

Monitoring Hooded Plovers on the Adelaide coast and Fleurieu Peninsula:

A summary of breeding success for the 2020/2021 season

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Photo: Ochre Cove fledgling at West Beach, Torrens Outlet, Anna Lester.

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Executive Summary

During the 2020/21 season, there were 64 volunteers and 5 staff entering data into the MyBeachBird data portal, with a record number of 3,468 data entries (59 people and 2,489 records in the previous 2019/20 season). Volunteers contributed a very impressive 5,351 hours over the season. Sixty sites were visited, with 31 breeding pairs confirmed on the Adelaide Metro and Fleurieu coast this season (28 pairs in 2019/20, and 33 pairs in 2018/19). There were 98 breeding attempts (232 eggs), with 52 chicks, and 14 fledglings. This is the highest number of breeding attempts and eggs recorded across twelve consecutive seasons. A high percentage of the nests failed at egg stage (73.5%), the second to highest failure rate recorded across the length of the program. Many failures were suspected to have been taken by predators. However, chick survival (26.9%) has improved since the last two seasons (24.6% in 2019/20 and 21.7% in 2018/19), yet still remains lower than previous seasons. The Hooded Plover fledgling per pair result was 0.45, which sits within the 0.4-0.5 range to maintain population viability over time. A landmark event occurred this season with the most northerly nest on record along Adelaide Metro's coast being established at Henley Beach by Seacliff progeny YL (White). This also highlights the importance of the flagging program which is tracking movements and survival of individuals.

The Adelaide Metro and Fleurieu Peninsula Hooded Plover population spans across both the Green Adelaide and Hills and Fleurieu Landscape Board regions. Just over 30% of the population occurs along Green Adelaide's coastline (10 pairs) and the remaining population along Hills and Fleurieu Landscape Board's coastline (21 pairs). The success of the program on the Fleurieu Peninsula has enabled an increase in population and movement of new breeding pairs into metro Adelaide beaches such as Hallett Cove, Seacliff, West Beach and Henley Beach. These are sites where Hooded Plover breeding has never been recorded before. Prior to European settlement these sites likely provided suitable habitat for nesting.

The recovery of Hooded Plover populations into the metro areas of Adelaide can be seen as an active example of "re-wilding". Concerted effort to improve fledgling success over the last decade through collaborative approaches with local councils and communities to improve understanding of co-existence with beach-nesting birds. Importantly the programme has been able to operate at an appropriate scale across the Fleurieu and metropolitan area.

Of the 98 confirmed nests on the Adelaide Metro and Fleurieu Peninsula coast, 69 (70.4%) nests had some form of management (predominantly temporary fencing and signage). Along Green Adelaide's coast 28 out of the 29 (96%) nests were managed (one nest being washed away by a high tide/storm event the day after it was found before management could be installed). Ten managed nests produced fledglings, and the remaining two were from remote sites not requiring 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.

Fox predation is suspected of causing many of the nest failures and concerted effort from all stakeholders has occurred this season to address this difficult issue. Council compliance teams have contributed record numbers of visits to Hooded Plover sites and nearly every council has now incorporated a by-law requiring dogs-on-lead at Hooded Plover breeding sites. Council by-law signs were installed at 87% of managed nests, and at 80% of managed chick sites, requiring dogs to be on-lead near the breeding sites. Compliance visits and use of by-law signs has gradually increased since 2017 when councils, working with BirdLife Australia and Green Adelaide (AMLR NRM Board at the time), first started introducing the new regulations. City of Charles Sturt have just recently (June 2021) approved the new regulation in the dog by-law to ensure dogs must be on leash around Hooded Plover and Red-capped Plover breeding areas.

Individual Council and National Parks (Newland Head CP) reports are produced each year summarising breeding success, threats and recommendations. BirdLife Australia, Green Adelaide and the Hooded Plover Volunteer Coordinator have start-of season meetings with all councils and Department of Environment and Water (DEW) National Parks rangers to discuss the actions and plan for the season ahead.

Flocks of up to 18 Hooded Plovers, including flagged birds from sites as far south as Myponga Beach, are visiting the Adelaide Metro coast again in the 2021 non-breeding season as they did in 2020. This indicates these beaches have sufficient and appropriate food and conditions to support such large flocks, signifying the importance of these sites for the conservation of the Adelaide Metro/Fleurieu Peninsula population as a whole.

This project is supported through the Green Adelaide Board's Sharing Our Shores with Coastal Wildlife project, and is jointly funded through Green Adelaide and the Australian Government's National Landcare Program.

Introduction

The pressures placed on the Australian coast by over 85% of the population living within 50 kilometres of the coast, a growing trend for a 'seachange', and coastal tourism representing \$24.7 billion Australia wide in 2019, places significant and increasing pressure on shorebirds. Pre-covid, 18% of domestic tourists in South Australia visited Adelaide's beaches (compared to 7% visiting parks), and 54% visited Fleurieu Beaches.

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, impacting on 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 into 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. With the enactment of the Landscape South Australia Act 2019, NRM Boards have been superseded by Landscapes Boards. The previous NRM region is now within the Hills and Fleurieu Landscape Board and the Green Adelaide Board. Green Adelaide continues to support the programme through funding and staff support. Some resourcing through the Australian Governments National Landcare Programme is also accessed via the Hills and Fleurieu Landscape Board.

BirdLife Australia's flagging research, which began in 2012 on the Fleurieu Peninsula, has also shown the connected nature of the population across the Adelaide Metro and Fleurieu Peninsula coastlines. Fledglings from beaches within the Hills and Fleurieu Landscape Board region have established breeding territories in Green Adelaide (e.g. Carrickalinga to Port Stanvac and Port Willunga, and Myponga Beach to Maslin Beach). In some cases fledglings have not travelled far from home to start a family, such as "YL" the fledgling from Seacliff which established the most northerly breeding site at Henley Beach.

Within the Green Adelaide region there are very important sites for non-breeding flocking and feeding, such as Snapper Point at Aldinga, the Torrens Outlet at West Beach, Tennyson

birds are in our nature

dunes and West Lakes Shores. Refuelling (i.e. feeding) between breeding seasons is also key to success.

The Hooded Plover program is an excellent example of conservation success. Strong partnerships, volunteer investment and community working together, to not just halt the decline of this threatened species, but to ensure it thrives. Busy urban beaches have seen great success and is an excellent case study showing that wildlife and the community can co-exist.

The project also demonstrates the principles of Biodiversity Sensitive Urban Design (BSUD) the approach to urban biodiversity conservation by seeking to achieve biodiversity benefits on site. Urban design with regards to coastal pathway siting, coastal developments approvals, weed control and careful choice of revegetation to maintain beach profiles, environmental flows for estuaries, public awareness and local government planning and dog by-laws all come together to provide better approaches for conservation of beach-nesting birds.

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 specifically, our aims are expanded into the following detailed actions:

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

- i. Monitor the breeding status of all known pairs on the Fleurieu Peninsula during the breeding months (August-March). Seek to maintain monitoring of sites over time to quantify improvements in breeding success related to management investment;
- ii. Ensure all sites where birds are monitored, have potential threats being simultaneously monitored. This is to assess changes in the occurrence and severity of threats over time, to detect new and emerging threats, and to assess the impact of threats on breeding outcomes;
- iii. Implement on-ground protection of individual breeding sites assessed as vulnerable, following best practice management protocols outlined in 'A practical guide to managing beach-nesting birds in Australia' (Maguire 2008);
- iv. Implement an adaptive management approach, by investigating the effectiveness of nest site protection and modifying where appropriate (and following best practice) in subsequent seasons. For example, management techniques can be adapted to local geomorphological and beach user specifications;
- v. Install remote cameras at nest sites where nests repeatedly fail to detect and identify nest predators. This is done following strict protocols and there are strict limits on the frequency of use of remote cameras to avoid any predator associations between cameras and nests;
- vi. Band a sample of Hooded Plovers on the Fleurieu Peninsula and maintain a database of future sightings to track movements, survival rates and site and pair fidelity. This will lead to better knowledge about the 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 to contribute to a collaborative study of population genetics carried out by Museums Victoria, Deakin University and BirdLife Australia, and;
- vii. Increase awareness and engagement of communities in Hooded Plover conservation via media, social media, and organised events and activities such as the biennial count, scope viewing, dogs' breakfasts, school visits and craft stalls. Awareness raising and opportunities to participate are carried out with the aim of changing beach user behaviour to promote long-term coexistence and minimise human impacts.

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

- i. Maintain a current distribution map and database of the location of breeding pairs of Hooded Plovers on the Fleurieu Peninsula;
- ii. Participate in the Hooded Plover eastern mainland census (Biennial Count) every two years (e.g. November 2016, November 2018) to inform population trend and high level threat trend analyses;
- iii. Using threat assessments from the Biennial Count, coupled with local volunteer knowledge of intensively monitored sites, identify sites where habitat is being degraded by invasive or introduced weeds and target these sites for weed control;
- iv. Identify sites at risk of tidal inundation and investigate potential for habitat retreat or habitat improvements to create longer-term resilience to adapt to rising sea levels;
- v. Protect sites from habitat modifications that will impact suitability for nesting, foraging, roosting or flocking, and;
- vi. Seek to understand impacts of climate change on population distribution and to prioritise sites for habitat protection, including protection from future coastal armouring projects.

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 Adelaide Coast and Fleurieu Peninsula to encourage community ownership and long-term sustainability of the program;
- ii. Develop new resources and materials to support and improve participation of volunteers and land managers in monitoring and recovery actions for the Hooded Plover;
- iii. Hold regular meetings, workshops and 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. Ensure all data is entered into BirdLife Australia's MyBeachBird portal to contribute to the national program;
- 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 and decision makers to ensure threats to Hooded Plovers and their habitat are acknowledged and managed accordingly. This may for example include influencing local bylaws, statewide threatened species or coastal planning legislation, tourism or events management, beach renourishment projects, etc.

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 Adelaide Coast and Fleurieu Peninsula, Green Adelaide's Coast and Seas team coordinate and support the project and volunteers, and local council and some Department for Environment and Water (DEW) rangers assist with nest protection responses. In addition, the Sharing our Shores with Coastal Wildlife project officers, funded by Green Adelaide and hosted by BirdLife Australia, 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 (now Green Adelaide Board), councils and DEW. In implementing the Coastal Action Plans, the Adelaide and Mount Lofty Ranges NRM Board (now Green Adelaide and Hills and Fleurieu Landscape 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 were identified as 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 process of updating this began 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.

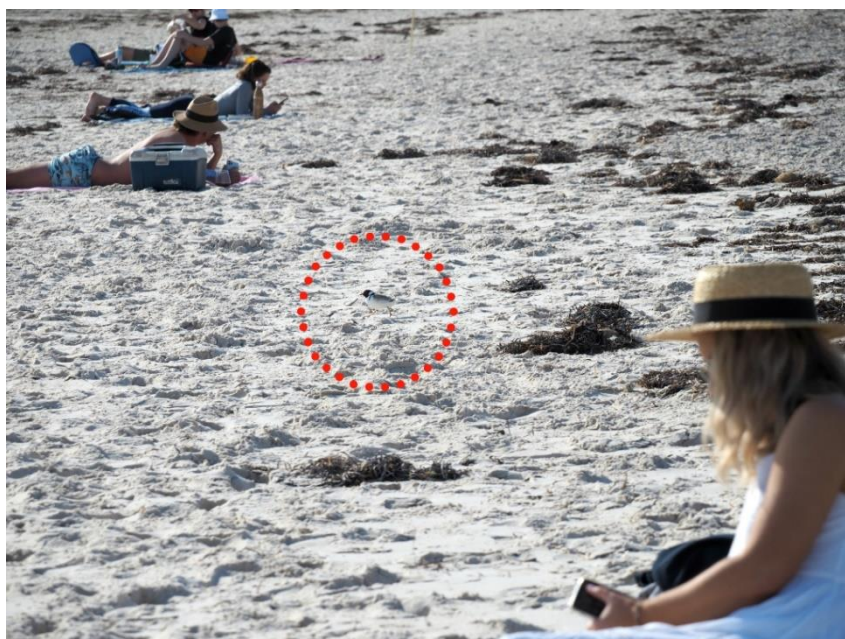


Photo: YL (White) making a dash from the nest to the water's edge at Henley Beach, Paula McManus.

An overview of the 2020/2021 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 Adelaide Metro coast and 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 Landscape region due to logistical and resource constraints.

The volunteers and staff on the Adelaide Metro coast and Fleurieu Peninsula once again displayed a tremendous effort in entering their sightings into the MyBeachBird portal with a total of 3,468 data records entered during the 2020/2021 season. This is an increase in 619 entries from the previous season. Twelve data portal user accounts were responsible for 2,400 (69%) 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. The additional 31% of data is entered by a larger number of volunteers and staff (52 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 Adelaide Metro and 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 Adelaide Metro and Fleurieu accounted for 75% of the data portal entries received from across South Australia, and 30% of all Victorian and South Australian data, which is to be commended. It also highlights the value of having an employed volunteer coordinator (funded by the Green Adelaide Board and the Australian Government's National Landcare Program), BirdLife Australia staff based in Adelaide working on the Sharing our Shores with Coastal Wildlife Project, (funded by the Green Adelaide Board) and the network of support available from the Green Adelaide Coast and Seas team. Volunteers contributed a very impressive 3748 hours over the season, which includes the time spent on site monitoring the birds, installing management, travel data entry time, and the additional coordination and actions undertaken by the VRCs.

There were 60 sites that were visited by volunteers over the breeding season, 49 of these were regularly monitored. Of these 60 sites, 34 had pairs breeding on territory, but this represented only 31 breeding pairs as there were pairs that used multiple sites within the season. Tables 1-4 provide an overview of breeding sites monitored and figures 1 and 2 for maps showing breeding site locations. Exxon Mobil staff for the first time did not

undertake any monitoring at Port Stanvac this season, and there are ongoing negotiations to enable volunteer access for monitoring. As a result there is no breeding data for Port Stanvac this season. Data included in the report is from breeding pairs that have had monthly visits (as a minimum), as anything less than that, we are not able to confirm the number of nesting attempts and eggs, and could potentially miss an entire fledging event if enough months are missed. Five sites had no birds sighted for the season, but are still checked as some were historically occupied and potentially a location where young birds may try to establish a territory. The remaining sites had birds sighted, either individuals or flocks at least once during the season. A breakdown of the number of data portal entries for each site, and threat assessments at each site can be found in Table 1.

In the 2020/21 season, there were a number of territory changes, and territories that were not used, even though they historically were used for breeding. New territories were established this season at: Henley Beach with YL (White), a second pair appeared and nested at Myponga Beach East, a small beach (450m long) to accommodate two pairs, a new unbanded pair nested at Aldinga/Aldinga North and at Waitpinga Estuary. Through the flagging program, we were also able to confirm multiple sites being used by the same pair:

- MR (White) nested at Hallett Cove in 2018/2019, and then at both Hallett Cove and West Beach in 2019/20 season. However, this season MR (White) nested only at West Beach.
- NA's (Orange) fifth nesting attempt this season was not at the usual Ochre Cove, but further south at the northern end of Maslin Beach, possibly to try a new location after so many failed attempts. The pair then moved the very young chick 150m over the very rocky headland back to Ochre Cove.
- In the 2019/20 season it was confirmed that JT (White) nested at both Snapper Point and Port Willunga South (but not Aldinga North), and in the 2020/21 season they nested only at Port Willunga South and were successful again at this site.
- A new unbanded pair were found nesting at Aldinga North, and the same unbanded pair also nested at Aldinga. The nest at Aldinga North was washed away by a tide the day after it was found, however the Aldinga nest hatched and the two 2-day old chicks made the 1.5km trek to Aldinga North with the passage made as safe as possible by volunteers.
- In the 2019/20 season PX (White) took over the entire territories of Victor Central, Oliver's Reef and Hindmarsh River Mouth (YV White previously nested at Hindmarsh/Oliver's Reef in 2018/19 but moved to Middleton East in 2019/20). PX

(White) nested across both Hindmarsh and Oliver's Reef this but had only scrapes at Victor Central.

- Middleton East's pair YV (White) and unbanded nested across both this site and Goolwa this season.



MR and unbanded with their chick at West Beach, October 2020 (Tony Flaherty)



PX at the Hindmarsh River outlet, July 2020 (Richard Edwards)

Figure 1. Hooded Plover breeding sites within Green Adelaide (Henley Beach to Sellicks Beach) for the 2020/2021 season.



Figure 2. Hooded Plover breeding sites within the Hills and Fleurieu Landscape Board region (Myponga Beach East to Goolwa) 2020/2021 season.



Table 1. Number of portal entries and threat assessments on the Fleurieu Peninsula during the 2020/21 breeding season. Portal entries are the number of entries entered via the online data portal. Full threat assessments include both the observed number of threats plus print assessments. There are some sites where the substrate does not allow for print data to be collected (e.g. Rocky coastline, with no sand). * denotes sites that were visited infrequently and not included in the 'sites monitored' in Table 2.

