



A SUMMARY OF BREEDING SUCCESS FOR THE 2022-2023 SEASON

Monitoring Hooded Plovers on the Adelaide coast and Fleurieu Peninsula



Watsons Gap (Photo: Kerri Bartley)

Monitoring Hooded Plovers on the Adelaide coast and Fleurieu Peninsula

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A summary of the breeding success for the 2022- 2023 season.

Cover photo: Aldinga Beach (Diane Randall)

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Seacliff information pop-up (Photo: D. Furbank)

Executive Summary

The Hooded Plover monitoring, site protection and community engagement is supported through The Green Adelaide Board's Sharing our Shores with Coastal Wildlife project. It is funded primarily through the Green Adelaide Board with some funding also from the Australian Government's National Landcare Program, administered by the Hills and Fleurieu Landscape Board. It is supported by BirdLife Australia's National Beach-nesting Bird team and resources. The work is undertaken in collaboration with Adelaide metro and Fleurieu coastal councils and relies on dedicated support from trained BirdLife Australia volunteers.

During the 2022/23 season, 75 people entered data into the MyBeachBird data portal, with a record number of 5,310 data entries (compared to 78 people, 3,575 records in 2021/22 season; 64 people, 3,468 records in 2020/21 season). Volunteers and Volunteer Regional Coordinators (VRCs) contributed a very impressive 6,375 hours over the season. 60 sites were visited with 52 sites monitored frequently throughout the season. Of these 52 sites 36 breeding pairs were confirmed on the Adelaide Metro and Fleurieu coast this season, 34 of these pairs actively nesting. (31 pairs in 2021/22, 31 pairs in 2020/21, and 28 pairs in 2019/20). The remaining sites recorded no breeding activity.

This season there were 110 breeding attempts (266 eggs), with 57 chicks and 16 fledglings. This compares to 73 chicks and 19 fledglings in 2021/22. A high percentage of the nests failed at egg stage (76.58%), higher than last season (67.7% in 2021/22). This is the highest failure rate recorded since 2010. Twenty-eight (25.45%) nest failures were suspected to have been the result of fox depredation with 25 records of fox prints around the nest and 3 confirmed via remote nest camera. High tides and storm surges had a significant impact this season with 20 nest failures recorded due to tides (accounting for 18.18%). Chick survival (28.07%) was similar to the previous two seasons (26% 2021/22 and 26.9% in 2020/21), however when compared to the longer term, is lower than historical rates. Chick survival previously ranged between 30.2% and 41% between 2009/10 and 2017/18.

The Hooded Plover fledgling per pair result was 0.47, which comfortably meets the target range of 0.4-0.5 to maintain population viability over time, highlighting a successful season, even with the high level of nest failure. The success of fledglings was spread across the region with 1 at Seacliff/Brighton, 4 in the Onkaparinga council area, 6 in Yankalilla council area, 3 in Victor Harbor and 2 in the Alexandrina council area.

Of the 110 confirmed nests on the Adelaide Metro and Fleurieu Peninsula coast, 92 (83.64%) of nests had some form of management (predominantly temporary fencing and signage). Only the protected nests produced fledglings this season.

Suspected fox depredation was widespread across the region, from Adelaide metro to the South Coast. This season Green Adelaide invested in research into the effectiveness of sound deterrents on foxes preying on Hooded Plover nests and a den detecting Conservation Dog followed by den fumigation. Fox den searches were undertaken across the Adelaide metro and Fleurieu region. Storm surges and high tides also had a significant impact with 20 nests (18.18%) lost to tides.

Dog disturbance and impacts on nesting activity is still of concern. Council compliance teams have invested considerable staff resources for compliance visits to Hooded Plover sites and most councils have now incorporated a By-law requiring dogs-on-lead at Hooded Plover breeding sites (City of Onkaparinga new dog by-laws came into effect in November 2022) and Yankalilla Council's By-law review to take place in 2023. BirdLife Australia provided submissions to City of Victor Harbor and Alexandrina Council's Dog By-law reviews this season, recommending a 100-metre dog-on lead zone around Hooded Plover breeding sites, consistent with other local government areas. Compliance visits and use of council dog 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.

