins	20/11/2018	Third chick sighted	3		3	NA (Orange) & unb
Ochre Cove, Maslins	23/11/2018	One chick failed; (Unknown; 2 left kestrel hovering and swooping within fenced area)	3		2	NA (Orange) & unb
Ochre Cove, Maslins	25/11/2018	Second chick failed	3		1	NA (Orange) & unb
Ochre Cove, Maslins	28/11/2018	Third chick failed (Unknown; 500+ silver gulls on beach, nankeen kestrel present)	3			NA (Orange) & unb
Ochre Cove, Maslins	22/12/2018	Nest (with eggs)	4	3		NA (Orange) & unb
Ochre Cove, Maslins	9/01/2019	Chick sighted	4		1	NA (Orange) & unb
Ochre Cove, Maslins	9/01/2019	Chicks sighted third chick confirmed	4		3	NA (Orange) & unb
Ochre Cove, Maslins	22/01/2019	Two chicks failed overnight (unknown)	4		1	NA (Orange) & unb
Ochre Cove, Maslins	25/01/2019	Third chick failed (Unknown)	4			NA (Orange) & unb
Hindmarsh River Mouth	13/11/2018	Scrape (no eggs)				YV (White) & unb
Olivers Reef	18/11/2018	Nest (with eggs)			1	YV (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Olivers Reef	19/11/2018	No hoodies near nest				YV (White) & unb
Olivers Reef	20/11/2018	One adult near nest				YV (White) & unb
Olivers Reef	20/11/2018	Suspect abandoned				YV (White) & unb
Olivers Reef	22/11/2018	Failed since last visit (eggs taken by tide, but suspect abandoned prior to tide)				YV (White) & unb
Parsons Beach	11/10/2018	Nest (with eggs)	1	3		EV (Orange) & unb
Parsons Beach	8/11/2018	Chicks sighted	1		2	EV (Orange) & unb
Parsons Beach	9/11/2018	Third chick confirmed	1		3	EV (Orange) & unb
Parsons Beach	25/11/2018	One chick failed (unknown)	1		2	EV (Orange) & unb
Parsons Beach	15/12/2018	Fledged	1		2	EV (Orange) & unb
Port Stanvac	9/11/2018	Nest (with eggs)	1	3		ES (White) & AR (Orange)
Port Stanvac	22/11/2018	Failed since last visit (tide)	1			ES (White) & AR (Orange)
Port Stanvac	7/02/2019	Chicks sighted	2	3*	1	ES (White) & AR (Orange)
Port Stanvac	5/03/2019	Last sighting of chick at location which can only be reached by small flight.	2			ES (White) & AR (Orange)
Port Willunga	29/08/2018	Nest (with eggs)	1	2		DP (Orange) & HV (Orange)
Port Willunga	16/09/2018	Failed since last visit (tide; fence was also washed away)	1			DP (Orange) & HV (Orange)
Port Willunga	26/09/2018	Nest (with eggs)	2	1		DP (Orange) & HV (Orange)
Port Willunga	29/09/2018	Second egg confirmed	2	2		DP (Orange) & HV (Orange)
Port Willunga	6/10/2018	Failed since last visit (kestrel prints all over scrape/nest site)	2			DP (Orange) & HV (Orange)
Port Willunga	11/10/2018	Scrape (no eggs)				DP (Orange) & HV (Orange)
Port Willunga	23/10/2018	Nest (with eggs)	3	2		DP (Orange) & HV (Orange)
Port Willunga	11/11/2018	No birds sighted/suspect failed	3			DP (Orange) & HV (Orange)
Port Willunga	12/11/2018	Failed since last visit (unknown; human prints within fenced area)	3			DP (Orange) & HV (Orange)
Port Willunga	25/11/2018	Nest (with eggs)	4	1		DP (Orange) & HV (Orange)