Site/Territory	Portal entries	Number Threat assessments	Full threat assessments	% Full threat assessments completed
Aldinga	12	11	10	83%
Aldinga Nth (Aldinga Beach Rd)	18	16	14	78%
Ballaparudda	11	11	11	100%
Bashams Beach	154	152	151	98%
Bird Is area, Murray Mouth*	1	1	0	0%
Callawonga	9	9	9	100%
Carrickalinga Estuary*	4	1	0	0%
Carrickalinga North	81	28	21	26%
Carrickalinga Rotunda	89	33	14	16%
Carrickalinga South	14	2	2	14%
Coolawang*	4	4	4	100%
Depps Beach, Petrel Cove, and Kings Beach*	1	1	1	100%
Goolwa beach	30	30	29	97%
Hallett Cove	17	15	14	82%
Henley Beach	44	25	21	48%
Hindmarsh River Mouth	108	98	92	85%
Inman River Outlet	43	26	15	35%
Lands End	10	5	4	40%
Marino Rocks	9	3	0	0%
Maslin Beach	210	196	116	55%
Middleton Beach East	80	80	79	99%
Middleton Beach West	99	97	97	98%
Minda Dunes, Gladstone Road, North Brighton.*	1	1	1	100%
Moana Beach	204	187	174	85%
Moana Beach South	23	19	19	83%
Morgans beach Fleurieu*	3	0	0	0%
Myponga Beach East	40	34	29	73%
Myponga Beach Estuary	59	52	47	80%
Normanville North	29	15	5	17%
Normanville South	208	142	47	23%
Ochre Cove, Maslins	237	227	168	71%
Olivers Reef	116	109	105	91%
Parsons Beach	29	28	27	93%
Port Willunga	101	100	97	96%

Site/Territory	Portal entries	Number Threat assessments	Full threat assessments	% Full threat assessments completed
Port Willunga South	118	115	113	96%
Sandy bay north of Carrickalinga North bay*	1	0	0	0%
Seacliff	267	178	117	44%
Sellicks Beach	84	82	65	77%
Sheepies beach	25	22	17	68%
Shelley Beach (lady bay)	41	37	36	88%
Silver Sands	9	8	5	56%
Snapper Point	29	25	11	38%
Southport*	1	1	1	100%
Tennyson Beach*	1	1	0	0%
Tennyson Dunes (Estcourt Rd Fort St)*	4	2	1	25%
Trig point, Port Noarlunga South*	2	2	2	100%
Tunkalilla 1st alcove far east	12	12	11	92%
Tunkalilla East	27	27	25	93%
Tunkalilla Midway	27	27	24	89%
Tunkalilla Tunk Head alcove	8	8	7	88%
Tunkalilla West	30	30	28	93%
Victor Central	10	8	8	80%
Waitpinga Beach (east)	33	33	33	100%
Waitpinga Beach (west)	50	50	50	100%
Waitpinga Estuary	31	31	31	100%
Watsons Gap	115	111	109	95%
West Beach	173	130	98	57%
West Lakes Beach (Estcourt Rd - Mirani Ct)	17	8	7	41%
Yankalilla river mouth	15	3	0	0%
Yilki	240	173	60	25%
Total	3468	2882	2282	66%

In the 2020/21 breeding season there were 98 nesting attempts by 31 breeding pairs on the Adelaide Metro coast and Fleurieu Peninsula. This was the highest number of nests and eggs recorded since monitoring began in 2008/09 (see Table 2).

Table 2. Summary of number of breeding pairs, sites monitored for breeding (see Table 1 for sites monitored), nests, hatching or failing at egg stage, total number of eggs and chicks confirmed, and total chicks that fledged on the Fleurieu Peninsula over twelve breeding seasons.

Season	# pairs (# sites monitored)	# nests	# nests hatch	# nests fail egg stage	# eggs	# chicks obsv. (% of eggs)	# fledglings (% of chicks)	Fldlg/ Pair
2009/10	12 (12)	18	9 (50.0%)	9	49	19 (38.8%)	7 (36.8%)	0.58
2010/11	19 (23)	36	14 (38.9%)	22	83	26 (31.3%)	9 (34.6%)	0.47
2011/12	14 (26)	24	10 (41.7%)	14	60	22 (36.7%)	8 (36.4%)	0.57
2012/13	20 (38)	34	11 (32.4%)	23	76	23 (30.3%)	9 (39.1%)	0.45
2013/14	18 (35)	35	12 (34.3%)	23	84	23 (27.4%)	9 (39.1%)	0.50
2014/15	20 (44)	46	17 (37.0%)	29	107	32 (29.9%)	10 (31.3%)	0.50
2015/16	21 (45)	42	26 (61.9%)	16	112	63 (56.3%)	19 (30.2%)	0.90
2016/17	24 (46)	56	19 (33.9%)	37	141	39 (27.7%)	16 (41.0%)	0.67
2017/18	27 (47)	59	23 (39.0%)	36	153	52 (34.0%)	18 (34.6%)	0.67
2018/19	33 (50)	86	22 (25.6%)	64	223	46 (20.6%)	10 (21.7%)	0.30
2019/20	28 (43)	82	32 (39.0%)	50	218	69 (31.7%)	17 (24.6%)	0.61
2020/21	31 (49)	98	26 (26.5%)	72	232	52 (22.4%)	14 (26.9%)	0.45

Fourteen fledglings were produced in the 2020/21 breeding season, while not the highest number of fledglings in all the seasons monitored, it was still a successful season. Noting the fledgling success could have been higher as monitoring was not undertaken at Port Stanvac (which has a regular breeding pair) and the timing of the SA covid lock down which prevented confirmation of a potential fledgling from Myponga Beach (see below).

The approximate benchmark for fledgling production to maintain population viability over time is set as 0.40 – 0.50 fledglings per pair per season. In 2018/19, the Fleurieu had the worst fledgling per pair result since monitoring began, with 0.30 fledglings per pair. The previous 2019/2020 season exceeded the target with 0.61 fledglings per pair. This season’s results of 0.45 fledglings per pair, sits comfortably within the range to maintain population viability. In addition to setting a benchmark to measure success, variation in the pairs responsible for fledgling production needs to be ensured to maintain genetic variation. Also to ensure that all occupied breeding sites have potential to be ‘source’ sites. Figures 4 and 5 provide a geographic overview of those sites that fledged chicks. Table 3 provides a summary of nesting attempts for each pair monitored and Table 4 expands this into more detail about each individual nesting attempt.

The earliest recorded nests were at the start of August. As usual, the Ochre Cove pair started the season off with a nest on the 8th August (7th August in the 2019/20 season). They were followed closely by the pair at Bashams Beach on the 10th August, an early nesting attempt for this site. Both nests failed (tide-related) and both pairs re-nested within August. The second Bashams nest went onto fledge the first chick for the season on the 11th November. In the previous 2019/20 season, the first chick to fledge was also on the South Coast at Middleton Beach West on 1st November. Four other pairs started nesting in August: Moana (failed), Seacliff (failed), West Beach (one chick made it to about 10 days from fledging), and Watsons Gap (failed). A total of 6 pairs nested in August this season, compared with 12 pairs in the previous season.

February was still a busy month for breeding this season with nests present at 5 sites (Moana, Tunkalilla West, Tunkalilla Midway, Callawonga and Yilki), and chicks at 7 sites (Seacliff, Moana, Myponga Beach Estuary, Normanville South, Tunkalilla East, Sheepies, Middleton Beach West). Breeding slowed after February, with the last nest recorded at Tunkalilla West which went onto fledge two chicks on 11th April. Six chicks fledged in December (42.9%) the highest number of any month for the season. This also included the captive-reared chick from Watsons Gap. November saw only 1 chick fledge (7.1%), 2 in January (14.3%), 2 in February (14.3%), 1 in March (7.1%), and 2 in April at Tunkalilla West (14.3%).

Five pairs (15.6%) had only one nesting attempt for the entire season, 8 pairs (25%) had 2 nesting attempts; 10 pairs (31.3%) had 3 nesting attempts; 3 pairs (9.4%) had 4 nesting attempts, 2 pairs (6.3%) had 5 nesting attempts, 3 pairs (9.4%) had 6 attempts, and 1 pair (3.1%) had 7 attempts. The pairs that had 5 nesting attempts were: Ochre Cove and Waitpinga Beach West. The pairs that had 6 nesting attempts were Moana, Tunkalilla Midway, and Waitpinga Beach West, and none with success. However, Tunkalilla Midway had 5 attempts last season (2019/20), resulting in success with 2 fledglings. The pair at Yilki had 7 failed attempts this season, with 18 eggs, all of which unfortunately failed. This is a record number of eggs recorded for one pair in a season across both South Australia and Victoria. Yilki had 5 attempts last season (2019/20) but the pair that season had success with one chick fledging.

Unfortunately, no breeding occurred at the Inman River outlet this season, and in fact one of the Yilki pair VH (Orange) disappeared and was replaced by the Inman River's RR (Orange) and were the pair that nested unsuccessfully 7 times this season (majority of

failures are suspected fox predation). If a new breeding pair establish at the Inman River outlet in the 2021/22 season and nests start to fail, it is recommended that a nest camera is installed to capture the cause of failure. It is also recommended that a nest camera is installed at Yilki next season to confirm fox is the cause of failure.

Of concern is the on-going lack of breeding success at Carrickalinga North, at which there has been no fledgling success since monitoring began. Nesting has been observed at Carrickalinga North since the 2010/11 season (there were 2 seasons where nesting did not occur: 2012/13 and 2013/14) and every year the nests have failed except during the 2015/16 and 2019/20 seasons where nests hatched, but chicks failed. PD (Orange) nested in 2016/17, 2017/2018 and 2018/19, and an unbanded pair have nested since. This season the unbanded pair had only one failed nest. If nesting occurs at Carrickalinga North in the 2021/22 season it is recommended that the pair are banded and a nest camera installed to capture what is causing nest failure. It would also be beneficial to band the Carrickalinga Rotunda pair if the unbanded pair nest again next season.

A pair were suspected of nesting at a small sandy bay north of Carrickalinga North. They were observed on just the one occasion by members of the public who suspected they were nesting. On-going monitoring was not possible due to the difficult terrain and unsuitable access. As a result, it could not be included in the report. No breeding was observed this season at Yankalilla River outlet.

Of the 98 confirmed nests that were monitored, 73.5% (72 nests) failed, and 26.5% hatched (26 nests). 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 2020/21, of the nests that failed, 73.6% (53 nests) failed to unknown causes. However, for 34 (64.2%) of these nests that had unknown cause for failure, there were prints and evidence around the nest suggesting the following potential causes of failure: 37.7% (20) nests were suspected depredated by fox (one nest had 2 eggs unknown and 1 egg suspected fox); with 18 of these having prints leading to the nest. Avian predators (raven, magpie, silver gull, and birds of prey) were suspected in 9.4% (5) of nest losses. One nest at Watsons Gap had evidence of both fox and magpie (1.9%). Tide was suspected to have washed out nests in 9.4% (5) cases, and weather-induced failures in 3.7% (2). There was one case at West Beach where a dog or person were suspected (1.9%). The remaining 35.8% (19) of nests with fate unknown, had no evidence around the nest.

Of the nest failures that could be confirmed (26.4%; 19 nests), 1 nest (5.3%) at Seacliff was witnessed being attacked by a magpie, breaking both eggs, 3 nests (15.8%) were witnessed being taken by ravens (Normanville South nest all eggs attacked and broken, Carrickalinga Rotunda one egg taken by raven and remaining 2 eggs later suspected taken by tide, and at Sellicks one egg taken by raven and remaining 2 eggs gone near hatching date, raven suspected), 10 nests (52.6%) failed due to tidal inundation (including a nest at Moana that was inundated, however 1 unviable egg remained that was not incubated), 4 nests (21.1%) that were abandoned (Middleton Beach West nest abandoned mid-nesting when UE (Orange) disappeared, two were unknown, and the remaining at Waitpinga East had one egg buried, the other gone), and 1 nest (5.3%) that was unviable at Henley Beach. The pair at Henley Beach were still incubating the nest 21 days beyond the usual 28 days of incubation (i.e. incubating for 49 days). The 2-egg nest was found at the 2-egg stage, so it could have been incubated for even longer than calculated (although likely to have been found early in incubation as YL had been seen elsewhere prior to being sighted at Henley). Egg examination showed one egg without any visible sign of chick development, the other egg had a fully formed chick with egg tooth, and had presumably tried to hatch as there were 2 puncture holes in the eggshell. In cases where birds have been incubating for over 28 days, BirdLife Australia analyses the data entered into the portal to ensure there is no chance the birds may have laid another nest. BirdLife Australia also undertakes testing to determine the age of the eggs, which is undertaken only by trained staff or Volunteer Regional Coordinators. If the eggs are deemed unviable, the eggs are removed. Removing eggs from Hooded Plover nests is not something that is undertaken lightly, as there is risk that viable eggs could be removed. BirdLife Australia has stringent protocols to avoid the possibility that this would happen. The welfare of the incubating adults is also considered, as the birds could continue sitting on unviable eggs for extended periods, during extreme weather conditions and high recreational beach use days. This can lead to deterioration of body condition, as well as reduce the chance that the birds will relay.

The sites, in summary, recommended for nest cameras next season (2021/22) include: Carrickalinga North (many nest failures over multiple seasons), Tunkalilla (concerns over high number of flagged adult birds disappearing), Yilki (to confirm the cause of so many nest losses), Waitpinga (East and West, multiple unknowns and fox evidence), and Middleton Beach East (UE Orange disappeared mid-incubation).

Figure 4: Sites within Green Adelaide where chicks fledged during the 2020/2021 season.



Figure 5: Sites within the Hills and Fleurieu Landscape region where chicks fledged during the 2020/2021 season.



Table 3. Summary of nests, number of nests that failed, hatched and fledged, and total number of eggs confirmed, chicks observed and chicks that fledged from each site monitored in the 2020/21 breeding season.

* Aldinga Nth/Aldinga: same unbanded pair is assumed based on nesting dates not overlapping, sites being so close and unbanded pair from Aldinga taking chicks to Aldinga North.

Site	Pair ID	# Nests	# nests fail egg stage	# nests hatch	# nests fledged	# eggs	# chick obsv.	# fledglings
Henley Beach	YL Right (White) & unb	1	1	0	0	2	0	0
West Beach	MR Right (White) & unb	2	1	1	0	5	2	0
Seacliff	XS Right (White) & unb	3	1	2	1	7	5	1
Moana Beach	PM Right (White) & unb	6	4	2	0	14	4	0
Ochre Cove, Maslins	NA Right (Orange) & unb	5	3	2	1	12	3	1
Maslin Beach	RV Right (Orange) & unb	3	2	1	1	7	2	2
Port Willunga	DP Left (Orange) & HV Right (Orange)	2	1	1	1	4	1	1
Port Willunga South	JT Right (White) & unb	2	1	1	1	6	4	1
Aldinga Nth (Aldinga Beach Rd)	unb & unb*	1	1	0	0	3	0	0
Aldinga (chicks taken to Aldinga Nth)	unb & unb*	1	0	1	0	2	2	0
Sellicks Beach	SR Right (Orange) & unb	3	2	1	0	7	3	0
Myponga Beach East	WM Left (White) & YK Right (White)	3	3	0	0	8	0	0
Myponga Beach Estuary	US Left (Orange) & unb	2	0	2	1	6	4	1
Carrickalinga North	unb & unb	1	1	0	0	3	0	0
Carrickalinga Rotunda	unb & unb	3	3	0	0	6	0	0
Normanville South	NC Right (White) & unb	3	1	2	1	9	4	1
Shelley Beach (lady bay)	DT Right (White) & unb	1	1	0	0	2	0	0
Tunkalilla West	EW Right (Orange) & unb	3	3	0	0	5	0	0
Tunkalilla West	PT Left (White) & unb	2	0	1	1	5	2	2
Tunkalilla Midway	ME Right (Orange) & unb	6	6	0	0	13	0	0
Tunkalilla East	unb & unb	4	3	2	1	12	2	1
Ballaparudda	JZ Left (White) & unb	1	0	1	1	3	1	1

Site	Pair ID	# Nests	# nests fail egg stage	# nests hatch	# nests fledg e	# eggs	# chick obsv.	# fledglings
Callawonga	JZ Left (White) & unb	1	1	0	0	2	0	0
Sheepies beach	unb & unb	2	1	1	0	3	1	0
Parsons Beach (scrapes only)	unb & unb	0	0	0	0	0	0	0
Waitpinga Beach (east)	UA Right (White) & unb	5	5	0	0	10	0	0
Waitpinga Estuary	unb & unb	1	1	0	0	1	0	0
Waitpinga Beach (west)	unb & unb	6	6	0	0	9	0	0
Yilki	KV Right (Orange) & RR Right (Orange)	7	7	0	0	18	0	0
Victor Central (scrapes only)	PX Right (White) & unb	0	0	0	0	0	0	0
Hindmarsh River Mouth	PX Right (White) & unb	1	0	1	0	3	3	0
Olivers Reef	PX Right (White) & unb	3	3	0	0	8	0	0
Watsons Gap	BX Left (Orange) & unb	4	3	1	1	11	3	1
Bashams Beach	MS Left (White) & unb (UE and SA stole a chick from here)	3	1	2	1	8	4	1
Middleton Beach West	UE Right (Orange) & Metal only Right (suspected SA Orange)	3	3	0	0	8	0	0
Middleton Beach West	Metal only Right (suspected SA Orange) & unb	1	0	1	0	2	2	0
Middleton Beach (east)	YV Right (White) & unb	2	2	0	0	5	0	0
Goolwa beach	YV Right (White) & unb	1	1	0	0	3	0	0
TOTAL 31 Pairs		98	72	26	12	232	52	14

Out of the total number of nests (98), 26 were confirmed as hatched (26.5%). Twelve of these hatched nests successfully fledged 14 chicks (i.e. 46.2% of hatched nests fledged). Of the chicks observed (52 confirmed chicks), 14 (26.9%) fledged.