Individual Council and National Parks (Newland Head Conservation Park) reports are produced each year summarising breeding success, threats, and recommendations. Sharing our Shores with Coastal Wildlife staff (BirdLife Australia, supported by 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.



Hooded Plover hiding chicks at Port Stanvac (Photo: Deborah Furbank)

Introduction

Over 85% of the Australian population lives within 50 kilometres of the coast. A growing trend for a 'sea change', and with coastal tourism representing \$24.7 billion Australia wide in 2019, significant and increasing pressure is placed on shorebirds. 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 based on citizen science data collected through biennial counts and monitoring of breeding success, providing evidence for the species eligibility under threatened criteria. Under the EPBC Act, a Conservation Advice has been prepared for the Eastern Hooded Plover in 2014. This conservation advice aims to provide national direction to implement priority actions and mitigate against key threats. A review and update was undertaken in 2019 but awaits Ministerial approval.

Hooded Plovers are the most threatened of beach-nesting resident shorebirds because they are habitat specialists. They are limited to breeding and feeding exclusively on ocean beaches in South Australia, with the rare exception of some coastal saline lakes in parts of the Southeast coast, Yorke Peninsula and on the Eyre Peninsula. The Fairy Tern is a small bird, that feeds on fish and is generally restricted to shallow water coastal areas and estuaries. Fairy Terns prefer to nest close to available food resources to forage, whereas oystercatchers have a broader nesting habitat range which includes rocky outcrops, islands and more heavily vegetated dune areas. Red-capped Plovers occupy a range of habitats including samphire saltmarsh, freshwater wetlands, low energy beaches, salt fields 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 both natural and introduced predators such as ravens, gulls, magpies, foxes and cats. This is particularly true of disturbances caused by unleashed dogs and vehicles, where adults spend long periods away from the nests and chicks. 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 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 a brooding adult. 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 between BirdLife Australia and 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 were superseded by Landscape Boards. The Adelaide Metro and Fleurieu Peninsula Hooded Plover population spans across both the Green Adelaide and Hills and Fleurieu Landscape Board regions. For the second year in a row, there were 12 pairs, an increase from 10 (2020/21) on Green Adelaide's coastline, representing 33.3% of the population. The remaining 24 pairs (66.6%) occur along the Hills and Fleurieu Landscape Board's coastline. Green Adelaide continues to support the program through funding and staff across the two regions. Some resourcing through the Australian Governments National Landcare Program was also accessed via the Hills and Fleurieu Landscape Board to support the program from 2019-2023.

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 remarkable success and is an excellent case study showing that wildlife and the community can co-exist.

Aims of the Program

The main aim of the National Beach-nesting Birds (BNB) program project is to involve coastal communities and land managers in the 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.

In the Adelaide metro and 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.
- 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, community art projects, 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 Adelaide coast and Fleurieu Peninsula.
- ii. Participate in the Hooded Plover eastern mainland census (Biennial Count) every two years (e.g. November 2022, November 2024) 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.
- vi. Seek to understand impacts of climate change on population distribution and to prioritise sites for habitat protection, including protection from future coastal armoured 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.
- 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 to assist with nest protection responses. In addition, the Sharing our Shores with Coastal Wildlife project coordinators, funded by Green Adelaide and hosted by BirdLife Australia, assist in delivering key actions. The Hooded Plover Volunteer Coordinator is a paid role (funded by the Hills and Fleurieu Landscape Board and the Australian Government's National Landcare Program) to assist with delivery of key actions relating to volunteers, awareness raising and management.
- Volunteer Regional Coordinators and Volunteers undertake the important roles of monitoring breeding birds and site threats, recording data on the portal, installing fences/signs, and talking with the public, etc.

Connection to Regional and Statewide Plans

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 (SFCAP) and for relevant coastal areas of the Metropolitan Adelaide and Northern Coastal Action Plan (MANCAP). These plans contain detailed coastal maps and plant and animal lists and are currently being reviewed in 2023-24 to contain the most up to date and relevant data and

recommendations. 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 Green Adelaide and the Adelaide Hills and Fleurieu Landscape Boards, councils and DEW. In implementing the Coastal Action Plans, the Green Adelaide and Hills and Fleurieu Landscape Boards address local initiatives identified in the Coastal Action Plans to conserve Hooded Plovers, as well as providing resourcing towards BirdLife Australia coordination.