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Port Willunga	30/11/2018	Adults last seen incubating on this day	4			DP (Orange) & HV (Orange)
Port Willunga	1/12/2018	Possible abandonment	4			DP (Orange) & HV (Orange)
Port Willunga	3/12/2018	Failed since last visit. 1 egg abandoned.	4			DP (Orange) & HV (Orange)
Port Willunga	3/12/2018	Scrape 50m from abandoned egg				DP (Orange) & HV (Orange)
Port Willunga	5/12/2018	Nest (with eggs)	5	2		DP (Orange) & HV (Orange)
Port Willunga	2/01/2019	Chicks sighted	5		2	DP (Orange) & HV (Orange)
Port Willunga	5/01/2019	Failed since last visit (unknown)	5			DP (Orange) & HV (Orange)
Port Willunga	26/01/2019	Suspect nest (mating)				DP (Orange) & HV (Orange)
Port Willunga	27/01/2019	Scrape (no eggs)				DP (Orange) & HV (Orange)
Port Willunga	29/01/2019	Suspect nest				DP (Orange) & HV (Orange)
Port Willunga	31/01/2019	Suspect nest				DP (Orange) & HV (Orange)
Seacliff	29/08/2018	Nest (with eggs)	1	3		XS (White) & unb
Seacliff	22/09/2018	Chicks sighted	1		2	XS (White) & unb
Seacliff	23/09/2018	Third chick confirmed	1		3	XS (White) & unb
Seacliff	25/09/2018	One chick failed (observed magpie predation)	1		2	XS (White) & unb
Seacliff	29/09/2018	One chick failed (unknown)	1		1	XS (White) & unb
Seacliff	31/10/2018	Fledged	1		1	XS (White) & unb
Seacliff	26/11/2018	Scrape (no eggs)				XS (White) & unb
Seacliff	30/11/2018	Nest (with eggs)	2	1		XS (White) & unb
Seacliff	12/12/2018	Third egg confirmed	2	3		XS (White) & unb
Seacliff	13/12/2018	Nest recorded as failed due to tide.	2			XS (White) & unb
Seacliff	16/12/2018	Nest still active, survived the tide	2			XS (White) & unb
Seacliff	26/12/2018	One egg failed (unknown)	2	2		XS (White) & unb
Seacliff	1/01/2019	Chicks sighted	2		2	XS (White) & unb
Seacliff	20/01/2019	One chick failed (unknown)	2		1	XS (White) & unb
Seacliff	8/02/2019	Fledged	2		1	XS (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Semaphore South, south of Bower rd		Juvenile on territory only				
Sheepies beach	11/10/2018	Nest (with eggs)	1	2		unb & unb
Sheepies beach	13/11/2018	Chicks sighted	1		2	unb & unb
Sheepies beach	20/11/2018	One chick failed (unknown)	1		1	unb & unb
Sheepies beach	5/12/2018	Suspect chicks failed	1			unb & unb
Sheepies beach	7/12/2018	Chick failed (unknown)	1			unb & unb
Sheepies beach	25/12/2018	Scrape (no eggs)				unb & unb
Shelley Beach (lady bay)	2/10/2018	Nest (with eggs)	1	2		DT (White) & SB (Orange)
Shelley Beach (lady bay)	26/10/2018	No birds sighted	1			DT (White) & SB (Orange)
Shelley Beach (lady bay)	27/10/2018	Chicks sighted	1		2	DT (White) & SB (Orange)
Shelley Beach (lady bay)	5/11/2018	Suspect chicks failed	1			DT (White) & SB (Orange)
Shelley Beach (lady bay)	6/11/2018	Chicks sighted	1			DT (White) & SB (Orange)
Shelley Beach (lady bay)	11/11/2018	One chick failed (unknown)	1		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	13/11/2018	No birds sighted	1			DT (White) & SB (Orange)
Shelley Beach (lady bay)	14/11/2018	Suspect chicks failed	1			DT (White) & SB (Orange)
Shelley Beach (lady bay)	16/11/2018	Chick sighted	1		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	1/12/2018	Chicks sighted. Due to fledge today	1		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	4/12/2018	Chick confirmed fledged, flew 100m	1		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	24/12/2018	Nest (with eggs)	2	2		DT (White) & SB (Orange)
Shelley Beach (lady bay)	20/01/2019	Chick sighted	2		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	21/01/2019	Second chick confirmed	2		2	DT (White) & SB (Orange)
Shelley Beach (lady bay)	29/01/2019	One chick failed (unknown)	2		1	DT (White) & SB (Orange)
Shelley Beach (lady bay)	8/02/2019	Last sighting of SB. Chick and DT still on territory	2			DT (White) & SB (Orange)
Shelley Beach (lady bay)	12/02/2019	DT still with chick	2			DT (White) & unb
Shelley Beach (lady bay)	17/02/2019	DT with unb adult. Chick sighted	2			DT (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Shelley Beach (lady bay)	18/02/2019	DT with unb adult. Chick sighted	2			DT (White) & unb
Shelley Beach (lady bay)	18/02/2019	Chick failed (unknown). DT & unb adult on territory	2			DT (White) & unb
Silver Sands		No birds sighted, 5 visits				
Southport		No birds sighted, 7 visits				
Trig point		No birds sighted, 3 visits				
Tunkalilla Base/mid-West gully		One bird seen in 18 sightings				
Tunkalilla East	24/10/2018	Nest (with eggs)	1	1		YB (White) & unb
Tunkalilla East	6/11/2018	Failed since last visit (suspect fox)	1			YB (White) & unb
Tunkalilla East	16/11/2018	Nest (with eggs)	2	3		YB (White) & unb
Tunkalilla East	4/12/2018	Failed since last visit (suspect tide)	2			YB (White) & unb
Tunkalilla East	12/12/2018	Scrape (no eggs)				YB (White) & unb
Tunkalilla East	4/01/2019	Nest (with eggs)	3	2		YB (White) & unb
Tunkalilla East	1/02/2019	Failed since last visit (unknown)	3			YB (White) & unb
Tunkalilla East	6/02/2019	Birds sighted (had a nest, which wasn't found at this time)	4	3*		YB (White) & unb
Tunkalilla East	19/02/2019	Chicks sighted	4		2	YB (White) & unb
Tunkalilla East	27/02/2019	Family attacked by x3 magpies, one adult on its back being attacked. Adult and chicks survived.	4			YB (White) & unb
Tunkalilla East	13/03/2019	One chick failed (unknown)	4		1	YB (White) & unb
Tunkalilla East	26/03/2019	Fledged	4		1	YB (White) & unb
Tunk Head alcove	1/02/2019	Nest (with eggs)	1	3		unb & unb
Tunk Head alcove	6/02/2019	One egg failed (unknown)	1	2		unb & unb
Tunk Head alcove	13/02/2019	Chick sighted	1		1	unb & unb
Tunk Head alcove	13/03/2019	Suspect chicks failed	1			unb & unb
Tunk Head alcove	26/03/2019	Failed since last visit (unknown)	1			unb & unb
Tunkalilla Midway	16/10/2018	Scrape (no eggs)				ME (Orange) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Tunkalilla Midway	24/10/2018	Nest (with eggs)	1	2		ME (Orange) & unb
Tunkalilla Midway	6/11/2018	Failed since last visit (tide)	1			ME (Orange) & unb
Tunkalilla Midway	16/11/2018	Nest (with eggs)	2	3		ME (Orange) & unb
Tunkalilla Midway	4/12/2018	Failed since last visit (unknown)	2			ME (Orange) & unb
Tunkalilla Midway	4/12/2018	Nest (with eggs)	3	**3***		ME (Orange) & unb
Tunkalilla Midway	12/12/2018	Failed since last visit (unknown)	3			ME (Orange) & unb
Tunkalilla Midway	12/12/2018	Nest (with eggs)	4	2		ME (Orange) & unb
Tunkalilla Midway	21/12/2018	Failed since last visit (unknown)	4			ME (Orange) & unb
Tunkalilla Midway	4/01/2019	Nest (with eggs)	5	3		ME (Orange) & unb
Tunkalilla Midway	1/02/2019	Failed since last visit (unknown)	5			ME (Orange) & unb
Tunkalilla Midway	2/02/2019	Nest (with eggs)	6	3		ME (Orange) & unb
Tunkalilla Midway	19/02/2019	Failed since last visit (unknown)	6			ME (Orange) & unb
Tunkalilla mid-west estuary		Two sightings of x2 birds from 18 sightings				
Tunkalilla West	25/09/2018	Nest (with eggs)	1	3		EW (Orange) & unb
Tunkalilla West	16/10/2018	Failed since last visit (unknown)	1			EW (Orange) & unb
Tunkalilla West	24/10/2018	Scrape (no eggs)				EW (Orange) & unb
Tunkalilla West	6/11/2018	Nest (with eggs)	2	3		EW (Orange) & unb
Tunkalilla West	16/11/2018	Failed since last visit. Suspect that 1 egg was saved	2			EW (Orange) & unb
Tunkalilla West	16/11/2018	Nest (with eggs) - suspect this is the same nest as above, and 1 egg was reclaimed from the tide	2	1		EW (Orange) & unb
Tunkalilla West	4/12/2018	Failed since last visit (unknown)	2			EW (Orange) & unb
Tunkalilla West	4/12/2018	Nest (with eggs)	3	3		EW (Orange) & unb
Tunkalilla West	21/12/2018	Failed since last visit (tide)	3			EW (Orange) & unb
Victor Central	2/09/2018	Nest (with eggs)	1	3		PX (White) & unb
Victor Central	15/09/2018	Failed since last visit (tide)	1			PX (White) & unb
Victor Central	26/09/2018	Nest (with eggs)	2	1		PX (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Victor Central	27/09/2018	Second egg confirmed	2	2		PX (White) & unb
Victor Central	30/09/2018	Third egg confirmed	2	3		PX (White) & unb
Victor Central	27/10/2018	Suspect chicks	2			PX (White) & unb
Victor Central	27/10/2018	Chicks sighted	2		3	PX (White) & unb
Victor Central	3/11/2018	One chick failed (Unknown)	2		2	PX (White) & unb
Victor Central	14/11/2018	Second chick failed (unknown: suspect dog/raven)	2		1	PX (White) & unb
Victor Central	15/11/2018	Suspect chick failed	2			PX (White) & unb
Victor Central	16/11/2018	Chick sighted	2		1	PX (White) & unb
Victor Central	17/11/2018	Suspect chicks failed				PX (White) & unb
Victor Central	18/11/2018	No birds sighted				PX (White) & unb
Victor Central	19/11/2018	Failed since last visit				PX (White) & unb
Victor Central	29/11/2018	Nest (with eggs)	3	1		PX (White) & unb
Victor Central	30/11/2018	Second egg confirmed	3	2		PX (White) & unb
Victor Central	2/12/2018	Third egg confirmed	3	3		PX (White) & unb
Victor Central	14/12/2018	1 egg washed out by tide	3	2		PX (White) & unb
Victor Central	30/12/2018	Eggs washed over by tide. Hoodies reclaimed eggs.	3	2		PX (White) & unb
Victor Central	31/12/2018	Chicks sighted	3		2	PX (White) & unb
Hindmarsh River Mouth	4/01/2019	Chicks moved to Hindmarsh River Mouth	3		2	PX (White) & unb
Hindmarsh River Mouth	6/01/2019	One chick failed (Unknown)	3		1	PX (White) & unb
Olivers Reef	7/01/2019	Remaining chick moved to Olivers Reef	3		1	PX (White) & unb
Olivers Reef	9/01/2019	Failed since last visit (unknown)	3			PX (White) & unb
Victor Central	24/01/2019	Scrape (no eggs)				PX (White) & unb
Waitpinga Beach (east)	13/11/2018	Nest (with eggs)	1	2		UA (White) & unb
Waitpinga Beach (east)	18/11/2018	Third egg confirmed	1	3		UA (White) & unb
Waitpinga Beach (east)	28/11/2018	Failed since last visit (unknown)	1			UA (White) & unb
Waitpinga Beach (east)	28/11/2018	Scrape (no eggs)				UA (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Waitpinga Beach (east)	18/12/2018	Scrape (no eggs)				UA (White) & unb
Waitpinga Beach (east)	30/12/2018	Nest (with eggs)	2	3		UA (White) & unb
Waitpinga Beach (east)	6/01/2019	Failed since last visit (unknown)	2			UA (White) & unb
Waitpinga Beach (west)	18/11/2018	Scrape (no eggs)				unb & unb
Waitpinga Beach (west)	20/11/2018	Scrape (no eggs)				unb & unb
Waitpinga Beach (west)	28/11/2018	Scrape (no eggs)				unb & unb
Waitpinga Beach (west)	30/11/2018	Scrape (no eggs)				unb & unb
Waitpinga Beach (west)	18/12/2018	Scrape (no eggs)				unb & unb
Waitpinga Estuary		Birds sighted twice from 15 sightings. Both birds seen were from East and Parsons.				
Watsons Gap	23/08/2018	Nest (with eggs)	1	2		BX (Orange) & unb
Watsons Gap	27/08/2018	Third egg confirmed	1	3		BX (Orange) & unb
Watsons Gap	17/09/2018	Failed since last visit (suspect fox; prints throughout nest site)	1			BX (Orange) & unb
Watsons Gap	24/09/2018	Adults mating				BX (Orange) & unb
Watsons Gap	27/09/2018	Suspect nest				BX (Orange) & unb
Watsons Gap	29/09/2018	Nest (with eggs)	2	2		BX (Orange) & unb
Watsons Gap	1/10/2018	Third egg confirmed	2	3		BX (Orange) & unb
Watsons Gap	15/10/2018	Failed since last visit (suspect fox; prints at nest site)	2			BX (Orange) & unb
Watsons Gap	18/10/2018	Scrape (no eggs)				BX (Orange) & unb
Watsons Gap	23/10/2018	Nest (with eggs)	3	1		BX (Orange) & unb
Watsons Gap	26/10/2018	Second egg confirmed	3	2		BX (Orange) & unb
Watsons Gap	27/10/2018	Third egg confirmed	3	3		BX (Orange) & unb
Watsons Gap	12/11/2018	Failed since last visit (suspect fox; prints throughout nest site)	3			BX (Orange) & unb
Watsons Gap	24/11/2018	Nest (with eggs)	4	1		BX (Orange) & unb
Watsons Gap	26/11/2018	Second egg confirmed	4	2		BX (Orange) & unb
Watsons Gap	30/11/2018	Third egg confirmed	4	3		BX (Orange) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Watsons Gap	14/12/2018	Nest washed out by tide, thought to have failed	4			BX (Orange) & unb
Watsons Gap	15/12/2018	one egg reclaimed (via birds) from tidal inundation, incubation resumed	4	1		BX (Orange) & unb
Watsons Gap	16/12/2018	Nest (with eggs)/prints around egg/observed mating	4			BX (Orange) & unb
Watsons Gap	17/12/2018	No incubation of nest	4			BX (Orange) & unb
Watsons Gap	17/12/2018	Birds seen mating	4			BX (Orange) & unb
Watsons Gap	19/12/2018	Failed since last visit (final egg from clutch abandoned)	4			BX (Orange) & unb
Watsons Gap	23/12/2018	Nest (with eggs)	5	1		BX (Orange) & unb
Watsons Gap	27/12/2018	Second egg confirmed	5	2		BX (Orange) & unb
Watsons Gap	30/12/2018	Third egg confirmed	5	3		BX (Orange) & unb
Watsons Gap	7/01/2019	No birds sighted	5			BX (Orange) & unb
Watsons Gap	8/01/2019	Failed since last visit (tide; eggs found broken)	5			BX (Orange) & unb
Yankalilla river mouth	26/12/2018	Nest (with eggs)	1	1		JZ (White) & unb
Yankalilla river mouth	28/12/2018	Second egg confirmed	1	2		JZ (White) & unb
Yankalilla river mouth	26/01/2019	Chick sighted	1		1	JZ (White) & unb
Yankalilla river mouth	1/03/2019	Fledged	1		1	JZ (White) & unb
Yilki	4/09/2018	Nest (with eggs)	1	1		VH (Orange) & KV (Orange)
Yilki	5/09/2018	Second egg confirmed	1	2		VH (Orange) & KV (Orange)
Yilki	10/09/2018	Third egg confirmed	1	3		VH (Orange) & KV (Orange)
Yilki	15/09/2018	Failed since last visit (tide)	1			VH (Orange) & KV (Orange)
Yilki	22/09/2018	Scrape (no eggs)				VH (Orange) & KV (Orange)
Yilki	23/09/2018	Birds seen mating				VH (Orange) & KV (Orange)
Yilki	23/09/2018	Nest (with eggs)	2	1		VH (Orange) & KV (Orange)
Yilki	27/09/2018	Three eggs confirmed	2	3		VH (Orange) & KV (Orange)
Yilki	25/10/2018	Chicks sighted	2		2	VH (Orange) & KV (Orange)
Yilki	1/11/2018	One chick failed (Unknown; suspect magpie)	2		1	VH (Orange) & KV (Orange)