The 14 fledglings produced this season were from 12 pairs of Hooded Plovers, with two pairs producing 2 fledglings from individual nesting attempts. The pairs were: Seacliff (1 fledgling), Ochre Cove (1 fledgling), Maslin Beach (2 fledglings), Port Willunga (1

fledgling), Port Willunga South (1 fledgling), Myponga Beach Estuary (1 fledgling), Normanville South (1 fledgling), Tunkalilla West (PT White) (2 fledglings), Tunkalilla East (1 fledgling), Ballaparudda/Callawonga (1 fledgling), Watsons Gap (1 fledgling – fledged during care), and Bashams Beach (1 fledgling).

This represents repeated success for some territories across the past two seasons. In the 2019/20 season Seacliff produced two fledglings, Ochre Cove two fledglings from two separate nesting attempts, one fledgling from Port Willunga South, one fledgling from Tunkalilla West (EW Orange), one fledgling from Ballaparudda/Callawonga and 3 from Bashams Beach from 2 separate nesting attempts. JZ White (Ballaparudda/Callawonga), banded as a juvenile in February 2016 at Lands End, has had success again this season, making it 3 fledglings in the 3 seasons in a row since he began breeding (first successful breeding attempt was at Yankalilla River Mouth in 2018/19). Tunkalilla East and Tunkalilla West have been the two most productive sites on the Fleurieu Peninsula since 2010/11 (13 and 14 fledglings respectively). Tunkalilla East's YB (White) was last seen in the 2018/19 season and the unbanded pair who replaced it were not successful in 2019/20 but had one successful fledgling this season.

Of concern is another flagged bird disappearing from Tunkalilla this season (Tunkalilla West - EW Orange) during active nesting which may mean the bird died on the nest. Whilst fledgling production at Tunkalilla is high, the loss of breeding adult birds is of concern (see Flagging section of report for details). It is recommended that next season nest cameras are installed to identify the predators at this site, which could be a contributing factor in the high number of missing/assumed dead adults. After many years of negotiations, access via the gate at Tunkalilla has been provided to volunteers, and will assist with monitoring and managing nest camera installation.

There was a concentration of fledgling success along the Onkaparinga Beaches from Ochre Cove to Port Willunga South, with 5 fledglings from 4 pairs (Ochre Cove, Maslin Beach, Port Willunga and Port Willunga South). At Port Willunga, the same pair DP (Orange) and HV (Orange) have not seen success for 4 seasons since they fledged one chick in December 2015. It was fantastic to see the pair successfully fledge a chick this season. Volunteers believe the pair are benefiting from the community's increase in awareness, particularly regarding leashing of dogs, from the much more visible pair at Port Willunga South. The City of Onkaparinga's campaign to raise awareness and run a 'naming competition' for DP and HV (Daphne and Harvey) has also contributed.

Watsons Gap has had many failures over recent seasons mostly due to suspected fox predation. In November it was with great excitement that 2 out of 3 chicks had made it to 23 days, when a member of the public witnessed a chick being attacked by a Pacific Gull. They chased off the Pacific Gull and rescued the injured chick (the other was in hiding, and was not seen again) and took it to the Goolwa Wildlife Rescue Centre. There it was treated and transported the next day to the Adelaide Bird and Exotics Vet Centre at Richmond. There was significant trauma to the hock joint which was thought to be a compressed fracture, and rotated. In total it was splinted 3 times (after X-Ray examination) and recovered well at the Goolwa Wildlife Rescue Centre. The Centre volunteers named the chick Percy. Percy fledged while in care, and as it was at a good weight and recovering well it was decided to release Percy as soon as possible, which was done on 9th December at Bashams Beach. Percy was seen flying and eating within minutes of release and continued to spend time at Bashams, and was eventually joined by the (presumed) juvenile that fledged at Bashams in November. It was a fantastic team effort by everyone involved and special thanks to the care from Dr Anne Fowler at Adelaide Bird and Exotics Vet Centre and Rena Robinson (and volunteers) from Goolwa Wildlife Centre, and assistance and coordination from Gayl Males (South Coast Environment Centre), and release assistance and subsequent monitoring by volunteers, and of course a big thanks to the beach-goers who initially helped the chick.



Photo: "Percy" with splint (Rena Robinson), being released at Bashams Beach, and first moments after release (Gayl Males).

Overall, in 2020/21, an egg had a 6% chance of fledging (14 fledglings from 232 eggs), which is lower than 7.8% in 2019/20, but better than 4.5% in 2018/19. A nest had a 12.2% chance of fledging one chick (12 nests out of 98), which is a decrease from 15.9% in 2019/20 but an increase from 10.5% in 2018/19. Chick survival was slightly increased compared to last season, with 26.9% of chicks fledging this season, compared to 24.6%

in 2019/20, and 21.7% in 2018/19. The highest ever recorded chick survival rate, of 41.0%, occurred in 2016/17.

Of the 38 chicks that failed, the cause of failure was predominantly unknown (36 chicks, 94.7%), with 4 chicks suspected of fox predation (11.1%), 3 suspected Silver Gull attack (8.3%), 1 chick suspected dog attack (2.8%), 1 chick suspected avian attack (2.8%) and 1 chick suspected impact of storm event (2.8%). The last two cases even had chick bodies located, and still the fate could not be determined (i.e. cause of failure unknown). A chick from Seacliff was last seen on the afternoon before fledging day. On fledging day, a member of the public found the body of the chick and photographed it alerting the council (fortunately its sibling went onto fledge). From the condition of the chick's body, it could possibly be inferred it was avian attack. However, this could not be confirmed as the body had disappeared by the time staff were made aware, so a necropsy was not possible. The second situation was at Moana where the pair were on their 5th attempt, when the body of the 4-day old chick was located. Predation/attack was suspected based on the prolific dog tracks through the fenced area and leading up to the chick body. However, the necropsy showed no evidence of predation. It had also been a very wet/cold/stormy night so that may have influenced the outcome.

There were 2 cases (5.3%) where chick failure was confirmed. The depredation by a magpie of a 22-day old chick at Normanville South was witnessed by volunteers during the set-up of a beach information session, very unfortunate timing but also beneficial to learn what caused the failure of this chick. The other case was at the Hindmarsh River outlet, witnessed by volunteers, where a 3-day old chick was swimming across the outlet when it was picked out of the water by a Silver Gull. The Silver Gull dropped the chick body on the beach.

There was another attack made a by Silver Gull, but in this case it was the fledged chick at Seacliff (41 days old). Witnessed by a volunteer, the fledgling was picked up by a Silver Gull and then dropped. The fledgling appeared uninjured and reunited with the parents. Prior to this attack, the fledgling was observed to be very quiet with little movement. If it was weak in any way, this may have been why the Silver Gulls attacked. In a very unique situation, this fledgling was permitted to stay with the adults even when they had nested again, allowing it to sit close-by while incubating the adults took turns incubating the eggs. On the 5th January 2021 the fledgling became entangled with a small pink thread just above the foot causing swelling and limping. It was caught and then treated by a Zoos SA

vet on site. The fledgling weighed slightly less than usual. It was seen walking well afterwards and was gone from the site a couple of weeks later.

A unique situation arose at Bashams Beach in early October, where the pair (MS White and unbanded) with two 3-day old chicks came into contact with the neighbouring Middleton Beach West pair who had recently lost a nest (UE Orange, and metal only right suspected SA Orange). The adults were aggressive with each other and the chicks became separated. Interestingly, one chick went with the parents, the other chick joined the Middleton Beach West pair, and was treated as their own, brooding the chick and chasing away Silver Gulls. They continued to look after the chick, however 2 days later it was no longer present. The parents of the chicks went onto fledge the chick at Bashams Beach, which was the first for the season.

Monitoring undertaken by volunteers was so consistent that in some cases chick disappearance could be confirmed within a few hours, such as at Seacliff on the 13th November between 7.35am and 8.10am, and at Sellicks Beach on the 13th January between 7am and 10am.

One of the chicks at Myponga Beach Estuary came close to fledging and was at least 4 weeks old when it was last seen (hatching was delayed for unknown reasons, and there was also a 5-day gap between eggs last confirmed and chick sighted). Unfortunately, South Australia's Covid lock-down prevented site visits to confirm chick presence, and when visits re-established the chick was no longer present. West Beach's chick was at least 24 days old when it disappeared, which is an incredible effort for what is such a very busy metropolitan beach.

These threats are collated and provided to the land managers via individual Council Reports, and a National parks (Newland Head CP) Report. These reports are produced each season summarising breeding success and threats, and recommending site-specific actions to reduce threats and increase awareness in the community. BirdLife Australia staff and the Volunteer Coordinator meet with the councils prior to each season to discuss and plan actions based on the recommendations. All the information included in the reports is based on the data recorded by volunteers and staff in the portal.

Table 4. Detailed summary of nest progress for each site according to data entered in the MyBeachBird data portal and sent to BirdLife Australia for the 2020/21 breeding season. * denotes where an egg/nest number is assumed.

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Henley Beach	6/09/2020	Nest (with eggs)	1	2		YL Right (White) & unb
Henley Beach	5/10/2020	Nest (with eggs) (due to hatch)	1			
Henley Beach	13/10/2020	Nest (with eggs) - BirdLife Staff inspected eggs. 1 egg had a 'puncture' type hole. The other was aged using a specialised technique, which determined it may not be viable. Decision was made to leave eggs in situ for another couple of days	1	2		
Henley Beach	20/10/2020	Failed since last visit (eggs unviable and removed under strict BirdLife considerations and conditions)	1			
West Beach	30/09/2020	Two chicks sighted	1		2	
West Beach	1/10/2020	One chick failed (unknown)	1		1	
West Beach	2/10/2020	Chick sighted	1		1	
West Beach	23/10/2020	Chicks sighted	1		1	
West Beach	26/10/2020	Suspect chicks failed	1			
West Beach	27/10/2020	Failed since last visit	1			
West Beach	4/11/2020	Suspect nest	unsure			MR Right (White) & unb
West Beach	10/11/2020	Suspect nest				
West Beach	15/11/2020	Suspect nest				
West Beach	16/11/2020	Suspect nest				
West Beach	16/11/2020	Suspect nest				
West Beach	16/11/2020	Nest (with eggs)	2	3		MR Right (White) & unb
West Beach	26/11/2020	Nest (with eggs)	2	Unchecked		
West Beach	27/11/2020	Failed since last visit (Unknown; Suspect person or dog)	2			
Seacliff	23/08/2020	Nest (with eggs)	1	2		XS Right (White) & unb
Seacliff	14/09/2020	Nest (with eggs)	1	unchecked		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Seacliff	16/09/2020	Failed since last visit (Magpie; confirmed/witnessed)	1			
Seacliff	28/09/2020	Nest (with eggs)	2	2		XS Right (White) & unb
Seacliff	30/09/2020	Third egg confirmed	2	3		
Seacliff	27/10/2020	Nest (with eggs)	2	3		
Seacliff	28/10/2020	Chicks sighted	2		3	
Seacliff	13/11/2020	One chick failed (unknown; failed between 07:35 and 08:10)	2		2	
Seacliff	2/12/2020	Second chick failed (unknown: failed between 12:30 and 17:00) Chick body located at Young St Drain, suspected avian attack	2		1	
Seacliff	2/12/2020	chick body located	2			
Seacliff	3/12/2020	Fledged	2			
Seacliff	29/12/2020	Nest (with eggs)	3	2		XS Right (White) & unb
Seacliff	22/01/2021	Nest (with eggs)	3	unchecked		
Seacliff	23/01/2021	Chicks sighted	3		2	
Seacliff	3/02/2021	One chick failed (unknown)	3		1	
Seacliff	8/02/2021	Chicks sighted	3		1	
Seacliff	9/02/2021	Suspect chicks failed (unknown)	3			
Moana Beach	14/08/2020	Nest (with eggs)	1	3		Unb & unb
Moana Beach	21/08/2020	Two eggs failed (tide)	1	1		
Moana Beach	23/08/2020	Failed since last visit (last egg abandoned)	1			
Moana Beach	26/08/2020	Failed since last visit (confirmation of abandonment)	1			
Moana Beach	2/09/2020	Nest (with eggs)	2	2		Unb & unb
Moana Beach	3/09/2020	Third egg confirmed	2	3		
Moana Beach	13/09/2020	Nest (with eggs)	2	unchecked		
Moana Beach	15/09/2020	Failed since last visit (unknown)	2			
Moana Beach	27/09/2020	Scrape (no eggs)				
Moana Beach	3/10/2020	Nest (with eggs)	3	1		Unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Moana Beach	5/10/2020	Second egg confirmed	3	2		
Moana Beach	20/10/2020	Nest (with eggs). Adult flagged PM Right (White)	3	unchecked		
Moana Beach	24/10/2020	Third egg confirmed	3	3		
Moana Beach	25/10/2020	Nest (with eggs)	3	unchecked		
Moana Beach	26/10/2020	Failed since last visit (unknown)	3			
Moana Beach	5/11/2020	Scrape (no eggs)				
Moana Beach	8/11/2020	Nest (with eggs)	4	1		PM Right (White) & unb
Moana Beach	11/11/2020	Second egg confirmed	4	2		
Moana Beach	12/11/2020	Third egg confirmed	4	3		
Moana Beach	8/12/2020	Nest (with eggs)	4	3		
Moana Beach	10/12/2020	Chicks sighted	4		1	
Moana Beach	10/12/2020	Second chick confirmed. Adults still incubating remaining egg	4		2	
Moana Beach	11/12/2020	Third chick sighted	4		3	
Moana Beach	12/12/2020	Chicks sighted	4		3	
Moana Beach	13/12/2020	Suspect chicks failed (unknown)	4			
Moana Beach	14/12/2020	Suspect chicks failed	4			
Moana Beach	31/12/2020	Nest (with eggs)	5	1		PM Right (White) & unb
Moana Beach	1/02/2021	Nest (with eggs)	5	unchecked		
Moana Beach	2/02/2021	Chicks sighted	5		1	
Moana Beach	5/02/2021	Chicks sighted	5		1	
Moana Beach	6/02/2021	Failed since last visit (chick body recovered from dune, near a fox den, after a cold/stormy night). Necropsy undertaken. No evidence of bruising or puncture marks, so not predation.	5			
Moana Beach	6/02/2021	Failed since last visit	5			
Moana Beach	22/02/2021	Nest (with eggs)	6	1		PM Right (White) & unb
Moana Beach	25/02/2021	Nest (with eggs), no incubation	6	1		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Moana Beach	26/02/2021	Nest (with eggs), no incubation	6	unchecked		
Moana Beach	28/02/2021	Failed since last visit (abandoned; suspect due to heavy fox presence near nest)	6			
Ochre Cove, Maslins	8/07/2020 - 8/08/2020	observed scrapes during this timeframe				NA Right (Orange) & unb
Ochre Cove, Maslins	8/08/2020	Nest (with eggs)	1	1		
Ochre Cove, Maslins	9/08/2020	second egg confirmed	1	2		
Ochre Cove, Maslins	13/08/2020	third egg confirmed	1	3		
Ochre Cove, Maslins	17/08/2020	Nest (with eggs)	1	unchecked		
Ochre Cove, Maslins	19/08/2020	Failed since last visit (suspect tide)	1			
Ochre Cove, Maslins	24/08/2020	Scrape (no eggs)				
Ochre Cove, Maslins	26/08/2020	Scrape (no eggs)				
Ochre Cove, Maslins	28/08/2020	Nest (with eggs)	2	1		NA Right (Orange) & unb
Ochre Cove, Maslins	29/08/2020	second egg confirmed	2	2		
Ochre Cove, Maslins	3/09/2020	Nest (with eggs)	2	unchecked		
Ochre Cove, Maslins	4/09/2020	Failed since last visit (suspect tide)	2			
Ochre Cove, Maslins	6/09/2020 - 10/09/2020	scrapes observed				
Ochre Cove, Maslins	11/09/2020	Nest (with eggs)	3	1		NA Right (Orange) & unb
Ochre Cove, Maslins	14/09/2020	second egg confirmed	3	2		
Ochre Cove, Maslins	19/09/2020	Nest (with eggs)	3	unchecked		
Ochre Cove, Maslins	23/09/2020	Failed since last visit (suspect tide)	3			
Ochre Cove, Maslins	3/10/2020	Nest (with eggs)	4	1		NA Right (Orange) & unb
Ochre Cove, Maslins	7/10/2020	second egg confirmed	4	2		
Ochre Cove, Maslins	9/10/2020	third egg confirmed	4	3		
Ochre Cove, Maslins	4/11/2020	Nest (with eggs)	4	unchecked		
Ochre Cove, Maslins	5/11/2020	Chicks sighted. One chick hatched, two eggs abandoned/failed to hatch	4		1	
Ochre Cove, Maslins	6/11/2020	Suspect chicks	4			