Green Adelaide is currently reviewing MANCAP priority actions and achievements with local councils and partners and Hills and Fleurieu Landscape Board will be reviewing the SFCAP later this year. This will update the extension of Hooded Plover territories and flocking sites in the metro Adelaide area.

In view of the status of this species, the Hooded Plover has been flagged as a focal species for the SFCAP and the MANCAP area.

The South Australian Recovery Plan for the Hooded Plover (Baker-Gabb and Weston 2006) 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 the Department for Environment and Water, councils, community, and the previous Natural Resources Management Board. Many of these actions and priorities, need updating due to the considerable advances in research and knowledge of South Australian Hooded Plover sites, threats, and actions since 2006.

While BirdLife Australia has developed a Conservation Action Plan (to be finalised in early 2024) and is currently acting to coordinate recovery actions, working alongside each of the Landscape Boards, across South Australia, there would be great benefit to updating the South Australian Hooded Plover recovery plan and formalising this to strengthen support and awareness of the current aims and approach.

An overview of the 2022/2023 Breeding Season

Monitoring Effort and Site Use

As part of BirdLife Australia's Beach-nesting Birds Program, monitoring of breeding Hooded Plover pairs using 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 sample of breeding pairs are monitored within each Landscape region due to logistical and resource constraints, and the smaller population sizes from which to recruit volunteers.

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 5,310 data records entered during the 2022/2023 season.

Overall, 36.86% of all data entries for the Eastern Hooded Plover, and 71.06% of all South Australian entries were from the Adelaide Metro and Fleurieu Peninsula, which is to be commended. It also highlights the value of having BirdLife Australia staff based in Adelaide working on the Sharing our Shores with Coastal Wildlife Project (funded by the Green Adelaide Board), the support from multiple VRCs and the additional support available from the Green Adelaide Coast and Seas team.

Volunteers and VRCs contributed a very impressive 6,573 hours (coordinator component approximately 1,277 hours) over the season, which includes the time spent on site monitoring the birds, installing site management, travel time, data entry time, planting spinifex at the Our Plover Coast weed control sites, and the additional coordination and actions undertaken by the VRCs.

There were 60 sites that were visited by volunteers over the breeding season, 52 of these were regularly monitored. Historically occupied sites and flocking sites were visited in addition to known breeding sites, to determine if any new breeding pairs had established this season. Of the 60 sites, 36 sites had pairs demonstrating breeding behaviour, with nests on 34 sites and two pairs on territory with scrapes. The Torrens River Mouth, Port Willunga and Tunkalilla West all had partner changes during the season. There is some uncertainty about number of pairs at Carrickalinga as all birds are unbanded. Banding at Carrickalinga is therefore a priority.

Data included in the report is from breeding pairs that have had monthly visits (as a minimum). Anything less than monthly visits means that it is not possible to confirm the number of nesting attempts 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. Access to Port Stanvac was possible this season, enabling for DEW and BirdLife staff and volunteers to monitor the breeding pair. This access was restricted previously during the decommissioning phase, although there is evidence of people and their dogs accessing the site as the southern boundary fence is being regularly vandalised.

Tables 1-3 and 5 provide an overview of breeding sites monitored and figures 1 and 2 for maps showing breeding site locations. A breakdown of the number of data portal entries for each site, and threat assessments at each site can be found in Table 1.



Off-leash dog in prohibited area, Port Stanvac (remote sensor camera)



Trespassing walkers with off-leash dog, Port Stanvac (remote sensor camera)

Figure 1. Hooded Plover breeding sites within Green Adelaide (Henley Beach to Sellicks Beach) for the 2022/2023 season.