Site	Date	Nesting stage	Attempt #	egg #	chick #	Flag ID
Yilki	6/11/2018	Suspect chicks failed	2			VH (Orange) & KV (Orange)
Yilki	7/11/2018	Suspect chicks failed	2			VH (Orange) & KV (Orange)
Yilki	8/11/2018	Failed since last visit (unknown)	2			VH (Orange) & KV (Orange)
Yilki	17/11/2018	Scrape (no eggs)				VH (Orange) & KV (Orange)
Yilki	18/11/2018	Nest (with eggs)	3	1		VH (Orange) & KV (Orange)
Yilki	20/11/2018	Second egg confirmed	3	2		VH (Orange) & KV (Orange)
Yilki	22/11/2018	Failed since last visit (tide)	3			VH (Orange) & KV (Orange)
Yilki	29/11/2018	Nest (with eggs)	4	1		VH (Orange) & KV (Orange)
Yilki	1/12/2018	Second egg confirmed	4	2		VH (Orange) & KV (Orange)
Yilki	2/12/2018	Third egg confirmed	4	3		VH (Orange) & KV (Orange)
Yilki	20/12/2018	Failed since last visit (Unknown; suspect fox)	4			VH (Orange) & KV (Orange)
Yilki	24/12/2018	Scrape (no eggs)				VH (Orange) & KV (Orange)
Yilki	29/12/2018	Nest (with eggs)	5	1		VH (Orange) & KV (Orange)
Yilki	1/01/2019	Second egg confirmed	5	2		VH (Orange) & KV (Orange)
Yilki	3/01/2019	Third egg confirmed	5	3		VH (Orange) & KV (Orange)
Yilki	6/01/2019	Failed since last visit (Unknown: dog prints through nest site)	5			VH (Orange) & KV (Orange)
Yilki	27/01/2019	Nest (with eggs)	6	1		VH (Orange) & KV (Orange)
Yilki	30/01/2019	Second egg confirmed	6	2		VH (Orange) & KV (Orange)
Yilki	7/02/2019	Failed since last visit (abandoned; neighbouring pair intruding on territory, continuous territorial disputes)	6			VH (Orange) & KV (Orange)