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Ochre Cove, Maslins	7/11/2020	Suspect chicks failed	4			
Ochre Cove, Maslins	9/11/2020	Failed since last visit (unknown chick; eggs abandoned/failed to hatch)	4			
Ochre Cove, Maslins	6/12/2020	Nest (with eggs). Nest is south of Ochre Cove, 150m south of the rocks.	5	2		NA Right (Orange) & unb
Ochre Cove, Maslins	21/12/2020	Nest (with eggs)	5	unchecked		
Ochre Cove, Maslins	22/12/2020	Chicks sighted	5		2	
Ochre Cove, Maslins	28/12/2020	One chick failed (unknown)	5		1	
Ochre Cove, Maslins	28/12/2020	Chicks sighted. Chick moved up to Ochre Cove	5		1	
Ochre Cove, Maslins	27/01/2021	Fledged	5			
Maslin Beach	5/09/2020	Nest (with eggs)	1	1		RV Right (Orange) & unb
Maslin Beach	6/09/2020	Second egg confirmed	1	2		
Maslin Beach	20/09/2020	Nest (with eggs)	1	unchecked		
Maslin Beach	22/09/2020	Failed since last visit (tide, swell 15-2m into fenced area)	1			
Maslin Beach	2/10/2020	Nest (with eggs)	2	2		RV Right (Orange) & unb
Maslin Beach	4/10/2020	Nest (with eggs)	2	unchecked		
Maslin Beach	5/10/2020	Failed since last visit (unknown; suspect avian predator)	2			
Maslin Beach	10/10/2020	Scrape (no eggs)				
Maslin Beach	1/11/2020	Nest (with eggs)	3	3		RV Right (Orange) & unb
Maslin Beach	13/11/2020	Nest (with eggs)	3	unchecked		
Maslin Beach	14/11/2020	Chicks sighted	3		2	
Maslin Beach	18/12/2020	Fledged	3		2	
Port Willunga	12/08/2020 - 4/09/2020	Scrapes				DP Left (Orange) & HV Right (Orange)
Port Willunga	8/09/2020	Nest (with eggs)	1	2		
Port Willunga	19/09/2020	Nest (with eggs)	1	unchecked		
Port Willunga	22/09/2020	Failed since last visit (tide)	1			
Port Willunga	1/10/2020	Nest (with eggs)	2	1		DP Left (Orange) & HV Right (Orange)

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Port Willunga	2/10/2020	Second egg confirmed	2	2		
Port Willunga	1/11/2020	Nest (with eggs)	2	unchecked		
Port Willunga	2/11/2020	1 Chick sighted	2		1	
Port Willunga	7/12/2020	Chicks sighted	2		1	
Port Willunga	9/12/2020	Fledged	2		1	
Port Willunga South	28/08/2020	Scrape (no eggs)				JT Right (White) & unb
Port Willunga South	9/09/2020	Nest (with eggs)	1	2		
Port Willunga South	10/09/2020	Third egg confirmed	1	3		
Port Willunga South	21/09/2020	Nest (with eggs)	1	unchecked		
Port Willunga South	22/09/2020	Failed since last visit (tide washed the area, adults re-claimed eggs, which was identified once the chick hatched)	1			
Port Willunga South	27/09/2020	Nest (with eggs)	1	2		JT Right (White) & unb
Port Willunga South	16/10/2020	1 Chick sighted	1		1	
Port Willunga South	19/10/2020	Suspect chicks failed	1			
Port Willunga South	21/10/2020	Failed since last visit (unknown)	1			
Port Willunga South	26/10/2020	Nest (with eggs)	2	1		JT Right (White) & unb
Port Willunga South	26/11/2020	Nest (with eggs)	2	3* (unchecked)		
Port Willunga South	27/11/2020	Chicks sighted	2		2	
Port Willunga South	28/11/2020	Chicks sighted (third chick confirmed)	2		3	
Port Willunga South	28/11/2020	Chicks sighted (one chick failed; unknown)	2		2	
Port Willunga South	29/11/2020	Chicks sighted (one chick failed; unknown)	2		1	
Port Willunga South	31/12/2020	Chicks sighted	2		1	
Port Willunga South	1/01/2021	Fledged	2		1	
Aldinga Nth (Aldinga Beach Rd)	15/11/2020	Nest (with eggs)	1	3		unb & unb
Aldinga Nth (Aldinga Beach Rd)	16/11/2020	Failed since last visit (suspect tide)	1			

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Aldinga	2/12/2020	Nest (with eggs)	2	2		unb & unb
Aldinga	13/12/2020	Nest (with eggs)	2	unchecked		
Aldinga	28/12/2020	Chicks sighted	2		2	
Aldinga	28/12/2020	Chicks sighted	2		2	
Aldinga	29/12/2020	No birds sighted at Aldinga, as chicks moving 1.5km to Aldinga Nth	2			
Aldinga Nth (Aldinga Beach Rd)	29/12/2020	Chicks sighted (moved 1.5km from Aldinga)	2		2	
Aldinga Nth (Aldinga Beach Rd)	1/01/2021	Chicks sighted (one chick failed; unknown)	2		1	
Aldinga Nth (Aldinga Beach Rd)	3/01/2021	Failed since last visit (unknown; suspect fox)	2			
Sellicks Beach	11/09/2020	Nest (with eggs)	1	3		SR Right (Orange) & unb
Sellicks Beach	10/10/2020	One egg failed (raven sighted at nest)	1	2		
Sellicks Beach	10/10/2020	Nest (with eggs) Due to hatch	1	unchecked		
Sellicks Beach	11/10/2020	Failed since last visit (shell fragments in nest, suspect raven). Nest due to hatch	1			
Sellicks Beach	29/10/2020	Nest (with eggs)	2	2		SR Right (Orange) & unb
Sellicks Beach	18/11/2020	Nest (with eggs)	2	2		
Sellicks Beach	22/11/2020	Failed since last visit (unknown; suspect raven)	2			
Sellicks Beach	2/12/2020	Nest (with eggs)	3	2		SR Right (Orange) & unb
Sellicks Beach	13/12/2020	Nest (with eggs)	3	3		
Sellicks Beach	2/01/2021	Chicks sighted	3		3	
Sellicks Beach	7/01/2021	Chicks sighted (one chick failed: unknown)	3		2	
Sellicks Beach	11/01/2021	Chicks sighted (one chick failed: unknown; suspect silver gull)	3		1	
Sellicks Beach	12/01/2021	Chicks sighted	3		1	
Sellicks Beach	13/01/2021	Suspect chicks failed. Last sighting was seen 7am (3 hours prior to this entry). Unknown; suspect predator	3			

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Sellicks Beach	14/01/2021	Failed since last visit	3			
Myponga Beach East	11/09/2020	Nest (with eggs)	1	3		unb & unb
Myponga Beach East	16/09/2020	Nest (with eggs)	1	unchecked		
Myponga Beach East	22/09/2020	Failed since last visit (suspect tide)	1			
Myponga Beach East	6/10/2020	Nest (with eggs)	2	3		unb & unb
Myponga Beach East	26/10/2020	Nest (with eggs) unb pair banded on 20/10/20	2	unchecked		WM Left (White) & YK Right (White)
Myponga Beach East	2/11/2020	Failed since last visit (unknown)	2			
Myponga Beach East	2/11/2020	Birds sighted		unchecked		
Myponga Beach East	23/11/2020	Scrape (no eggs)				
Myponga Beach East	4/01/2021	Nest (with eggs)	3	2		WM Left (White) & YK Right (White)
Myponga Beach East	6/01/2021	Failed since last visit (unknown)	3			
Myponga Beach Estuary	30/08/2020	Scrape (no eggs)				US Left (Orange) & unb
Myponga Beach Estuary	6/09/2020	Scrape (no eggs)				
Myponga Beach Estuary	11/09/2020	Nest (with eggs)	1	2		
Myponga Beach Estuary	14/09/2020	third egg confirmed	1	3		
Myponga Beach Estuary	15/10/2020	Nest (with eggs)	1	unchecked		
Myponga Beach Estuary	20/10/2020	1 Chick sighted	1		1	
Myponga Beach Estuary	17/11/2020	Chicks sighted	1		1	
Myponga Beach Estuary	21/11/2020	Birds sighted (unknown if chick fledged; assumed failed)				
Myponga Beach Estuary	24/12/2020	Nest (with eggs)	2	unchecked		US Left (Orange) & unb
Myponga Beach Estuary	27/12/2020	Nest (with eggs)	2	3		
Myponga Beach Estuary	4/01/2021	Chicks sighted	2		3	
Myponga Beach Estuary	6/01/2021	Chicks sighted (one chick failed: unknown)	2		2	
Myponga Beach Estuary	11/01/2021	Chicks sighted (one chick failed: unknown)	2		1	
Myponga Beach Estuary	8/02/2021	fledged (35 days)	2		1	
Myponga Beach Estuary	9/02/2021	fledged sighted	2		1	

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Myponga Beach Estuary	11/02/2021	fledged sighted	2		1	
Myponga Beach Estuary	14/02/2021	Fledged (seen flying for the first time)	2		1	
Carrickalinga North	25/10/2020	Suspect nest				
Carrickalinga North	27/10/2020	Nest (with eggs)	1	2		unb & unb
Carrickalinga North	28/10/2020	Third egg confirmed	1	3		
Carrickalinga North	13/11/2020	Nest (with eggs)	1	3		
Carrickalinga North	14/11/2020	Failed since last visit (unknown)	1			
Carrickalinga Rotunda	1/11/2020	Nest (with eggs)	1	1		unb & unb
Carrickalinga Rotunda	5/11/2020	Failed since last visit (unknown)	1			
Carrickalinga Rotunda	21/11/2020	Nest (with eggs)	2	2		unb & unb
Carrickalinga Rotunda	26/11/2020	Nest (with eggs)	2	unchecked		
Carrickalinga Rotunda	4/12/2020	Failed since last visit (unknown)	2			
Carrickalinga Rotunda	23/12/2020	Nest (with 3 eggs originally) (one egg failed, raven observed taking egg).	3	3		unb & unb
Carrickalinga Rotunda	26/12/2020	Nest (with eggs)	3	2		
Carrickalinga Rotunda	3/01/2021	Failed since last visit (suspect tide)	3			
Normanville South	16/08/2020	Scrape (no eggs)				NC Right (White) & unb
Normanville South	9/09/2020	Nest (with eggs)	1	3		
Normanville South	23/09/2020	Nest (with eggs)	1	unchecked		
Normanville South	23/09/2020	Failed since last visit (raven seen leaving area, eggs cracked)	1			
Normanville South	10/10/2020	Nest (with eggs)	2	3		NC Right (White) & unb
Normanville South	6/11/2020	Nest (with eggs)	2	unchecked		
Normanville South	6/11/2020	Chicks sighted	2		2	
Normanville South	20/11/2020	Chicks sighted (one chick failed; unknown)	2		1	
Normanville South	25/11/2020	Chicks sighted	2		1	
Normanville South	27/11/2020	Suspect chicks failed	2			
Normanville South	28/11/2020	Failed since last visit (magpie seen taking chick)	2			

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Normanville South	16/12/2020	Nest (with eggs)	3	3		NC Right (White) & unb
Normanville South	9/01/2021	Nest (with eggs)	3	unchecked		
Normanville South	9/01/2021	Chicks sighted	3		1	
Normanville South	10/01/2021	second chick confirmed. Unsure if 3rd egg hatched	3		2	
Normanville South	15/01/2021	Chicks sighted (one chick failed; unknown)	3		1	
Normanville South	13/02/2021	Chicks sighted	3		1	
Normanville South	14/02/2021	Fledged	3		1	
Shelley Beach (lady bay)	28/11/2020	Nest (with eggs)	1	2		DT Right (White) & unb
Shelley Beach (lady bay)	8/12/2020	Nest (with eggs)	1	2		
Shelley Beach (lady bay)	14/12/2020	Failed since last visit (unknown; suspect weather)	1			
Tunkalilla West	2/09/2020	Scrape (no eggs)				EW Right (Orange) & unb
Tunkalilla West	9/09/2020	Scrape (no eggs)				
Tunkalilla West	16/09/2020	Scrape (no eggs)				
Tunkalilla West	23/09/2020	Nest (with eggs) (EW Right Orange)	1	2		
Tunkalilla West	13/10/2020	Failed since last visit (unknown) (EW Right Orange)	1			
Tunkalilla West	30/11/2020	Nest (with eggs) (EW Right Orange)	2	2		EW Right (Orange) & unb
Tunkalilla West	11/12/2020	Failed (suspect tide) plus NEW nest (with eggs) EW Right Orange - last date EW Right Orange seen	3	1		EW Right (Orange) & unb
Tunkalilla West	18/12/2020	Failed (unknown) EW Orange. Plus NEW scrape (no eggs) PT scrape	3			PT Left (White) & unb
Tunkalilla West	24/12/2020	Nest (with eggs) (PT white)	1	1		
Tunkalilla West	7/01/2021	third egg confirmed	1	3		
Tunkalilla West	21/01/2021	Nest (with eggs)	1	3		
Tunkalilla West	27/01/2021	Failed since last visit (unknown; failed hatching date)	1			
Tunkalilla West	10/02/2021	Nest (with eggs)	2	2		PT Left (White) & unb
Tunkalilla West	4/03/2021	Nest (with eggs)	2	2		
Tunkalilla West	11/03/2021	Chicks sighted	2		2	
Tunkalilla West	7/04/2021	Chicks sighted	2		2	

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Tunkalilla West	11/04/2021	Fledged	2		2	
Tunkalilla Midway	16/09/2020	Scrape (no eggs)				ME Right (Orange) & unb
Tunkalilla Midway	23/09/2020	Nest (with eggs)	1	2		
Tunkalilla Midway	13/10/2020	Failed (unknown) plus NEW nest (with eggs)	2	3		
Tunkalilla Midway	23/10/2020	Nest (with eggs)	2	3		ME Right (Orange) & unb
Tunkalilla Midway	4/11/2020	Failed since last visit (unknown)	2			
Tunkalilla Midway	16/11/2020	Nest (with eggs)	3	3		
Tunkalilla Midway	30/11/2020	Nest (with eggs)	3	3		
Tunkalilla Midway	11/12/2020	Failed since last visit (suspect tide)	3			
Tunkalilla Midway	18/12/2020	Nest (with eggs)	4	3* (unchecked)		ME Right (Orange) & unb
Tunkalilla Midway	24/12/2020	Nest (with eggs)	4	3* (unchecked)		
Tunkalilla Midway	7/01/2021	Failed (unknown) plus NEW nest (with eggs)	5	2		ME Right (Orange) & unb
Tunkalilla Midway	14/01/2021	third egg confirmed	5	3		
Tunkalilla Midway	21/01/2021	Nest (with eggs)	5	3		
Tunkalilla Midway	27/01/2021	Failed since last visit (unknown)	5			
Tunkalilla Midway	10/02/2021	Nest (with eggs)	6	2		ME Right (Orange) & unb
Tunkalilla Midway	18/02/2021	Failed since last visit (suspect fox)	6			
Tunkalilla East	9/09/2020	Suspect nest				unb & unb
Tunkalilla East	16/09/2020	Nest (with eggs)	1	3		
Tunkalilla East	23/09/2020	Failed since last visit (suspect fox)	1			
Tunkalilla East	13/10/2020	Nest (with eggs)	2	3		unb & unb
Tunkalilla East	23/10/2020	Failed (unknown) plus NEW scrape (no eggs)	2			unb & unb
Tunkalilla East	16/11/2020	Nest (with eggs)	3	3		
Tunkalilla East	23/11/2020	Failed (suspect fox) plus NEW scrape (no eggs)	3			
Tunkalilla East	30/11/2020	Scrape (no eggs)				
Tunkalilla East	18/12/2020	Scrape (no eggs)				