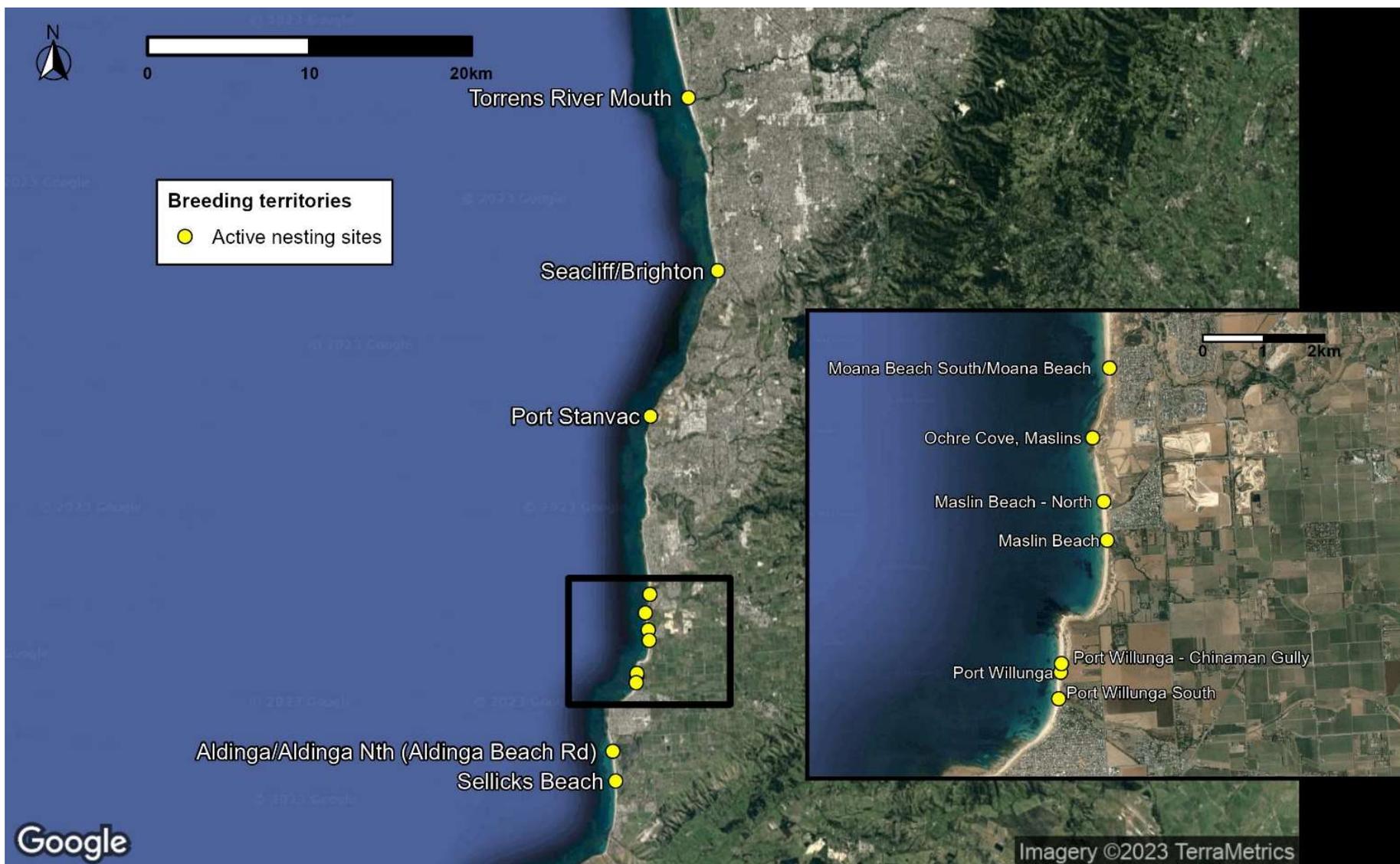


Figure 2. Hooded Plover breeding sites within the Hills and Fleurieu Landscape Board region (Myponga Beach to Goolwa) 2022/2023 season