Photo: Sue and Ash Read: Port Willunga HV orange

Flagging

In total, 133 birds have been banded as part of BirdLife Australia's research program in South Australia since 2012. On the Fleurieu, 67 birds have been given engraved leg flags (Table 6). AMLR NRM has provided funding to allow us to invest more time in the capture and flagging of birds on the Fleurieu, and in combination with the high reporting of resightings, we are able to gain great insight into the demographics of this population.

We rely on reporting of these birds 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. Due to loss of birds, partner swaps and new pairs taking up new territories, there were eleven completely unbanded pairs on the Fleurieu Peninsula this season, they were: Aldinga North/Snapper Point, Ballaparrudda, Callawonga, Bashams Beach, Hallett Cove, Lands End, Goolwa Beach, Normanville South, Sheepies Beach, Waitpinga Beach (west) and Tunk Head Alcove. Through the banding, we were able to confirm that it was indeed one pair that use Victor Central, Hindmarsh River Mouth and Olivers Reef, as PX was flagged late last season, and during 2018/19, was observed in all those territories.

Our aim is to target particular birds for banding including: a site where both adults of a breeding pair are unbanded or where we are uncertain whether a pair uses two spatially separated sites, juveniles due to being of known age, and fledglings to explore dispersal and survival rates post dispersal. Not all birds need to be banded. We use this information to help answer ecological questions about the birds, such as:

- Is it the same pair coming back to a territory?
- Is one pair using 'multiple' territories?
- How far do the fledglings and juveniles disperse?
- How old are the birds when they breed?
- Is there a bias towards male/female survivorship?
- How long do the birds live?

Photo: Sue and Ash Read. Flagged NA orange at Ochre Cove with chick

While BirdLife Australia's Banding program has been going since 2012, it is still too early to report on the longevity of the flagged Hooded Plovers, as birds can live for 10-20 years, and the banding data for the Fleurieu Peninsula is still relatively recent. We have valuable data about movements, partnerships, and mortality. The longest history of a flagged bird that we have collected on the Fleurieu is for EV Orange, which was banded in January 2013 at Parsons beach. We know EV Orange is at least seven years old, as it was already an adult when it was flagged. This individual has been on Parsons Beach since flagging, except in 20014/2015, where it nested with KP Orange at Waitpinga West beach. In 2015/16, KP and EV divorced, and EV was found back on Parsons Beach with an unbanded partner, while KP stayed at Waitpinga. This season (18/19), is the first season that EV Orange has successfully fledged young (x2 fledge at Parsons Beach).