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Tunkalilla East	24/12/2020	Nest (with eggs)	4	2		unb & unb
Tunkalilla East	7/01/2021	Third egg confirmed	4	3		
Tunkalilla East	21/01/2021	Nest (with eggs)	4	3		
Tunkalilla East	27/01/2021	Chicks sighted	4		2	
Tunkalilla East	10/02/2021	one chick failed (unknown)	4		1	
Tunkalilla East	25/02/2021	Chicks sighted	4		1	
Tunkalilla East	4/03/2021	Fledged	4		1	
Ballaparudda	10/09/2020	Scrape (no eggs)				JZ Left (White) & unb
Ballaparudda	18/10/2020	Nest (with eggs)	1	3		
Ballaparudda	1/11/2020	Nest (with eggs)	1	3		
Ballaparudda	24/11/2020	1 Chick sighted	1		1	
Ballaparudda	16/12/2020	Fledged	1		1	
Callawonga	5/01/2021	Scrape (no eggs)				
Ballaparudda	5/01/2021	Scrape (no eggs)				
Callawonga	19/01/2021	Scrape (no eggs)				
Callawonga	28/01/2021	Nest (with eggs)	2	2		
Callawonga	16/02/2021	Failed since last visit (unknown; suspect fox)	2			
Sheepies beach	28/10/2020	Scrape (no eggs)				unb & unb
Sheepies beach	14/11/2020	Nest (with eggs)	1	2		
Sheepies beach	17/11/2020	Nest (with eggs)	1	2		
Sheepies beach	24/11/2020	Failed (unknown) plus NEW scrape (no eggs)				
Sheepies beach	17/12/2020	Nest (with eggs)	2	1		unb & unb
Sheepies beach	28/12/2020	Nest (with eggs)	2	1		
Sheepies beach	8/01/2021	Chicks sighted	2		1	
Sheepies beach	1/02/2021	Chicks sighted	2		1	
Sheepies beach	7/02/2021	Suspect chicks				
Sheepies beach	8/02/2021	Suspect chicks failed (unknown)				
Parsons Beach	28/10/2020	Scrape (no eggs)				unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Parsons Beach	24/11/2020	Scrape (no eggs)				unb & unb
Waitpinga Beach (east)	11/09/2020	Scrape (no eggs)				UA Right (White) & unb
Waitpinga Beach (east)	17/09/2020	Scrape (no eggs)				
Waitpinga Beach (east)	13/10/2020	Scrape (no eggs)				
Waitpinga Beach (east)	21/10/2020	Scrape (no eggs)				
Waitpinga Beach (east)	1/11/2020	Nest (with eggs)	1	1		
Waitpinga Beach (east)	5/11/2020	Failed since last visit (tide)	1			
Waitpinga Beach (east)	29/11/2020	Nest (with eggs)	2	2		UA Right (White) & unb
Waitpinga Beach (east)	8/12/2020	Failed since last visit (unknown) PLUS Nest (with eggs)	3	2		
Waitpinga Beach (east)	11/12/2020	Failed since last visit (unknown, 1 egg buried by sand, 1 egg suspect reptile)	3			
Waitpinga Beach (east)	31/12/2020	Nest (with eggs)	4	2		UA Right (White) & unb
Waitpinga Beach (east)	5/01/2021	Nest (with eggs)	4	2		
Waitpinga Beach (east)	8/01/2021	Failed since last visit (suspect Raven/Magpie)	4			
Waitpinga Beach (east)	26/01/2021	Nest (with eggs)	5	3		UA Right (White) & unb
Waitpinga Beach (east)	27/01/2021	Failed since last visit (suspect fox)	5			
Waitpinga Estuary	10/09/2020	Scrape (no eggs)				unb & unb
Waitpinga Estuary	13/10/2020	Scrape (no eggs)				
Waitpinga Estuary	1/11/2020	Nest (with eggs)	1	1		
Waitpinga Estuary	5/11/2020	Failed since last visit (unknown)	1			
Waitpinga Estuary	31/12/2020	Scrape (no eggs)				
Waitpinga Beach (west)	30/07/2020	Scrape (no eggs)				unb & unb
Waitpinga Beach (west)	31/07/2020	Scrape (no eggs)				
Waitpinga Beach (west)	25/08/2020	Scrape (no eggs)				
Waitpinga Beach (west)	10/09/2020	Scrape (no eggs)				
Waitpinga Beach (west)	17/09/2020	Nest (with eggs)	1	1		
Waitpinga Beach (west)	30/09/2020	Failed since last visit (unknown)	1			
Waitpinga Beach (west)	13/10/2020	Nest (with eggs)	2	2		unb & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Waitpinga Beach (west)	8/11/2020	Nest (with eggs)	2	unchecked		
Waitpinga Beach (west)	11/11/2020	Failed since last visit (unknown; suspect fox. Failed hatch date)	2			
Waitpinga Beach (west)	24/11/2020	Nest (with eggs)	3	1		unb & unb
Waitpinga Beach (west)	29/11/2020	Failed since last visit (unknown)	3			
Waitpinga Beach (west)	8/12/2020	Nest (with eggs)	4	1		unb & unb
Waitpinga Beach (west)	11/12/2020	second egg confirmed	4	2		
Waitpinga Beach (west)	16/12/2020	third egg confirmed	4	3		
Waitpinga Beach (west)	28/12/2020	Nest (with eggs)	4	unchecked		
Waitpinga Beach (west)	31/12/2020	Failed since last visit (suspect fox)	4			
Waitpinga Beach (west)	8/01/2021	Scrape (no eggs)				
Waitpinga Beach (west)	9/01/2021	Nest (with eggs)	5	1		unb & unb
Waitpinga Beach (west)	13/01/2021	Failed (suspect fox) plus NEW nest (with eggs)	6	1		unb & unb
Waitpinga Beach (west)	16/01/2021	Failed since last visit (suspect tide)	6			
Yilki	29/07/2020	Last sighting of VH orange (previous partner of KV Orange)				KV Right (Orange) VH Left (Orange)
Yilki	31/07/2020	Birds sighted RR Right (Orange) appears to have partnered with KV right				KV Right (Orange) & RR Right (Orange)
Yilki	13/08/2020	Scrapes				KV Right (Orange)
	- 02-					
	09/2021					
Yilki	4/09/2020	Nest (with eggs)	1	1		KV Right (Orange) & RR Right (Orange)
Yilki	6/09/2020	second egg confirmed	1	2		
Yilki	9/09/2020	third egg confirmed	1	3		
Yilki	10/09/2020	Nest (with eggs)	1	3		
Yilki	11/09/2020	Failed since last visit (suspect fox)	1			
Yilki	24/09/2020	Nest (with eggs)	2	2		KV Right (Orange) & RR Right (Orange)

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Yilki	25/09/2020	Failed since last visit (unknown; suspect weather)	2			
Yilki	6/10/2020	Nest (with eggs)	3	1		KV Right (Orange) & RR Right (Orange)
Yilki	8/10/2020	second egg confirmed	3	2		
Yilki	4/11/2020	Nest (with eggs)	3	unchecked		
Yilki	5/11/2020	Failed since last visit (unknown; suspect fox. Failed hatch date)	3			
Yilki	17/11/2020	Nest (with eggs)	4	2		KV Right (Orange) & RR Right (Orange)
Yilki	20/11/2020	third egg confirmed	4	3		
Yilki	1/12/2020	Nest (with eggs)	4	unchecked		
Yilki	2/12/2020	Eggs washed by tide. 2 eggs reclaimed in new spot.	4	2		
Yilki	3/12/2020	Eggs washed by tide. 1 egg reclaimed. Adults actively scrape making around egg.	4	1		
Yilki	4/12/2020	Failed since last visit (tide)	4			
Yilki	11/12/2020	Nest (with eggs)	5	1		KV Right (Orange) & RR Right (Orange)
Yilki	14/12/2020	second egg confirmed	5	2		
Yilki	16/12/2020	third egg confirmed	5	3		
Yilki	21/12/2020	Nest (with eggs)	5	unchecked		
Yilki	22/12/2020	Failed since last visit (suspect fox)	5			
Yilki	28/12/2020	Scrape (no eggs)				
Yilki	30/12/2020	Nest (with eggs)	6	1		KV Right (Orange) & RR Right (Orange)
Yilki	2/01/2021	second egg confirmed	6	2		
Yilki	4/01/2021	third egg confirmed	6	3		
Yilki	18/01/2021	Nest (with eggs)	6	unchecked		
Yilki	19/01/2021	Failed since last visit (suspect fox)	6			
Yilki	25/01/2021	Scrape (no eggs)				

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Yilki	28/01/2021	Scrape (no eggs)				
Yilki	29/01/2021	Scrape (no eggs)				
Yilki	31/01/2021	Nest (with eggs)	7	1		KV Right (Orange) & RR Right (Orange)
Yilki	31/01/2021	second egg confirmed	7	2		
Yilki	1/02/2021	Nest (with eggs)	7	2		
Yilki	15/02/2021	Nest (with eggs)	7	unchecked		
Yilki	16/02/2021	Failed since last visit (suspect fox)	7			
Victor Central	17/08/2020	scrapes at Victor Central, Olivers Reef & Hindmarsh River Mouth				PX Right (White) & unb
	-					
	29/08/2020					
Olivers Reef	8/09/2020	Nest (with eggs)	1	2		PX Right (White) & unb
Olivers Reef	11/09/2020	third egg confirmed	1	3		
Olivers Reef	8/10/2020	Nest (with eggs)	1	unchecked		
Olivers Reef	9/10/2020	Failed since last visit	1			
Olivers Reef	9/10/2020	Failed since last visit (unknown; suspect fox) failed on hatching day	1			
Olivers Reef	13/10/2020	Scrapes				
	-					
	19/10/2020					
Olivers Reef	19/10/2020	Nest (with eggs)	2	1		PX Right (White) & unb
Olivers Reef	21/10/2020	second egg confirmed	2	2		
Olivers Reef	24/10/2020	third egg confirmed	2	3		
Olivers Reef	10/11/2020	Nest (with eggs)	2	unchecked		
Olivers Reef	16/11/2020	Nest (with eggs) (two eggs failed; unknown)	2	1		
Olivers Reef	17/11/2020	Failed since last visit (unknown; suspect fox)	2			
Hindmarsh River Mouth	23/11/2020	Scrape (no eggs)				
Hindmarsh River Mouth	24/11/2020	Scrape (no eggs)				
Olivers Reef	25/11/2020	Nest (with eggs)		1		PX Right (White) & unb

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Olivers Reef	26/11/2020	Nest (with eggs)	3	1		
Olivers Reef	26/11/2020	Nest (with eggs)	3	unchecked		
Olivers Reef	27/11/2020	second egg confirmed	3	2		
Olivers Reef	2/12/2020	One egg failed (tide), 1 egg remains	3	1		
Olivers Reef	3/12/2020	Failed since last visit (tide)	3			
Hindmarsh River Mouth	10/12/2020	Nest (with eggs)	4	1		PX Right (White) & unb
Hindmarsh River Mouth	12/12/2020	second egg confirmed	4	2		
Hindmarsh River Mouth	14/12/2020	third egg confirmed	4	3		
Hindmarsh River Mouth	10/01/2021	Nest (with eggs)	4	unchecked		
Hindmarsh River Mouth	11/01/2021	Chicks sighted	4		3	
Hindmarsh River Mouth	13/01/2021	Chicks sighted	4		3	
Hindmarsh River Mouth	14/01/2021	Failed since last visit (two chicks failed overnight; unknown: suspect fox). Third chick was observed swimming across the estuary where a silver gull took it while the chick was swimming	4			
Watsons Gap	6/08/2020 - 28/08/2020	scrapes				BX Left (Orange) & unb
Watsons Gap	30/08/2020	Nest (with eggs)	1	1		
Watsons Gap	1/09/2020	second egg confirmed	1	2		
Watsons Gap	4/09/2020	third egg confirmed	1	3		
Watsons Gap	8/09/2020	Nest (with eggs)	1	unchecked		
Watsons Gap	9/09/2020	Failed since last visit (unknown; suspect fox or raven/magpie)	1			
Watsons Gap	19/09/2020	Scrape (no eggs)				
Watsons Gap	20/09/2020	Scrape (no eggs)				
Watsons Gap	21/09/2020	Nest (with eggs)	2	1		BX Left (Orange) & unb
Watsons Gap	23/09/2020	second egg confirmed	2	2		
Watsons Gap	24/09/2020	third egg confirmed	2	3		
Watsons Gap	21/10/2020	Nest (with eggs)	2	unchecked		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Watsons Gap	22/10/2020	Chicks sighted	2		1	
Watsons Gap	23/10/2020	Chicks sighted	2		3	
Watsons Gap	8/11/2020	Chicks sighted (one chick failed; unknown on 7/11/2020)	2		2	
Watsons Gap	14/11/2020	Chicks sighted	2		2	
Watsons Gap	15/11/2020	Suspect chicks failed	2			
Watsons Gap	15/11/2020	One chick was attacked by a pacific gull by a member of the public. The injured chick was taken to Goolwa Wildlife Centre. Other chick in hiding	2		2	
Watsons Gap	16/11/2020	injured chick taken to Adelaide Bird and Exotics Vet Centre for specialist treatment and taken back to Goolwa Wildlife Centre for ongoing rehabilitation	2			
Watsons Gap	16/11/2020	Remaining chick failed (unknown)	2			
Watsons Gap	18/11/2020	Birds sighted				
Watsons Gap	25/11/2020	Scrape (no eggs)				
Watsons Gap	27/11/2020	Scrape (no eggs)				
Watsons Gap	29/11/2020	Nest (with eggs)	3	1		BX Left (Orange) & unb
Watsons Gap	2/12/2020	second egg confirmed	3	2		
Watsons Gap	4/12/2020	third egg confirmed	3	3		
Watsons Gap	9/12/2020	Fledged (injured juvenile from attempt 2 released at Bashams Beach; fledged in captivity)	2		1	
Watsons Gap	19/12/2020	Nest (with eggs)	3	unchecked		BX Left (Orange) & unb
Watsons Gap	20/12/2020	Failed since last visit (unknown; suspect fox)	3			
Watsons Gap	30/12/2020	Nest (with eggs)	4	1		BX Left (Orange) & unb
Watsons Gap	1/01/2021	second egg confirmed	4	2		
Watsons Gap	3/01/2021	Failed since last visit (unknown; suspect fox)	4			
Watsons Gap	11/01/2021	Scrape (no eggs)				
Bashams Beach	3/08/2020	Scrape (no eggs)				MS Left (White) & unb
Bashams Beach	5/08/2020	Scrape (no eggs)				
Bashams Beach	10/08/2020	Nest (with eggs)	1	1		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Bashams Beach	13/08/2020	second egg confirmed	1	2		
Bashams Beach	16/08/2020	third egg confirmed	1	3		
Bashams Beach	21/08/2020	Failed since last visit (tide)	1			
Bashams Beach	23- 28/08/2020	scrapes				
Bashams Beach	31/08/2020	Nest (with eggs) at Shell Beach	2	1		MS Left (White) & unb
Bashams Beach	3/09/2020	second egg confirmed	2	2		
Bashams Beach	5/09/2020	third egg confirmed	2	3		
Bashams Beach	3/10/2020	Nest (with eggs)	2	unchecked		MS Left (White) & unb
Bashams Beach	4/10/2020	Suspect chicks	2			
Bashams Beach	5/10/2020	Chicks sighted (one egg never hatched)	2		2	
Bashams Beach	8/10/2020	Chicks sighted. One chick was claimed by UE & metal (assumed SA). One chick remained with MS White & unb	2		2	
Bashams Beach	8/10/2020	Both chicks sighted. One with MS & unb, the second abducted chick with UE & metal (assumed SA)	2		2	
Bashams Beach	9/10/2020	One chick sighted with MS & unb. Chick with UE & metal (assumed SA) failed (unknown)	2		1	
Bashams Beach	10/10/2020	Chicks sighted. MS & unb chick moved to Bashams Beach from Shell Beach	2		1	
Bashams Beach	8/11/2020	Fledged	2		1	
Bashams Beach	10/11/2020 - 2/12/2020	scrapes				
Bashams Beach	9/12/2020	Nest (with eggs)	3	2		MS Left (White) & unb
Bashams Beach	6/01/2021	Nest (with eggs)	3	unchecked		
Bashams Beach	8/01/2021	Chicks sighted	3		2	
Bashams Beach	20/01/2021	Chicks sighted (one chick failed; unknown)	3		1	
Bashams Beach	28/01/2021	Chicks sighted	3		1	
Bashams Beach	30/01/2021	Suspect chicks failed	3			
Bashams Beach	1/02/2021	Failed since last visit (unknown; suspect fox)	3			