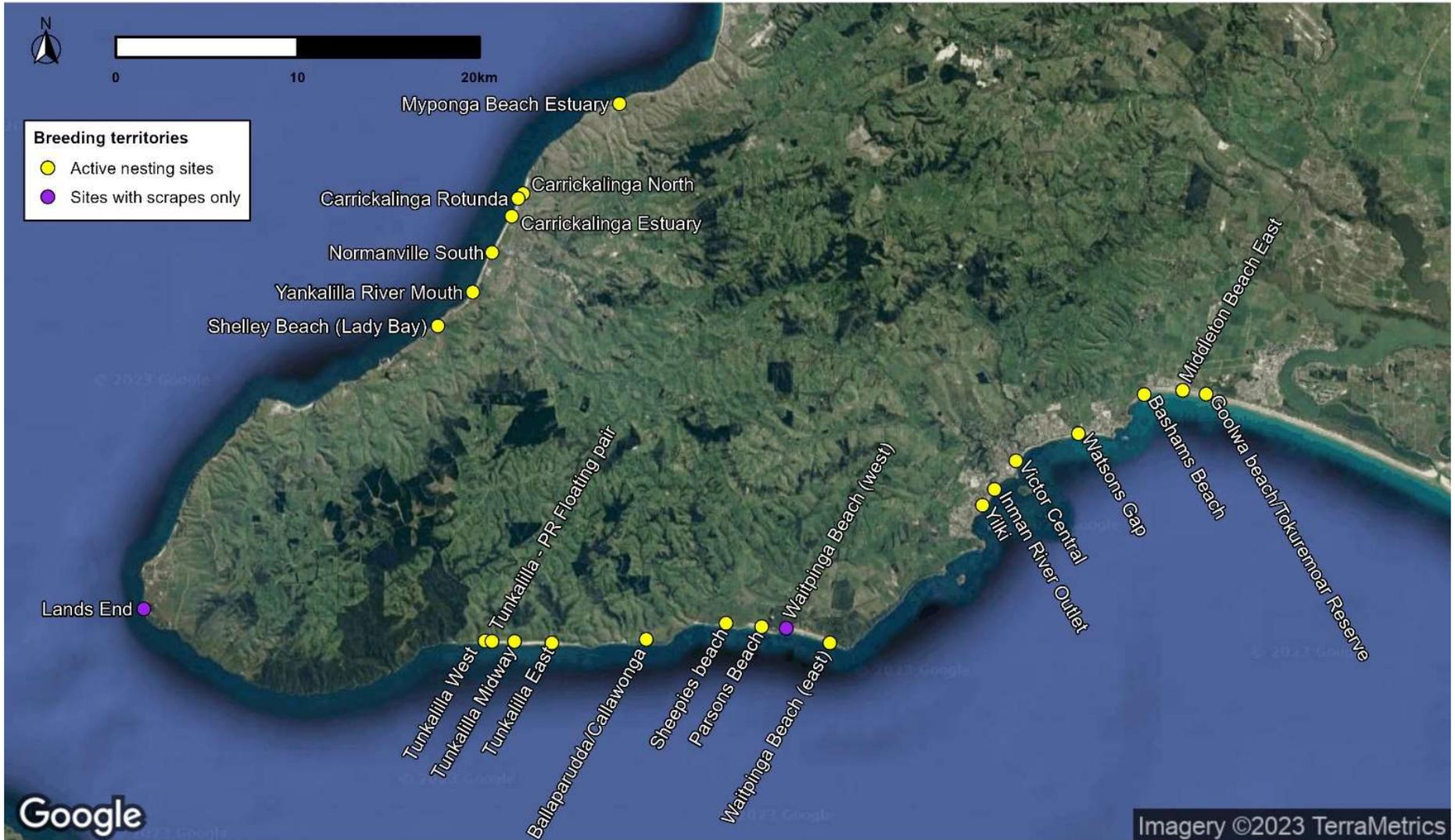


Table 1. Number of portal entries and threat assessments on the Fleurieu Peninsula during the 2022/23 breeding season. Portal entries are the number of entries entered via the online data portal. Full threat assessments include both the observed number of threats plus print assessments. There are some 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
West Beach Boat Ramp*	1	1	0	0.00%
Semaphore Park (Mirani Ct - Recreation Pde)	10	6	6	60.00%
Semaphore Sth (Recreation Pde - Bower Rd)	10	6	5	50.00%
West Lakes Beach (Estcourt Rd - Mirani Ct)	33	7	4	12.12%
Tennyson Dunes (Estcourt Rd Fort St)	27	7	5	18.52%
Henley Beach*	2	0	0	0.00%
Torrens River Mouth (TRM) (formerly West Beach)	325	146	111	34.15%
Seacliff	359	169	66	18.38%
Marino Rocks	32	4	0	0.00%
Hallett Cove	20	17	17	85.00%
Port Stanvac	29	29	23	79.31%
Southport*	2	1	1	50.00%
Moana Beach	71	63	56	78.87%
Moana Beach South	92	85	78	86.96%
Ochre Cove, Maslins	249	173	110	44.18%
Maslin Beach - North	134	90	26	19.40%
Maslin Beach	267	230	101	37.83%
Port Willunga	239	186	174	72.80%
Port Willunga - Chinaman Gully	251	187	172	68.53%
Port Willunga South	279	211	191	68.46%
Snapper Point	88	8	8	9.09%
Aldinga	138	112	87	63.04%
Aldinga Nth (Aldinga Beach Rd)	124	100	49	39.52%
Aldinga South	31	22	21	67.74%
Silver Sands	22	14	14	63.64%
Sellicks Beach	66	47	32	48.48%
Myponga Beach East	16	8	8	50.00%
Myponga Beach Estuary	37	25	20	54.05%
Carrickalinga North	92	45	37	40.22%

Site/Territory	Portal entries	Number Threat assessments	Full threat assessments	% Full threat assessments completed
Carrickalinga Rotunda	84	36	7	8.33%
Carrickalinga South	26	5	2	7.69%
Carrickalinga Estuary	98	36	11	11.22%
Normanville North*	7	2	0	0.00%
Normanville South	142	86	5	3.52%
Yankalilla river mouth	30	27	25	83.33%