At Hallett Cove, UV Orange, went missing this season while it had an active nest. While we cannot pinpoint the exact date that UV went missing in early October (between 3-11th), the nest that it had with its unbanded partner was abandoned. The new pair (unb and unb) had a scrape in a new section of beach within seven days. This unb pair went on to have two nests, both of which failed. Given UV Orange was a young bird (fledged November 2015 at Myponga), and it had an active nest, it is highly probable it was taken by a predator during incubation. In other areas, birds that have gone missing during nesting have typically been killed by predators. UV Orange has not been sighted since.

As mentioned previously, SB Orange at Shelley Beach (Lady Bay) went missing while it had a four-week-old chick. The last sighting of SB Orange was on the 8th February. When protecting eggs and chicks, Hooded Plover adults are more vulnerable to predation. The remaining partner, DT White, appeared to have partnered with an unbanded bird before the end of the breeding season.

Some other interesting sightings for this season have been new pairs establishing territories. JZ White (male) and unb established a territory at Yankalilla River Mouth. This is the first recorded nesting attempt by JZ White, which fledged at Lands End during the 2015/2016 season. It also managed to fledge its own chick this season.

Interestingly, the sibling of JZ White, ZW White (female), was sighted in May 2018 on Kangaroo Island. ZW White also had its first nesting attempt on American Beach this season, and also managed to fledge a chick. Thus both siblings from Lands End which fledged in 2015/2016 have fledged their own chicks in their very first season as breeders (2018/2019). This is a positive sign that the Fleurieu Peninsula population is a source of new breeders and also that they are dispersing beyond the region, increasing genetic exchange.

Flagging also enabled us to detect the re-occupation of the Maslins Beach territory. The original resident pair NA Orange and unb moved from Maslins beach to Ochre Cove in 2014/2015. This territory then remained vacant for four seasons until this season, when RV Orange, which fledged from Carrickalinga Rotunda in February 2016, partnered with an unb bird at the site. While this new pair didn't manage to fledge any chicks, they had three nesting attempts and one successfully hatched, which is a positive start for a young and inexperienced pair.

Photo: David and Sue Thorn. JZ white at Yankalilla River Mouth

Photo: Jean Turner. ZW at American Beach, Kangaroo Island

BirdLife Australia's current priorities for banding are to band at least one of the breeding pair from the eleven full sets of unbanded pairs as listed above. The highest priorities are:

- unbanded pair at Aldinga North and Snapper Point to confirm our suspicion that this pair utilises the two sites, although recently JT White was flagged here in the non-breeding season, and we will see next season if this is one of the resident pair
- unbanded pair at Ballaparrudda and Callawonga, where it is suspected the same pair use these two sites
- unbanded pair at Hallett Cove considering that UV went missing from that site
- the new unbanded pair at Tunk Head Alcove would be good to band, especially as there is often confusion over territory boundaries.

In terms of fledglings, our priorities are for fledglings from the western coastline of the Fleurieu, that is from Shelley Beach (Lady Bay) to Seacliff, as we have mostly flagged fledglings from the southern Fleurieu Peninsula to date (partly related to the higher productivity of these beaches, e.g. Tunkalilla).

Photo: Richard Edwards. PX white at Hindmarsh River Mouth

Table 6. A summary of leg flagged Hooded Plovers captured and banded on the Fleurieu Peninsula to May 2019. All birds were captured by licensed and permitted banders (Grainne Maguire, Terry Dennis, Meg Cullen and Emma Stephens). The bird's partner, parent or sibling at the time of banding is displayed.

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Myponga Beach	8/05/12	Adult	Female	metal	EY (orange)		Non-breeding	Partner unbanded
Maslin Beach	8/05/12	Adult	Female	metal	MX (orange)		Non-breeding	Partner unbanded
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
Waitpinga Beach (E end)	18/01/13	Adult	Female	metal	KJ (orange)		Not nesting	Partner unbanded
Parsons Beach (far SW end)	18/01/13	Adult		metal		EV (orange)	Not nesting	Partner CL
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)		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
Snapper Point (Pt Willunga end)	22/01/13	Adult	Male	metal	HV (orange)		Port Willunga pair, not nesting	Partner unbanded
Carrickalinga North (N end)	22/01/13	Adult		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
Carrickalinga (toilet block)	27/09/13	Subadult	Male	metal	DJ (orange)		Alone	
Lady Bay Shelley Beach	27/09/13	Adult		metal	SB (orange)		not nesting	Partner LD

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Carrickalinga Pitmans leap access	27/09/13	Adult	Male	metal	SS (orange)		not nesting, with 1 other bird	Partner CK
Lady Bay Shelley Beach	27/09/13	Adult		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 Western estuary	14/11/13	Adult		metal	KW (orange)		fresh scrapes	Partner unbanded
Tunkalilla far West	14/11/13	Adult	Female	metal	LA (orange)		new nest, recently laid, 3 eggs	Partner unbanded
Tunkalilla creek/3rd house East	14/11/13	Adult		metal	ST (orange)		lone bird, suspect nest	
Tunkalilla mid-west estuary	14/11/13	Adult		metal		MT (orange)	new nest, 2 eggs, due to hatch late Nov/early Dec	Partner unbanded
Callawonga Beach	10/02/14	Chick		metal	KP (orange)		25 days old	
Waitpinga Beach East	10/02/14	Chick		metal	PD (orange)		30 days old	Parents KJ and unbanded
Waitpinga Beach East	10/02/14	Chick		metal	PR (orange)		30 days old	Parents KJ and unbanded
Waitpinga Beach West	25/02/14	Juvenile	Female	metal	TZ (orange)			
Waitpinga Beach West	25/02/14	Juvenile	Male	metal	YN (orange)			
Waitpinga Beach West	26/02/14	Juvenile	Male	metal	HX (orange)			
Waitpinga Beach West	26/02/14	Juvenile	Female	metal	UE (orange)			
Tunkalilla far West	28/04/14	Adult	Male	metal	UB (orange)			Partner 'LA'
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