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Middleton Beach West	3/08/2020	Scrape (no eggs)				UE Right (Orange) & Metal only Right (suspected SA Orange)
Middleton Beach West	6/09/2020	Nest (with eggs)	1	3		
Middleton Beach West	13/09/2020	Nest (with eggs)	1	unchecked		
Middleton Beach West	14/09/2020	Failed since last visit (suspect fox)	1			
Middleton Beach West	18/09/2020	Scrape (no eggs)				
Middleton Beach West	23/09/2020	Nest (with eggs)	2	2		UE Right (Orange) & Metal only Right (suspected SA Orange)
Middleton Beach West	25/09/2020	third egg confirmed	2	3		
Middleton Beach West	5/10/2020	Nest (with eggs)	2	unchecked		
Middleton Beach West	6/10/2020	Failed since last visit (unknown: suspect Magpie)	2			
Middleton Beach West	21/10/2020	Nest (with eggs)	3	1		UE Right (Orange) & Metal only Right (suspected SA Orange)
Middleton Beach West	23/10/2020	second egg confirmed	3	2		
Middleton Beach West	29/10/2020	Nest (with eggs) Last day UE orange sighted	3	2		UE Right (Orange) & Metal only Right (suspected SA Orange)
Middleton Beach West	1/11/2020	Failed since last visit (abandoned. UE missing whilst nesting)	3			
Middleton Beach West	8/11/2020	Scrape (no eggs) (metal - suspect SA orange - and unbanded)	3			Metal only Right (suspected SA Orange) & unb
Middleton Beach West	10/12/2020	Scrape (no eggs)				Metal only Right (suspected SA Orange) & unb
Middleton Beach West	18/12/2020	Nest (with eggs) - new partner, unbanded	4	1		Metal only Right (suspected SA Orange) & unb
Middleton Beach West	21/12/2020	second egg confirmed	4	2		
Middleton Beach West	16/01/2021	Nest (with eggs)	4	unchecked		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Middleton Beach West	20/01/2021	Suspect chicks (adults seen taking eggshell to waters' edge)	4			
Middleton Beach West	21/01/2021	Chicks sighted	4		2	
Middleton Beach West	28/01/2021	One chick failed (unknown; suspect silver gull) one remains	4		1	
Middleton Beach West	16/02/2021	Chicks sighted	4		1	
Middleton Beach West	17/02/2021	Suspect chicks failed (unknown; suspect roaming dog with no owners)	4			
Middleton Beach West	19/02/2021	Failed since last visit	4			
Goolwa beach	14/09/2020	Scrape (no eggs)				YV Right (White) & unb
Goolwa beach	18/09/2020	Nest (with eggs)	1	1		
Goolwa beach	20/09/2020	second egg confirmed	1	2		
Goolwa beach	23/09/2020	third egg confirmed	1	3		
Goolwa beach	16/10/2020	Nest (with eggs)	1	unchecked		
Goolwa beach	17/10/2020	Failed since last visit (unknown; suspect fox)	1			
Goolwa beach	28/10/2020	No birds sighted				
Goolwa beach	13/11/2020	No birds sighted				
Goolwa beach	23/03/2021	No birds sighted				
Middleton Beach (east)	26/08/2020	Scrapes				YV Right (White) & unb
	-					
	29/10/2020					
Middleton Beach (east)	28/10/2020	Nest (with eggs)	2	1		
Middleton Beach (east)	30/10/2020	second egg confirmed	2	2		
Middleton Beach (east)	2/11/2020	third egg confirmed	2	3		
Middleton Beach (east)	27/11/2020	Nest (with eggs)	2	unchecked		
Middleton Beach (east)	28/11/2020	Failed since last visit (unknown; suspect fox)	2			
Middleton Beach (east)	20/12/2020	Scrape (no eggs)				
Middleton Beach (east)	28/12/2020	Nest (with eggs)	3	2		YV Right (White) & unb
Middleton Beach (east)	24/01/2021	One egg missing on hatching day	3	1		

Site	Date	Nesting stage	Attempt #	egg #	chick #	band ID
Middleton Beach (east)	25/01/2021	Nest (with eggs) (no incubation)	3	1		
Middleton Beach (east)	26/01/2021	Nest (with eggs) (no incubation)	3	1		
Middleton Beach (east)	28/01/2021	Failed since last visit (final egg abandoned/overdue hatching)	3			



Photo: Hooded Plover fledgling at Port Willunga with adult DP, Sue and Ash Read.

Flagging

In total, 155, birds have been banded as part of BirdLife Australia's research program in South Australia since 2012. On the Fleurieu, 80 birds have been given engraved leg flags (Table 5). Green Adelaide has provided funding for greater investment in flagging of birds on the Adelaide Metro and Fleurieu, and in combination with the high reporting of resightings, we are able to gain great insight into the demographics of this population.

Reporting of flags is replied upon to build 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 five pairs of unbanded birds on the Fleurieu Peninsula this season: Aldinga/Aldinga North, Carrickalinga North, Carrickalinga Rotunda, Tunkalilla East, Sheepies, Parsons (scrapes only), Waitpinga West and Waitpinga Estuary. This season the unbanded pair at Moana were flagged and the new unbanded pair that appeared at Myponga Beach East were also flagged.

Birds are targeted for banding for a range of reasons including: where both adults of a breeding pair are unbanded, 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?

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. However, it can be confirmed that juveniles/chicks that were flagged in 2012/2013 and 2013/2014 (10 birds) have not been resighted, and could possibly have dispersed to the Coorong or Kangaroo Island. However, a number of adults flagged during these two earlier seasons continue to survive and breed, for example: BX (Orange) at Watsons Gap, HV (Orange) and DP (Orange) at Port Willunga, NA (Orange) at Ochre Cove, SS (Orange) observed in 2020/21 but not breeding (last seen breeding at Carrickalinga South in 2018/19), and suspected SA (Orange) Metal Only Right at Middleton Beach West.

Two long-term breeding birds, banded in the earlier seasons, have disappeared this season. UE (Orange), banded as a juvenile at Waitpinga West in February 2014, went missing mid nesting attempt at Middleton Beach West this season. Adult EY (Orange) was the second bird to be banded on the Fleurieu in May 2012 at Myponga Beach. It was suspected breeding at Myponga Beach still in 2019/20 however sadly it has not been seen this season. EY's long-term partner US (Orange, left), banded as an adult in August 2015 at Myponga Beach, has paired up with an unbanded bird and successfully fledged a chick this season. It was very interesting to see a second unbanded pair appear and nest at the eastern end of the small (450m long) Myponga Beach this season. On their second nest attempt at Myponga Beach East in October 2020 the pair were flagged WM Left (White) and YK Right (White).

This year the vehicle accessible section of Moana Beach was used as a breeding territory for the second season in a row. Prior to that a pair nested in the vehicle-free section of Moana beach in 2010/11. This was a priority pair to band this season, and so in October one of the adults was banded PM (White). We can now track any future movements and confirm it is the same bird nesting at this site.

Fledglings from the western coastline of the Fleurieu (Shelley Beach, Lady Bay to Henley Beach) were a priority this season. This is because the majority of fledglings to date have been banded on the southern Fleurieu Peninsula (partly related to the higher productivity of these beaches, e.g. Tunkalilla). With the concentration of fledgling success from Ochre Cove to Port Willunga South this season (5 fledglings from 4 pairs) a concerted effort was made to flag these. Fledglings banded were: Ochre Cove HN (White), Maslin Beach KV

(White), and Port Willunga South RJ (White). The Myponga Beach Estuary fledgling was flagged MN (White), and the two fledglings from Tunkalilla West were flagged CM right (White) and BN left (White). A decision was made not to band the Seacliff fledgling because it appeared to have low levels of movement/energy, and was observed being attacked by a Silver Gull even after it was fledged which may have injured it. The Normanville South fledgling soon left the site so was not banded.

The male from Seacliff (YL White), flagged as a fledgling in February 2019, established his first breeding territory at Henley Beach this season. This is the most northerly breeding site established on the Adelaide Metro/Fleurieu Peninsula coastline. Unfortunately, YL was not successful with the eggs failing just as hatching was beginning to occur. However, it was a landmark occasion for a Hooded Plover to have nested so far north on Adelaide's coast, presumably where they once nested.

EW (Orange) was banded as a juvenile from Lands End in November 2015, and has bred at Tunkalilla West since the 2017/18 season. At 6 years of age, EW (Orange) went missing during the third attempt at Tunkalilla West this season, and was replaced by PT (White) which successfully fledged 2 chicks. PT (White) is a female that was flagged as a fledgling at Parsons Beach in January 2019.

The disappearance of EW (Orange) from Tunkalilla West this season is the ninth Hooded Plover from Tunkalilla to go missing (possibly dead) from Tunkalilla. Over eight seasons of monitoring flagged birds at Tunkalilla, ST (Orange), KW (Orange), WE (Orange), UB (Orange), LA (Orange), DK (Orange), MT (Orange), YB (White) and now EW (Orange) have either been found dead on the beach (LA Orange was found dead in 2016/17), or not sighted again. None of these birds have been sighted on Kangaroo Island, or anywhere else within South Australia. These are just the birds we are able to confirm, as we cannot know if an unbanded bird is the same one returning to a territory each season. This is why we are recommending remote camera use next season, as this high mortality rate, is found nowhere else on the coast.

VH (Orange) was banded as an adult at Yilki in February 2016, and has been observed breeding with its partner KV (Orange) (banded as an adult at the Inman River Outlet in November 2013), since the 2015/16 season. The pair have had significant fledgling success over those seasons (9 fledglings), however numbers of failed attempts have been increasing since the 2018/19 season. VH (Orange) was seen at the start of the season at

Yilki, but then disappeared. RR (Orange) nested at the Inman River outlet in 2019/20, however this season it joined KV (Orange) at Yilki, and the pair unfortunately had 7 failed nesting attempts.

In February 2020, the Bashams Beach family were flagged (adults MA White Right, and MS White Left) along with their fledgling HC Right (White). However, MA (White) was not observed this season, and MS (White) bred with an unbanded bird.

Other sightings of note were flocks of up to 18 Hooded Plovers at the Torrens Outlet at West Beach, Tennyson dunes and West Lakes Beach during April, May and early June 2021. Including flagged birds MR (White) the West Beach nesting adult, YL (White) fledged from Seacliff in February 2019 and bred at Henley Beach this season, RV (Orange) a fledgling from Carrickalinga Rotunda in February 2016 and breeding at Maslin Beach, JR left (White) a female fledgling from Seacliff banded in December 2019, two recent fledglings banded in February 2021: HN (White) from Ochre Cove and MN (White) from Myponga Beach, WM left (White) one of the new adult pair breeding at Myponga Beach banded in October 2020, at least 3 unbanded sub-adults, and a number of unbanded adults.

BirdLife Australia's current priorities for banding include at least one bird from unbanded breeding pairs (listed above). The unbanded pair at Tunkalilla East are a priority given the high number of Hooded Plovers that have disappeared from Tunkalilla. It is important to be able to identify individuals on this beach to detect any further changes and to seek to understand these. Fledglings are a priority again for banding next season where possible, in particular for Metro Adelaide beaches, Carrickalinga – Lands End, and South Coast.



Photo: Releasing RJ (White) at Port Willunga South, Kerri Bartley

Table 5. A summary of leg flagged Hooded Plovers captured and banded on the Fleurieu Peninsula to June 2021. All birds were captured by licensed and permitted banders (Grainne Maguire, Terry Dennis, Meg Cullen, Kasun Ekanayake, 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	Partner/parent/sibling Flag
Myponga Beach	8/05/12	Adult	Female	metal	EY (orange)		
Maslin Beach	8/05/12	Adult	Female	metal	MX (orange)		
Watsons Gap	18/01/13	Adult	Female	metal	AU (orange)		Partner: BX (orange)
Parsons Beach (far SW end)	18/01/13	Adult	Female	metal	CL (orange)		Partner: EV (orange)
Waitpinga Beach (E end)	18/01/13	Adult	Female	metal	KJ (orange)		
Parsons Beach (far SW end)	18/01/13	Adult	Male	metal		EV (orange)	Partner: CL (orange)
Tunkalilla Beach 3rd house East	19/01/13	Juvenile	Male	metal	DK (orange)		Sibling: EM (orange)
Tunkalilla Beach 3rd house East	19/01/13	Juvenile	Male	metal	EM (orange)		Sibling: DK (orange)
Watsons Gap estuary	20/01/13	Adult	Male	metal		BX (orange)	Partner: AU (orange)
Carrickalinga estuary	21/01/13	Adult	Male	metal	CK (orange)		
Carrickalinga estuary	21/01/13	Adult		metal		LP (orange)	
Snapper Point (Pt Willunga end)	22/01/13	Adult	Male	metal	HV (orange)		
Carrickalinga North (N end)	22/01/13	Adult	Likely female	metal	NA (orange)		Suspect partner: AR (orange)
Carrickalinga North (N end)	22/01/13	Adult	Male	metal		AR (orange)	Suspect partner NA (orange)
Carrickalinga (toilet block)	27/09/13	Subadult	Male	metal	DJ (orange)		
Lady Bay Shelley Beach	27/09/13	Adult		metal	SB (orange)		Partner: LD (orange)
Carrickalinga Pitmans leap access	27/09/13	Adult	Male	metal	SS (orange)		Partner: CK (orange)
Lady Bay Shelley Beach	27/09/13	Adult		metal		LD (orange)	Partner: SB (orange)
Inman River outlet	13/11/13	Adult		metal	KV (orange)		
Bashams Beach	13/11/13	Adult	Male	metal		SA (orange)	
Tunkalilla Western estuary	14/11/13	Adult	Male	metal	KW (orange)		

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
Tunkalilla far West	14/11/13	Adult	Female	metal	LA (orange)		
Tunkalilla creek/3rd house East	14/11/13	Adult		metal	ST (orange)		
Tunkalilla mid-west estuary	14/11/13	Adult	Male	metal		MT (orange)	Partner: ME (orange)
Callawonga Beach	10/02/14	Chick (25 days)		metal	KP (orange)		
Waitpinga Beach East	10/02/14	Chick (30 days)		metal	PD (orange)		Parent: KJ (orange). Sibling: PR (orange)
Waitpinga Beach East	10/02/14	Chick (30 days)		metal	PR (orange)		Parent: KJ (orange). Sibling: PD (orange)
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 (orange)
Port Willunga North	29/08/14	Adult	Female	metal		DP (orange)	Partner: LP (orange)
Ochre cove, Maslins Beach	16/10/14	Chick	Male	metal	SR (orange)		Parents: TJ (orange) & NA (orange)
Ochre cove, Maslins Beach	16/10/14	Adult	Male	metal	TJ (orange)		Partner: NA (orange)
Tunkalilla Beach mid-west estuary	17/10/14	Adult	Female	metal	ME (orange)		Partner: MT (orange)
Tunkalilla Beach Western estuary	17/10/14	Adult	Female	metal		WE (orange)	Partner: KW (orange)
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		metal		US (orange)	Partner: EY (orange)
Lands End	24/11/15	Juvenile		metal	EW (orange)		Parent: JW (orange)
Lands End	24/11/15	Adult		metal	JW (orange)		
Normanville North/Carrickalinga Sands	28/11/15	Juvenile		metal	MV (orange)		

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
Myponga Beach	28/11/15	Juvenile		metal	UV (orange)		Parents: EY (orange) and US (orange)
Carrickalinga North/rotunda	23/02/16	Juvenile	Female	metal	RV (orange)		Parent: LP (orange)
Yilki	29/02/16	Juvenile	Female	metal	VH (white)		Parents: KV (orange) and VH (orange)
Lands End	29/02/16	Juvenile	Female	metal	ZW (white)		Parent: JW (orange). Sibling: JZ (White)
Lands End	29/02/16	Juvenile	Male	metal		JZ (white)	Parent: JW (orange). Sibling: ZW (White)
Yilki	29/02/16	Adult	Female	metal		VH (orange)	
Waitpinga Beach East	23/03/16	Juvenile	Male	metal		YB (white)	Parent: KP (orange)
Kent Reserve, Victor Harbor	6/03/17	Juvenile		metal	DT (white)		Parent: RR (orange)
Yilki	6/03/17	Juvenile	Male	metal	JY (white)		
Yilki	6/03/17	Juvenile		metal	YV (white)		Parents: VH (orange) & KV (orange)
Port Stanvac	12/02/18	Adult	Female	metal	ES (white)		Partner: AR (orange)
Waitpinga East	13/03/18	Adult		metal	UA (white)		
Hindmarsh River Mouth	20/03/18	Adult	Male	metal	PX (white)		
Tunkalilla Beach	4/04/18	Juvenile	Male	metal	TK (white)		Parent: YB (white)
Seacliff	10/09/18	Adult		metal	XS (white)		
Parsons Beach	4/01/2019	Fledgling	Male	metal	PR (white)		Parent: EV (orange). Sibling: PT (White)
Parsons Beach	4/01/2019	Fledgling	Female	metal		PT (white)	Parent: EV (orange). Sibling: PR (white)
Normanville South	11/02/2019	Adult		metal	NC (white)		
Seacliff	11/02/2019	Fledgling	Male	metal	YL (white)		Parent: XS (white)

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
Snapper Point	30/04/2019	Adult		metal	JT (white)		
Hallett Cove	3/09/2019	Adult	Female	metal	MR (white)		
Maslin Beach	5/12/2019	Fledgling	Female	metal	KZ (white)		Parent: NA (Orange)
Seacliff	10/12/2019	Fledgling	Female	metal	CV (White)		Parent: XS (White). Sibling: JR (White)
Seacliff	10/12/2019	Fledgling	Female	metal		JR (White)	Parent: XS (White). Sibling: CV (White)
Bashams Beach	17/02/2020	Adult	Female	metal	MA (White)		Partner: MS (White)
Bashams Beach	17/02/2020	Adult	Male	metal		MS (White)	Partner: MA (White)
Bashams Beach	17/02/2020	Fledgling	Female	metal	JM (White)		Parents: MS (White) & MA (White)
Hindmarsh River Mouth	11/03/2020	Fledgling	Male	metal	HC (White)		Parent: PX (White)
Moana	20/10/2020	Adult		metal	PM (White)		
Myponga Beach East	20/10/2020	Adult		metal	YK (White)		Partner WM left (White)
Myponga Beach East	20/10/2020	Adult		metal		WM (White)	Partner YK right (White)
Maslin Beach	29/12/2020	Fledgling		metal	KV (White)		Parents: RV right (Orange) & unb
Port Willunga South	19/1/2021	Fledgling		metal	RJ (White)		Parents: JT right (White) & unb
Ochre Cove	1/2/2021	Fledgling		metal	HN (White)		Parents: NA right (Orange) & unb
Myponga Beach Estuary	25/2/2021	Fledgling		metal	MN (White)		Parents: US left (Orange) & unb

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
Tunkalilla West	16/4/2021	Fledgling		metal	CM (White)		Parents: PT left (White) & unb. Sibling: BN left (White).
Tunkalilla West	16/4/2021	Fledgling		metal		BN (White)	Parents: PT left (White) & unb. Sibling: CM right (White)



Photo: Juvenile (KV) fledged from Maslin Beach, observed at Snapper Point, Sue and Ash Read

Breeding Site Management

Of the 98 confirmed nests on the Fleurieu Peninsula, 69 (70.4%) nests had some form of management (Table 6). Along Green Adelaide's coast 28 out of the 29 (96%) nests were managed (one nest at Aldinga North being washed away by a high tide/storm event the day after it was found before management could be installed). Along the Fleurieu coastline 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. No management occurred at 29 (29.6%) sites, all of which were remote sites, except for three in more urban areas, two of which had nests fail the day after they were found (Aldinga North and Yilki). There was management (signs at access/signs at nest and fencing) installed at a number of remote sites however, including Sheepies Beach, and three attempts at Waitpinga Beach, a great achievement by volunteers to undertake this difficult task. Two nests (2%) were signed only at the access point, one at remote Tunkalilla West (perfectly reasonable considering the remote nature of the site), and the other at Myponga Beach East which also had a council by-law sign installed at the beach (fencing attempt was made but the conditions were too windy and magpies were present so it did not go ahead). The remaining 67 (68.4%) nests had rope fences and signs as a minimum (with either signs at access, signs at nest or a combination of both). Two sites, Moana and Port Willunga South also had permanent fencing. In the case of Moana the birds nested either behind the dune permanent fencing or behind the newly installed permanent fencing surrounding the Pedlar Creek Estuary installed by Council. The permanent fencing at Port Willunga South provided a safe area for the chicks to retreat to and used it as a short cut to the temporarily fenced-off creek. Of the 26 nests that hatched, 23 (88.5%) had rope fencing with either temporary signs at the access or signs at the nest site, one nest (3.8%) had just access signs (Tunkalilla West) and two nests (7.7%) had no management as they were very remote sites (Tunkalilla East and Ballaparudda/Callawonga).

Nearly all sites also have permanent signage in place, so those remote sites which do not have temporary signage or fencing, still have permanent signs which can inform beach-goers to keep an eye out during spring and summer months.

Of the 12 nests that successfully produced fledglings, two sites (16.7%) had no management due to being such remote sites (Tunkalilla East and Ballaparudda/Callawonga), one nest (8.3%) had just temporary access signs (another remote site, Tunkalilla West), and the remaining 9 fledged nests (75%) had a minimum of signs at the nest and a rope fence.

At four sites, Aldinga/Aldinga North, Sellicks, Normanville South and Middleton Beach West volunteers were engaged to act as site guardians to assist with the protection of the chicks and educate beach users during peak times. In particular, wardens were present at Aldinga/Aldinga North and Sellicks to speak with beach-drivers to inform them of the location of the chicks. Chick shelters were used at West Beach, Seacliff, Moana, Sellicks and Normanville South to provide extra refuge for the chicks to hide in when threatened, as there is minimal shelter on those beaches for chicks to hide from predators and recreational users. Chick banners were used at West Beach, Seacliff, Moana, Ochre Cove, Maslin Beach, Port Willunga, Port Willunga South, Aldinga and Sellicks. Chick banners are used in high recreational use areas to indicate a change from nest to chick presence and raise awareness of this very vulnerable stage. They are particularly useful on beaches where vehicles and horses have access as the large banner can be seen from a distance away.

Of the 69 nests that had some form of management, 60 nests (87%) had council by-law signs installed that require dogs to be on-lead near the breeding zones. Of the 26 hatched nests (i.e. sites with chicks), 21 (80.8%) also had the council dog by-law signs installed (only West Beach and Tunkalilla West would have been without these by-law signs). This is an excellent outcome which has slowly grown in representation across the region since 2017 when the first by-law changes were made at Alexandrina Council, City of Victor Harbor and DC Yankalilla. City of Charles Sturt compliance staff still undertook compliance visits this season to encourage leashing, and enforce the day-light-savings leashing regulations, near the Hooded Plover breeding sites. City of Charles Sturt have very recently (June 2021) approved inclusion in the dog by-law to have dogs on lead around both Hooded Plover and Red-capped Plover breeding areas. Dogs are not permitted on Shelley Beach and there is a permanent sign to inform beach-goers of this. Dogs are also not permitted on Tunkalilla between 1st December and end of February. City of Marion have made the beach at the Lower Field River outlet (Hallett Cove Hooded Plover site) a dogs on leash zone at all times due to the environmental significance of the area. This will benefit any future pairs that establish there. Also refer below under Management and Awareness Raising Activities for a summary of the compliance visits undertaken by councils this season, and efforts undertaken to raise awareness in the community about why we need to share the beach and have dogs on leads near the breeding areas.



Photo: Moana fenced nest and signage, Emma Stephens.

Table 6. Summary of management across sites during the 2020/21 breeding season for each nesting attempt.

Site/Territory	date nest found	Hatched?	Fledged?	Management
Henley Beach	6/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Information update sign hatching around 2 October
West Beach	27/08/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Shelters, Banners Chick Update Sign
West Beach	16/11/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence Update Sign
Seacliff	23/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Update Sign, Council Signs
Seacliff	28/09/2020	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Shelters, Update Sign, Council Signs
Seacliff	29/12/2020	Y	N	Sign Access Temporary, Sign Nest, Banners, Rope fence, Shelters, Update Sign, Council Signs
Moana Beach	14/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Permanent fence, no parking signs, council dogs on leash by-law sign, breeding update signs.
Moana Beach	2/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, no parking signs, council dogs on leash by-law sign, breeding update signs.
Moana Beach	3/10/2020	N	N	Sign Nest, Rope fence, Permanent fence, no parking signs, council dogs on leash by-law sign, breeding update signs.
Moana Beach	8/11/2020	Y	N	Sign Nest, Banners, Rope fence, Permanent fence, Shelters, no parking signs, council dogs on leash by-law sign, breeding update signs.
Moana Beach	31/12/2020	Y	N	Sign Nest, Banners, Rope fence, Permanent fence, Shelters, no parking signs, council dogs on leash by-law sign, breeding update signs.
Moana Beach	22/02/2021	N	N	Sign Nest, Rope fence, Permanent fence, no parking signs, council dogs on leash by-law sign, breeding update signs.
Ochre Cove, Maslins	8/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs

Site/Territory	date nest found	Hatched?	Fledged?	Management
Ochre Cove, Maslins	28/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs
Ochre Cove, Maslins	11/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs
Ochre Cove, Maslins	3/10/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs
Ochre Cove, Maslins	6/12/2020	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Maslin Beach	5/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Maslin Beach	2/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Maslin Beach	1/11/2020	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Port Willunga	8/09/2020	N	N	Sign Nest, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Port Willunga	1/10/2020	Y	Y	Sign Access Temporary, Sign Nest, Banners, Rope fence, Council dogs on leash by-law sign, breeding update signs.
Port Willunga South	9/09/2020	Y	N	Sign Access Temporary, Sign Nest, Banners, Rope fence, Permanent fence, Council dogs on leash by-law sign, breeding update signs.
Port Willunga South	26/10/2020	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Permanent fence, Council dogs on leash by-law sign, breeding update signs.
Aldinga/Aldinga Nth (Aldinga Beach Rd)	15/11/2020	N	N	none (nest failed day after found)
Aldinga/Aldinga Nth (Aldinga Beach Rd)	2/12/2020	Y	N	Sign Access Temporary, Sign Nest, Banners, Rope fence, no parking signs, council dogs on leash by-law sign.
Sellicks Beach	11/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, no parking signs, council dogs on leash by-law sign.

Site/Territory	date nest found	Hatched?	Fledged?	Management
Sellicks Beach	29/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, no parking signs, council dogs on leash by-law sign.
Sellicks Beach	2/12/2020	Y	N	Sign Access Temporary, Sign Nest, Banners, Rope fence, Shelters, Wardens, no parking signs, council dogs on leash by-law sign.
Myponga Beach East	11/09/2020	N	N	Sign Nest, Rope fence, council dogs on leash by-law sign.
Myponga Beach East	6/10/2020	N	N	Sign Access Temporary, council dogs on leash by-law sign
Myponga Beach East	4/01/2021	N	N	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Myponga Beach Estuary	11/09/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Myponga Beach Estuary	24/12/2020	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Carrickalinga North	27/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Carrickalinga Rotunda	1/11/2020	N	N	None
Carrickalinga Rotunda (suspect nest)	11/11/2020	N	N	None
Carrickalinga Rotunda	21/11/2020	N	N	Sign Nest, Rope fence, council dogs on leash by-law sign
Carrickalinga Rotunda	23/12/2020	N	N	Sign Nest, Rope fence, council dogs on leash by-law sign
Normanville South	9/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Normanville South	10/10/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, council dogs on leash by-law sign
Normanville South	16/12/2020	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, shelters, wardens, council dogs on leash by-law sign
Shelley Beach (lady bay)	28/11/2020	N	N	Sign Nest, Rope fence
Tunkalilla West EW Orange	23/09/2020	N	N	None
Tunkalilla West EW Orange	30/11/2020	N	N	None
Tunkalilla West EW Orange	11/12/2020	N	N	None
Tunkalilla West PT White	24/12/2020	N	N	None

Site/Territory	date nest found	Hatched?	Fledged?	Management
Tunkalilla West PT White	10/02/2021	Y	Y	Sign Access Temporary, breeding update signs
Tunkalilla Midway	9/09/2020	N	N	None
Tunkalilla Midway	13/10/2020	N	N	None
Tunkalilla Midway	16/11/2020	N	N	None
Tunkalilla Midway	18/12/2020	N	N	None
Tunkalilla Midway	7/01/2021	N	N	None
Tunkalilla Midway	10/02/2021	N	N	None
Tunkalilla East	16/09/2020	N	N	None
Tunkalilla East	13/10/2020	N	N	None
Tunkalilla East	16/11/2020	N	N	None
Tunkalilla East	24/12/2020	Y	Y	None
Ballaparudda/Callawonga	18/10/2020	Y	Y	None
Ballaparudda/Callawonga	28/01/2021	N	N	None
Sheepies beach	14/11/2020	N	N	None
Sheepies beach	17/12/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence
Waitpinga Beach (east)	1/11/2020	N	N	None
Waitpinga Beach (east)	29/11/2020	N	N	None
Waitpinga Beach (east)	8/12/2020	N	N	None
Waitpinga Beach (east)	31/12/2020	N	N	None
Waitpinga Beach (east)	26/01/2021	N	N	None
Waitpinga Estuary	1/11/2020	N	N	None
Waitpinga Beach (west)	17/09/2020	N	N	None
Waitpinga Beach (west)	13/10/2020	N	N	None
Waitpinga Beach (west)	24/11/2020	N	N	None
Waitpinga Beach (west)	8/12/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence
Waitpinga Beach (west)	9/01/2021	N	N	Sign Nest, Rope fence
Waitpinga Beach (west)	13/01/2021	N	N	Sign Access Temporary, Sign Nest, Rope fence

Site/Territory	date nest found	Hatched?	Fledged?	Management
Yilki	4/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw signs, breeding update signs
Yilki	24/09/2020	N	N	None (nest failed day after found)
Yilki	6/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, dog bylaw sign, breeding update signs
Yilki	17/11/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, dog bylaw signs, breeding update signs
Yilki	11/12/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, dog bylaws, breeding update signs
Yilki	30/12/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, dog bylaws, breeding update signs
Yilki	31/01/2021	N	N	Sign Access Temporary, Sign Nest, Rope fence, dog bylaws, breeding update signs
Victor Central/Olivers Reef/Hindmarsh River Mouth	8/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council by-law sign, breeding update signs
Victor Central/Olivers Reef/Hindmarsh River Mouth	19/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-Law sign, breeding update signs
Victor Central/Olivers Reef/Hindmarsh River Mouth	26/11/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-Law signs, breeding update signs
Victor Central/Olivers Reef/Hindmarsh River Mouth	10/12/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-Law sign, breeding update signs
Watsons Gap	30/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Watsons Gap	21/09/2020	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs. This site had extensive management as the chick was reared in captivity

Site/Territory	date nest found	Hatched?	Fledged?	Management
Watsons Gap	29/11/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Watsons Gap	30/12/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Bashams Beach	10/08/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Bashams Beach	31/08/2020	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Bashams Beach	9/12/2020	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Middleton Beach West	6/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw Signs, breeding update signs
Middleton Beach West	23/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council by-law signs, breeding update signs
Middleton Beach West	21/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs, breeding update signs
Middleton Beach West	18/12/2020	Y	N	Sign Access Temporary, Rope fence, Wardens, Council Bylaw signs, breeding update signs
Middleton Beach (east)/Goolwa beach	18/09/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw Signs
Middleton Beach (east)/Goolwa beach	28/10/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs
Middleton Beach (east)/Goolwa beach	28/12/2020	N	N	Sign Access Temporary, Sign Nest, Rope fence, Council Bylaw signs

Management and Awareness Raising activities during 2019/20

In the 2020/21 breeding season, the following activities were carried out:

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.
- BirdLife Australia and the Volunteer Coordinator met with each Council, and National Parks staff (Newland Head CP) to discuss the start of the season and go through the new 2019/20 Council Report Cards. Many of the actions below (management and awareness raising) resulted from recommendations in the reports discussed at the meetings. The excellent data (monitoring and threat) collection in the portal from volunteers and staff is reported through these council Report Cards and recommendations are made accordingly.
- Dog management and compliance:
 - Council dog by-law signs were installed at multiple sites (see Breeding Site Management above).
 - After public consultation, with strong support for dog-by-law amendments, City of Charles Sturt council adopted specific by-laws requiring leashing of dogs within 100 metres of a sign installed by the Crown or Council on land that indicates a Hooded and/or Red Capped Plover breeding site, nest, eggs or chicks. The motion for by-law amendments was carried unanimously.
 - BirdLife Australia staff provided a deputation to council to request a specific inclusion in the Dog By-law that dogs must be on lead around Hooded Plover breeding sites. The response has been positive and we are hopeful this change may occur before the next breeding season begins. This, along with City of Charles Sturt, would be the final council to include this provision within the Dog By-law. The deputation was also an awareness raising opportunity and a platform to start discussions on how to improve chick survival at beaches with vehicle access.
 - Hooded Plover training sessions were provided to Council compliance staff at Alexandrina Council, City of Victor Harbor, City of Onkaparinga, City of Marion, City of Marion, City of Holdfast Bay and City of Charles Sturt. A big thanks to Volunteer Regional Coordinators and volunteers who assisted with this, in particular at City of Holdfast Bay where Ligita Bligzna and John Cobb

met with many contractor staff over multiple visits to provide information on the Hooded Plovers.

- Each council's compliance team continued to undertake compliance visits to Hooded Plover breeding sites during this season. Where possible councils have provided records from the 2020/21 season:

City of Holdfast Bay compliance at the Hooded Plover breeding site at Seacliff:

- 110 visits, 144 hours
- 3241 dogs (September – December 2020 only)
- 91.2% on lead, 8.8% (286 dogs) off lead but subsequently were put on lead.
- 16 warnings and 13 expiations issued during the breeding season specifically within the Hooded Plover breeding zone.
- Approximately 25% of the beach patrol time was spent monitoring the Hooded Plover breeding zone.
- Spoken with at least 315 dog walkers.

City of Victor Harbor compliance visits to the Hooded Plover breeding sites at Yilki and Hindmarsh River/Oliver's Reef, from September 2020 – February 2021:

- Approximately 207 visits, 52 hours
- 116 dogs: 94% (109) of dogs on lead, 6% (7) dogs off lead.
- Officers spoke with 70 people.
- 2 warnings, no expiations.