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Tunkalilla Beach mid-west estuary	17/10/14	Adult	Female	metal	ME (orange)		On territory	Partner MT
Tunkalilla Beach Western estuary	17/10/14	Adult	Female	metal		WE (orange)	Scrape no eggs	Partner KW
Waitpinga East	21/01/15	Chick		metal	RR (orange)			
Heysen East - Tunkalilla Beach	25/03/15	Chick	Female	metal	HT (orange)			
Myponga Beach	21/08/15	Adult	Male	metal		US (orange)		Partner of EY
Lands End	24/11/15	Juvenile		metal	EW (orange)			Parents JW and unb
Lands End	24/11/15	Adult		metal	JW (orange)		Fledgling chick	Partner unbanded
Normanville North/Carrickalinga Sands	28/11/15	Juvenile		metal	MV (orange)			One parent unbanded
Myponga Beach	28/11/15	Juvenile		metal	UV (orange)			Parents EY and US
Carrickalinga North/rotunda	23/02/16	Juvenile	Female	metal	RV (orange)			Parents LP and unbanded
Yilki	29/02/16	Juvenile	Female	metal	VH (white)			Parents KV and VH (orange)
Lands End	29/02/16	Juvenile	Female	metal	ZW (white)			Parents JW and unbanded
Lands End	29/02/16	Juvenile	Male	metal		JZ (white)		Parents JW and unbanded
Yilki	29/02/16	Adult	Female	metal		VH (orange)	Fledgling chick	Parent of VH (white)
Waitpinga Beach East	23/03/16	Juvenile	Male	metal		YB (white)		Parents KP and unbanded
Kent Reserve, Victor Harbor	6/03/17	Juvenile		metal	DT (white)			RR and unb
Yilki	6/03/17	Juvenile	Male	metal	JY (white)			
Yilki	6/03/17	Juvenile		metal	YV (white)			Parents: VH (orange) and KV (orange)
Port Stanvac	12/02/18	Adult	Female	metal	ES (white)		Had 2 fledglings	Partner: AR (orange)

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Notes on breeding status	Partner or parent
Waitpinga East	13/03/18	Adult		metal	UA (white)		Recently fledged 2 chicks	Partner: unbanded
Hindmarsh River Mouth	20/03/18	Adult	Male	metal	PX (white)		Recently fledged 1 chick	Partner: unbanded
Tunkalilla Beach	4/04/18	Juvenile		metal	TK (white)		One of two fledglings	Parent: YB (white) and unbanded
Seacliff	10/09/18	Adult		metal	XS (white)		nest with 3 eggs on foredune	unbanded
Parsons Beach	4/01/2019	Fledgling		metal	PR (white)		Sibling banded "PT" white left.	EV orange left and unb
Parsons Beach	4/01/2019	Fledgling		metal		PT (white)	Sibling banded "PR" white right.	EV orange left and unb
Normanville South	11/02/2019	Adult		metal	NC (white)			unbanded
Seacliff	11/02/2019	Fledgling		metal	YL (white)			XS white right and unbanded (parents)
Snapper Point	30/04/2019	Adult		metal	JT (white)			Partner: unbanded

Photo: Richard Edwards. PR white fledged from Parsons Beach. Recently sighted in a flock at Yilki. Starting to show the subadult plumage

Breeding Site Management

Of the 86 confirmed nests on the Fleurieu Peninsula, 61 (70.9%) nests had some form of management (Table 8). Some sites were more remote than others, and at the time deemed not at high risk of human impacts, so active management on the beach was limited. Two nests were signed only (signs at the access point and on the beach; Carrickalinga North and Waitpinga Beach east, 2.3%), two nests were within a closed to the public site (Port Stanvac, 2.3%), and the remaining 57 (66.3%) nests had rope fences and signs (with either signs at access, signs at nest or a combination of both). Of the 22 nests that hatched, 18 (82%) had rope fencing with either temporary signs at the access or signs at the nest site. Of the four unmanaged nests that hatched, one was at Port Stanvac and the others were at remote sites.

Of the 9 sites that successfully produced fledglings, only one site (11%) had no management due to remoteness (Tunkalilla east), and all other fledged nests (89%) had a minimum of signs at the nest and a rope fence.

Two sites, Seacliff and Victor Central, engaged volunteers to act as site guardians to assist with the protection of the chicks and educate beach users due to the high volume of beach users during the chick phase. Chick shelters were also used at Seacliff to provide extra refuge for the chicks to hide in when threatened, as there is minimal shelter on the beach for chicks to hide from predators and recreational users.

There are additional managements to mitigate key threats that were also implemented. Ochre Cove had fox traps nearby, and in the Council areas which recently changed their local by-laws, the new dog owner signage was erected at nest sites. Nesting sites within Alexandrina Council, District Council of Yankalilla and City of Victor Harbor all had their signage which explains their dog by laws, providing an extra level of protection for fenced Hooded Plover sites. Seacliff also had dog on leash specific signage to assist with the high dog use at this site. A recent City of Holdfast Bay by-law review has included a Dog By-Law amendment seeking to ensure dogs are on leash within 100m of signs placed near Hooded Plover breeding sites (nests and chicks).

City of Holdfast Bay were able to provide extra protection to the Seacliff pair, as the pair use a drain on the land side of the beach for foraging. This drain has a pool of water and the adults often take the chicks there to feed when the beach is busy. During the season, the pool of water was getting smaller, as there had been no rain to replenish the water. The volunteers, land managers and Council noticed this, and organised for water

to be replenished at the drain. This was done though several water tankers that were able to replenish the water and keep that as a safe feeding site for the chicks.

One potential threat that occurred over the breeding season, was the scheduled Maslin Beach Nude Games (estimated 500 people attending the event). Given the birds had not bred at this site since 2014/15 and the regular council staff were on leave, the usual event mitigation procedures had been overlooked and the volunteers had to take measures the morning of the event to protect the incubating birds. One of the access points needed to be closed, and participants re-directed to another access point, as 500 people walking past the nest which was only 20m away from the access point. Closing the access point, was undertaken with the permission of the Council Team Leader Community Ranger. Luckily, most people were very compliant and were able to use another access point. As these games are an Annual Event, we will work with the council to ensure preparations are in place well ahead of the event.

Photo: Richard Edwards. Hooded Plovers at Bashams Beach

Table 7. Summary of management across sites during the 2018/19 breeding season for each nesting attempt.