City of Charles Sturt beach compliance visits incorporated the Hooded Plover breeding sites at Henley Beach and West Beach (Torrens Outlet) and also the Red-capped Plover breeding site at West Lakes Shore. Patrols were undertaken between August 2020 and March 2021, however were concentrated around breeding times. The information below focuses on the two dedicated beach-patrol officers, and does not include the regular and out of hours patrols. As such the presence on the beach would have been even greater than what is shown below.

- 290 visits, 237 hours.
- Grange – Henley (including the Henley Beach Hooded Plover site): 116 patrols
- West Beach – Torrens Outlet (including the West Beach Hooded Plover and Red-capped Plover sites): 82 patrols

- Tennyson (including West Lakes Shore Red-capped Plover site): 92 patrols.
- Leashing rates (numbers include dogs observed before 10am, dogs can be off lead before 10am during daylight saving hours):
 - Henley Beach: 128 dogs, 77% off lead (98 dogs), and 23% on lead (30 dogs).
 - West Beach: 51 dogs, 20% off lead (10 dogs), and 80% on lead (41 dogs). One expiation following a warning nearby but not directly at nesting site.
 - West Lakes Shore (Red-capped Plover site): 16 dogs, 19% off lead (3 dogs), and 81% on lead (13 dogs).
 - Officers had 67+ educational conversations with beach-goers (including at the Henley Beach dog's breakfast workshop).



Photo: City of Victor Harbor compliance staff training at Yilki, Emma Stephens.



Photo: City of Onkaparinga ranger training at Moana, Kerri Bartley.

- Fox management:
 - A meeting was held at City of Victor Harbor with stakeholders from across the South Coast councils (DC Yankalilla, City of Victor Harbor, Alexandrina Council), National Parks and Wildlife staff (Newland Head CP rangers), DEW staff, Green Adelaide, Hills and Fleurieu Landscape Board, BirdLife Australia, Volunteer Regional Coordinator, and a local vertebrate pest control contractor to plan and discuss how to control the increasing fox problem along the south coast. The outcomes from this meeting includes some of the actions listed below.
 - Alexandrina Council carried out searches for fox dens at Watsons Gap.
 - A letter drop to residents surrounding Watsons Gap was a team effort between Green Adelaide, Hills and Fleurieu Landscape Board, BirdLife Australia, Alexandrina Council and volunteers. The letter included information about the importance of any fox den sightings and keeping dogs on lead. This resulted in two responses with sightings of foxes, but no fox dens. However, it was a good opportunity to raise awareness in the local community.
 - A similar newsletter article was included in the “Beyond” development residents’ newsletter behind Watsons Gap.
 - Facebook posts also requested the public to keep an eye out for fox dens (across the south coast in particular) and to inform us of any den locations.

- National Parks Rangers installed a Canid Pest Ejector at Waitpinga East along with a nest camera. Unfortunately, the nest camera showed that foxes did not approach. The location will be changed next season in attempt to capture the interest of local foxes.
- Two FoxWatch Ultrasonic Deterrent devices were purchased by Green Adelaide. The devices arrived in time to trial at the last nesting attempt at Waitpinga East (a dog-free beach) but unfortunately the nest failed the night before installation (evidence supported fox predation). The device will be tested at Hooded Plover nesting sites next season to firstly ensure Hooded Plovers do not have any adverse reaction to the device (ultrasonic frequencies vary between animals and birds have a different frequency to fox). However, with permission from Alexandrina Council the device has been tested on the beach with a number of volunteer's dogs displaying no reaction. BirdLife Australia and Green Adelaide are hoping to approach councils to gain permission to use the device where fox predation is an issue and limited options for fox control exist.
- Victor Harbor Coastcare were successful with winning a Coast Protection Board grant to control *Casuarina glauca* on the Bluff (to the west of Yilki). The Coastal Conservation Officer for the South Coast has liaised with the contractor undertaking the work to keep an eye out for any fox dens.
- Wendy White in her role as Volunteer Coordinator sent weekly email updates to relevant councils (that have more than one pair) with breeding updates, permission for fencing and highlighting any key issues. Councils included: City of Onkaparinga, DC Yankalilla, City of Victor Harbor, and Alexandrina Council. City of Holdfast Bay and City of Charles Sturt are regularly communicated with regarding similar updates in those council areas.
- The Volunteer Regional Coordinators have done an exceptional job again this season with liaising with councils, and volunteers, to ensure management is undertaken in a timely and appropriate manner. Volunteer, and in a number of cases, Council, involvement with installation and on-going management of fencing and signs throughout the season is immense and the program would not be what it is without it.
- Hooded Plover capture and flagging was undertaken. Entanglement rescue at Seacliff with assistance from Zoos SA veterinarian.
- Zoos SA veterinary pathologist undertook necropsies for Hooded Plover bodies found (Parsons Beach and Moana).

- Liaison with Surf Life Saving Clubs regarding specific nests/chicks and also with the SLS SA Event Coordinator.
- City of Onkaparinga permanently fenced the Pedler Creek estuary as a conservation zone, and also implemented new signage across the coast focusing on local native wildlife including the Hooded Plover and Red-capped Plover.
- BirdLife Australia staff and volunteers provided submissions to: Green Adelaide and Hills and Fleurieu Landscape Board Plans, City of Charles Dog By-law review and Draft Animal Management Plan, City of Onkaparinga's Managing Vehicle Compliance on Protected Foreshore Areas, Sellicks Beach Motorcycle Race and the coastal pathway design at Port Willunga, City of Victor Harbor's Your Say Coastal Changes and Storm Events, City of Holdfast Bay's Annual Business Plan and Environment Strategy. The Sharing our Shores staff and volunteers are also part of the Community Reference Group for DEW's 'Securing the future of our coastline' for the Adelaide Metro coast.
- After many years of work, Green Adelaide Coast and Seas staff were able to gain access to the key for the Tunkalilla gate for volunteer access. David and Sue Thorn continue to undertake on-going liaison with property managers to access the remote sites Callawonga and Ballaparudda, and recently gained vehicle access to Sheepies to install management.

Awareness raising activities:

- Start of Season VRC meeting.
- Volunteer Regional Coordinators and volunteers assisted with many of the events for the season and provided ongoing mentoring of new volunteers after workshops. VRCs, in particular, provided multiple BNB Hub and Portal training sessions for new volunteers. 29 new volunteers were recruited this season through a variety of avenues.
- Hooded Plover Training Workshops to recruit and train new volunteers at Maslin Beach (which also formed part the "Encounter Marine Park of the Month" event), and Moana. The first workshop focused on an introduction to the birds and the second a more detailed workshop on monitoring. A third workshop was run at West Beach focusing on Hooded Plover and Red-capped Plovers. All workshops had field components.



Photo: Hooded Plover and Red-capped Plover workshop at West Beach, Claire Lock.

- Seven online Hooded Plover training sessions from BirdLife Australia National Office relating to Hooded Plovers including monitoring training, MyBeachBird Data portal training, biennial count training, nest protection, advocacy, beach and dune weeds, and communicating with the public.
- Two National Hooded Plover Regional Coordinators meeting, online zoom sessions.
- Hooded Plover End of Season Debrief (VRC).
- Hooded Plover End of Season celebration lunch and afternoon for volunteers and staff at Sellicks Beach Community Hall with over 60 participants attending. Presentations by Emma Stephens, Wendy White, John Cobb, Ligita Bligzna, Sue and Ash Read, and David and Sue Thorn, *On the Right Track* documentary preview from Davide Gaglio, and group discussion time.
- The local Hooded Plover “Watch out for Hoodies” brochure has been re-designed to reflect Green Adelaide branding and has been printed. Funding from Green Adelaide will also enable a re-stock of many of the awareness raising materials (dog leads, stickers etc).



New Green Adelaide “Watch out for Hoodies” brochure.

- Low-vis vests were provided to volunteers this season with funding from Green Adelaide. The purpose of the vests is for volunteers to be easily identified on the beach, to further raise awareness about the birds, the program and to encourage others to volunteer. When volunteers need to approach nests or maintain fencing/signage etc, the vests signify that the work is being undertaken in an official capacity.



- VRCs and BirdLife staff coordinated the 2020 Biennial Count across the Adelaide Metropolitan and Fleurieu Peninsula coastline, with 48 sites being monitored by 51 volunteers. VRCs also provided training sessions for volunteers involved.
- BirdLife Australia presentation to Green Adelaide's Coastal Ambassador's program.
- BirdLife Australia staff assisted with the Green Adelaide Board tour at the Torrens Outlet, West Beach.
- Wendy White as Volunteer Coordinator provided presentations to:
 - The Whale Centre at Victor Harbor,
 - Alexandrina Council Environment Advisory Committee,
 - Ratalang (Basham Beach) Group,
 - Youth in Action Community Conservation Action (both younger and older member groups), and the
 - Normanville Nippers.

Photo: Youth in Action Community Conservation Action group at Moana, Wendy White



- Sue and Ash Read provided a presentation to the Friends of Aldinga Scrub CP.
- Ligita Bligzna provided a zoom presentation as part of 5049 Coastal Community Nature Celebration event and spoke with representatives of Endangered Species Supporters Australia at Seacliff.
- Hooded Plover Information Sessions/Dog's Breakfast workshops held at Henley Beach, Moana, Aldinga North, Sellicks and Hindmarsh River outlet.

Photos: Dog's Breakfast, Henley Beach, Cath Leo Photography





Photo: Information session, Sellicks Beach, Wendy White

- Grant funds were won for additional fencing from Victor Harbor Rotary.
- Brighton Primary School undertook a STEM project on Hooded Plovers at Seacliff. The school group wanted to raise awareness in the local community so they produced 2 books for the school and local council library, coffee cup holders with Hooded Plover artwork (used at a local Brighton café), Hoodie postcards (supplied to the local Somerton Surf Life Saving Club) and they also put messages on the digital signage board out the front of their school. VRCs Ligita Bligzna and John Cobb, and volunteers provided the students with information on the Hoodies at school and at the beach. The local council library has a Hooded Plover display with the school's books and is running a Hooded Plover event in June which Ligita will present at.



Photo: Hooded Plover e-signage at Brighton Primary School (left, Brighton Primary School) and students being shown the birds on the beach (Tony Flaherty).



- Hooded Plover display (photos and resources) at Goolwa Library.



- The Normanville Natural Resources Centre and South Coast Environment Centre continue to feature their permanent Hooded Plover displays.
- Weekly updates via Triple Z Community Radio Program are sponsored by Sue and Ash Read during the breeding season. Sue and Ash Read provide the weekly updates from across the Onkaparinga beaches (and Myponga Beach) to volunteer Dudley Corbett who is the radio presenter. Sue and Ash Read also undertake radio interviews with Anne Cross on Tribe FM Community Radio a couple of times during the breeding season.
- This season, and last, David and Sue Thorn provided monthly Radio interviews for Happy FM Victor Harbor and Alex FM Goolwa with presenter, and Hoodie volunteer, Sally Townsley.
- John Cobb provided 3 ABC radio interviews this season.
- Volunteer Karin Riederer wrote an article in the Maslin Beach Newsletter about the fledgling success and banding.
- City of Onkaparinga wrote an article in the Council's newsletter "Onkaparinga Now" about the pair and fledgling from Port Willunga Harvey and Daphne (HV and DP – naming competition 2019/20).
- Sue and Ash were interviewed for an article in The Advertiser that went online.
- BirdLife Australia staff provided an article in Port Elliot's "Beyond" resident newsletter.
- Sue and Ash Read provided nearly weekly updates to the Port Willunga Community Facebook when breeding was occurring.

- Nearly 20 Facebook posts throughout the season from Green Adelaide, and shares with councils and Hills and Fleurieu Landscape Board etc. It was exciting to see City of Victor Harbor contributing a post about training the council compliance staff, DC Yankalilla posting about Plover Appreciation Day and Alexandrina Council sharing BirdLife's Plover Appreciation Day post. City of Onkaparinga, City of Holdfast Bay and City of Charles Sturt (including through their "Pets of Charles Sturt" page) continued to post/share regularly again this season.
- Volunteer Graham Thomas distributed brochures to Southern Districts Dog Obedience Club in the Onkaparinga Beaches region again this season.
- Volunteer Kim O'Connor distributed brochures to Moana caravan park and offered a presentation which did not happen as the caravan park were too busy.
- Each year Wendy White updates the local Myponga Beach to Lands End brochure that summarises each season's breeding success, which is made available to beach-goers and through the Normanville Natural Resource Centre.



Photo: Hoodie sand sculpture made by the beach-goers at Port Willunga South who were excited the chick had fledged, New Year's Eve, Sue and Ash Read.

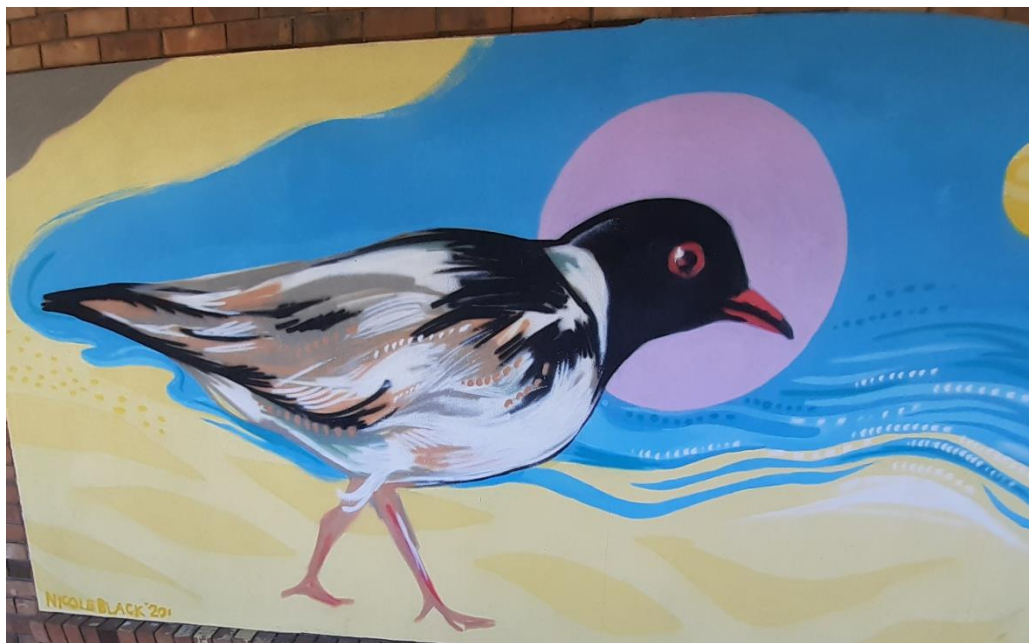


Photo: Hooded Plover mural at Normanville. Mural was designed, organised and painted by Nicole Black with help from Chelsea Nicholls and other young artists, funded through Country Arts SA & Yankalilla Council as part of the Youth scape Project, Wendy White.

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. Adelaide Metro and 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, and have kept this consistency for many years now. Well done!

Big thanks to the Volunteer Regional Coordinators: John Cobb and Ligita Bligzina (Fleurieu Adelaide Metro), Sue and Ash Read (Fleurieu North – Onkaparinga Beaches), Wendy White (Fleurieu Central – Myponga Beach to Lands End and South Coast), and David and Sue Thorn for their dedication in coordinating the Volunteers and nest site protection on Fleurieu South Coast.

Wendy White, as usual has done a tremendous job of being the Fleurieu-wide volunteer coordinator, and the staff (Matt Endacott, Caroline Taylor, Kristy Watson, Corey Jackson, Tony Flaherty and the Communications Team) from Green Adelaide continued to provide

invaluable support to volunteers and land managers. This season for the fourth year, the Green Adelaide Board (previously AMLR NRM Board) funded the Sharing our Shores with Coastal Wildlife positions held by Emma Stephens and Aleisa Lamanna at BirdLife Australia, adding a further layer of support to the program. Special thanks to the councils and rangers involved in protecting nesting sites and supporting the project and its volunteers: City of Onkaparinga, District Council of Yankalilla, DEW (Newland Head Conservation Park - National Parks and Wildlife SA), City of Victor Harbor, Alexandrina Council, City of Marion, City of Holdfast Bay, and City of Charles Sturt.

A special thanks to the Normanville Natural Resource Centre Coordinator and the South Coast Environment Centre for their amazing displays and information noticeboards, and to volunteers for assisting with awareness raising events.

A big thanks also to Zoos SA Vet Dr Jenny McLelland for attending the Seacliff entanglement, and Zoos SA Vet Pathologist Dr Anna Kokosinska for volunteering her time to undertake Hooded Plover post-mortems. A big thanks also to the members of the public for rescuing the injured Percy from Watsons Gap, Dr Anne Fowler from Adelaide Bird & Exotics Vet Centre at Richmond, and Rena Robinson and volunteers from the Goolwa Wildlife Rescue, Gayl Males (South Coast Environment Centre), Wendy White and volunteers for the fantastic care, release and monitoring, of Percy.

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