Site/Territory	date nest found	Hatched?	Fledged?	Management
Aldinga	5/10/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Aldinga	21/10/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Aldinga	18/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Aldinga Nth (Aldinga Beach Rd)/Snapper Point	8/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Snapper Point/Aldinga Nth (Aldinga Beach Rd)	1/10/2018			Sign Access Temporary, Sign Nest, Rope fence
Snapper Point/Aldinga Nth (Aldinga Beach Rd)	5/11/2018			Sign Access Temporary, Sign Nest, Rope fence
Ballaparudda	20/11/2018			None
Bashams Beach	19/09/2018	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Other
Bashams Beach	26/12/2018			Sign Access Temporary, Sign Nest, Rope fence
Bashams Beach	4/09/2018			None
Bashams Beach	10/12/2018			None
Callawonga	30/10/2018			None
Carrickalinga North	22/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Carrickalinga North	7/09/2018			Sign Access Temporary, Sign Nest
Carrickalinga North	12/10/2018			None
Carrickalinga Rotunda	2/10/2018			Sign Nest, Rope fence
Carrickalinga Rotunda	7/12/2018	Y	Y	Sign Nest, Rope fence
Carrickalinga Rotunda	6/11/2018			Sign Access Temporary, Sign Nest, Banners, Rope fence
Carrickalinga South	4/12/2018			None
Carrickalinga South	22/01/2019			None
Hallett Cove	22/09/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Hallett Cove	12/11/2018			Sign Access Temporary, Sign Nest, Rope fence

Site/Territory	date nest found	Hatched?	Fledged?	Management
Hallett Cove	27/12/2018			Sign Access Temporary, Sign Nest, Rope fence
Inman River Outlet	4/12/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Inman River Outlet	4/01/2019			Sign Access Temporary, Sign Nest, Rope fence, Other
Inman River Outlet	22/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Inman River Outlet	11/10/2018			Sign Access Temporary, Sign Nest, Rope fence
Inman River Outlet	20/12/2018			Sign Access Temporary, Sign Nest, Rope fence
Inman River Outlet	12/11/2018			None
Maslin Beach	1/10/2018			Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	25/10/2018			Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	9/12/2018			Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	28/12/2018	Y		Sign Access Temporary, Sign Nest, Rope fence
Middleton beach	2/10/2018	Y		Sign Access Temporary, Sign Nest, Rope fence
Normanville South	4/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Normanville South	5/12/2018	Y	Y	Sign Access Temporary, Sign Nest, Rope fence
Normanville South	27/09/2018	Y		Sign Access Temporary, Sign Nest, Banners, Rope fence
Ochre Cove, Maslins	1/10/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Ochre Cove, Maslins	22/12/2018	Y		Sign Access Temporary, Sign Nest, Rope fence, Fox trap
Ochre Cove, Maslins	19/08/2018			Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	19/10/2018	Y		Sign Access Temporary, Sign Nest, Rope fence
Olivers Reef	18/11/2018			None
Parsons Beach	8/11/2018	Y	Y	Sign Access Temporary, Sign Nest, Rope fence
Port Stanvac	9/11/2018			Site closed to public
Port Stanvac	not located (Jan)	Y		Site closed to public
Port Willunga	23/10/2018			Sign Access Temporary, Sign Nest, Rope fence, Permanent fence
Port Willunga	29/08/2018			Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	26/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	25/11/2018			Sign Access Temporary, Sign Nest, Rope fence

Site/Territory	date nest found	Hatched?	Fledged?	Management
Port Willunga	5/12/2018	Y		Sign Access Temporary, Sign Nest, Rope fence
Seacliff	29/08/2018	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Shelters
Seacliff	30/11/2018	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Shelters
Sheepies beach	11/10/2018	Y		None
Shelley Beach (lady bay)	24/12/2018	Y		Sign Nest, Rope fence
Shelley Beach (lady bay)	2/10/2018	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Other
Tunkalilla East	24/10/2018			None
Tunkalilla East	16/11/2018			None
Tunkalilla East	4/01/2019			None
Tunkalilla East	not located (Feb)	Y	Y	None
Tunkalilla Midway	24/10/2018			None
Tunkalilla Midway	16/11/2018			None
Tunkalilla Midway	4/12/2018			None
Tunkalilla Midway	12/12/2018			None
Tunkalilla Midway	4/01/2019			None
Tunkalilla Midway	2/02/2019			None
Tunkalilla Tunk Head alcove	1/02/2019	Y		None
Tunkalilla West	25/09/2018			None
Tunkalilla West	6/11/2018			None
Tunkalilla West	4/12/2018			None
Victor Central	26/09/2018	Y		Sign Access Temporary, Sign Nest, Rope fence, Wardens, Other
Victor Central	29/11/2018	Y		Sign Access Temporary, Sign Nest, Rope fence, Other
Victor Central	2/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Waitpinga Beach (east)	30/12/2018			Sign Access Temporary, Sign Nest
Waitpinga Beach (east)	13/11/2018			None
Watsons Gap	29/09/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Watsons Gap	23/10/2018			Sign Access Temporary, Sign Nest, Rope fence, Other

Site/Territory	date nest found	Hatched?	Fledged?	Management
Watsons Gap	24/11/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Watsons Gap	23/12/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Watsons Gap	23/08/2018			Sign Access Temporary, Sign Nest, Rope fence
Yankalilla river mouth	26/12/2018	Y	Y	Sign Nest, Rope fence
Yilki	23/09/2018	Y		Sign Access Temporary, Sign Nest, Rope fence, Other
Yilki	18/11/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Yilki	29/11/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Yilki	29/12/2018			Sign Access Temporary, Sign Nest, Rope fence, Other
Yilki	4/09/2018			Sign Access Temporary, Sign Nest, Rope fence
Yilki	27/01/2019			Sign Access Temporary, Sign Nest, Rope fence

Photo: Kerri Bartley. Hooded Plover nest protection signage being installed at Hallett Cove

Site Management and Awareness Raising activities during 2018/19

In the 2018/19 breeding season, the following activities were carried out:

Site Management

- Chick wardening occurred at selected high threat sites.
- Temporary fencing and signage around nests and chicks.
- Temporary signs communicating nest failure or chick hatching success. New temporary signage was printed with all 6 Council logos on the sign and other project partners – collectively termed "Plover Partners" (see photo above).
- City of Victor Harbor erected their dog by-laws signs that state "You are entering a designated Hooded Plover nesting site – all dogs must be on leash"
- Alexandrina Council implemented their dog signs, "Dogs on leash at all times within 50m of signed breeding area"
- DC Yankalilla signs were also installed near fenced nests and chick zones asking people to leash their dogs for the next 200m.
- City of Marion proposed a change to 'dogs on leash at all times' at the mouth of the Lower Field River at Hallett Cove due to the environmental value of the area, including the fact that there is now a breeding pair of Hooded Plovers at this site. BirdLife Australia and volunteers made submissions in support of this as part of the public consultation. Council have changed the by-law to dogs-on-leash at all times and will in future install signage to reflect this. City of Marion also went out to public consultation on the coastal footpath to be built through this same area and BirdLife, NRM, Birds SA and volunteers made submissions during the public consultation phase, the outcome is yet to be determined.
- In April 2019, City of Holdfast Bay were reviewing all by-laws and have included an amendment for dogs to be on leash within 100m of a sign near a Hooded Plover breeding site. BirdLife Australia, NRM and volunteers made submissions during the public consultation and the result is yet to be determined.
- With the help of the SA Wildlife Health Network, a list of vet contacts who are willing to assist with entangled or injured Hooded Plovers has been established for the Fleurieu Peninsula.
- Input into the development of the Biodiversity Action Plan for Watsons Gap through the provision of information regarding the site and Hooded Plover pair to the consultant.

Volunteer and Community Engagement

- BirdLife Australia ran two training workshops; Victor Harbor and Seacliff in late August. These workshops were to recruit new volunteers and provide refresher training for current volunteers. The field trip components took place at Kent Reserve and Hallett Cove. A total of 47 participants attended.
- BirdLife Australia's Renee Mead and Grainne Maguire hosted the VRC meeting at start of season.
- BirdLife Australia conducted a banding trip for Red-capped Plovers on the Samphire Coast with BirdLife Australia's Daniel Lees in late October, with assistance from Sharing our Shores staff Aleisa Lamanna and Emma Stephens. Three Red-caps were captured and flagged during this trip.
- BirdLife Australia organised an Island Swap event, where the Hooded Plover volunteers from Kangaroo Island spent the day on the minibus with Volunteers and staff from the Fleurieu Peninsula, visiting key Hooded Plover sites on the Fleurieu. This was a valuable day for information swapping and for the Fleurieu to show Kangaroo Island how management strategies work on the mainland.
- End of Season VRC meeting was conducted in Normanville NRC
- End of Season Volunteer event was held at Sellicks Beach. This was also a 10 year celebration of the BirdLife Australia Beach-nesting Birds Program and AMLR partnership. This event was attended by over 50 participants, and included a 10 year presentation from Grainne Maguire and a speech from South Australia's Environment Minister, David Spiers. Minister Spiers and AMLR Natural Resources Management Board's Presiding Member Felicity-ann Lewis

- Emma Stephens, BirdLife Australia's Sharing our Shores with Coastal Wildlife Coordinator, banded 6 Hooded Plovers (refer to Table 6).
- Wendy White undertook a presentation to Australian Student Environment Network at Willow Creek.
- Wendy, Graham Thomas, Jean Tucker, and Sue and Ash Read participated in the Tour Down Under Market at Snapper Point, doing kids activities and badge making

- Information sessions about Hooded Plovers were carried out by Wendy White at Seacliff in October and December. These events involved a marquee set up on the beach, scopes for viewing hooded plovers and handed out dog biscuits.
- A partnership between Oaklands Residential Aged Care Facility/JAPARA and Friends of the Hooded Plover Fleurieu Peninsula was established, via Sue and Ash Read. The residents at Oaklands create the dog biscuits that volunteers use at Hoodie events.
- Surf Lifesaving Competition at Middleton, involved volunteers running a stall and providing information to participants and spectators.
- A display for the Yankalilla Show was created in September by Wendy White. As was a display for the Sustainable Living Expo at the Festival of Nature at Yankalilla.
- Portal Training session undertaken at the Holdfast Bay Council Depot with new volunteers. This training was provided by Wendy White.
- South Coast Environment Centre meeting and training session for new volunteers. This was a follow up from the workshop to increase participation and inclusion of workshop attendees. Training provided by Wendy White.
- After a by-law change from Yankalilla District Council to allow dogs off leash at all times on Shelley Beach (Lady Bay), Wendy White presented to Council at the next meeting, where the original motion was rescinded. BirdLife Australia also contributed a submission to DC Yankalilla requesting the rescinding of the decision.
- Renee Mead and Wendy White assisted in a grant application for Binoculars for the Friends of Hooded Plover volunteers to borrow from the South Coast Environment Centre. The application was partially successful, with one pair being supported by the Victor Harbor Rotary Grant.
- Wendy participated in the Hounds of Holdfast Event, providing badge making and information to participants.
- Kristy Watson, Seascapes Liaison Officer with Natural Resources AMLR presented to the Coastal Ambassadors program in early 2019 on the Hooded Plover program and incorporated Hooded Plover training and information into the marine debris survey training for volunteers.
- The Washpool Open Day in early May 2019 had a focus on the birds that visit the lagoon however the Sharing our Shores with Coastal Wildlife staff also provided information on the Hooded Plovers that use the nearby beach.
- Volunteers participated in the Hooded Plover Biennial Count November 2018.

Media and newspaper articles

- Article on the 10 year celebrations - Southern Argus, 29th April 2019
- "Cliff survives epic solo journey" – Southern Times Messenger, 19th December 2018.
- "Threatened Birds" – The Courier (which covers Alexandrina Council) a small article to watch out for nests and chicks and to leash dogs – put in by Alexandrina Council on 28th November 2018.
- Articles in both the Victor Times and Advertiser about the workshops earlier in the season.
- Article about the 10 year Celebration - Yankalilla News, May 2019.
- Article on the Seacliff chick - CoastCity Weekly, 17th October 2018.
- Word about the Hood article in the Summer 2018 Edition.
- "Sandy the hooded plover chick has moved to Semaphore" – Southern Times Messenger, 5th June 2019
- "Hooded Plover chicks expand their horizons" – Environment SA News. Government of South Australia, Department of Environment and Water, 5th June 2019
- "Our hoodies expanding their horizons" - The Southern Argus, Strathalbyn, 6th June 2019
- Sue and Ash Read interviewed by local radio stations: Tribe FM and ZZZ
- Sue and Ash also sponsored two radio programs on ZZZ for six weeks during the breeding season which enabled a weekly update of the current breeding situation with the Hooded Plovers on the local beaches broadcast on both programs.

Acknowledgements

A huge thank you to all of the amazing volunteers who participate in Hooded Plover monitoring. Every contribution adds to our knowledge of these threatened species and assists us in improving and adapting the recovery program. Fleurieu Peninsula volunteers should be especially proud as you record lots of detail in your observations, enter these religiously and as a whole, have one of the highest quality data sets for many years now. Well done!

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Photo: Sue and Ash Read. Hooded Plover JT at Snapper Point