Shelley Beach (lady bay)	61	50	45	73.77%
Lands End	11	9	8	72.72
Tunkalilla West	18	18	18	100.00%
Tunkalilla Midway	19	19	19	100.00%
Tunkalilla East	19	19	19	100.00%
Tunkalilla 1st alcove far east*	3	1	1	33.33%
Tunkalilla Tunk Head alcove*	2	0	0	0.00%
Ballaparudda/Callawonga	8/7	8/7	8/7	100.00%
Coolawang*	4	3	3	75.00%
Sheepies beach	27	26	26	96.30%
Parsons Beach	40	39	39	97.50%
Waitpinga Beach (west)	28	28	28	100.00%
Waitpinga Estuary	28	28	27	96.43%
Waitpinga Beach (east)	30	30	29	96.67%
Yilki	256	253	222	86.72%
Inman River Outlet	158	156	142	89.87%
Victor Central	307	275	239	77.85%
Hindmarsh River Mouth	52	26	26	50.00%
Olivers Reef*	6	6	6	100.00%
Watsons Gap	156	151	150	96.15%
Bashams Beach	132	129	129	97.73%
Middleton Beach West	28	27	27	96.43%
Middleton Beach East	160	158	155	96.87%
Goolwa beach (Tokuremoar Reserve)	38	37	34	89.47%
Total	5,031	3,694	2,879	58.60%

Breeding Success Results

In the 2022/23 breeding season there were 110 nesting attempts by 34 breeding pairs on the Adelaide Metro coast and Fleurieu Peninsula. This is the highest number of nests and greatest number of eggs recorded since monitoring began in 2008/09 (see Table 2). This is partly due to the five extra breeding pairs in the region in this season, but also reflective of the high rate of nest losses this season, and the multiple re-attempts by pairs.

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.

Season	# pairs (# sites monitored)	# nests	# nests hatch	# nests fail egg stage	#eggs	# chicks obsv. (% of eggs)	# fledglings (% of chicks)	Fledglings/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
2021/22	31 (48)	93	30 (32.3%)	63	229	73 (31.9%)	19 (26.0%)	0.61
2022/23	36 (52)	110	26 (23.6%)	85	266	52 (19.5%)	16 (30.8%)	0.47

There were 16 fledglings in the 2022/2023 breeding season, down from 19 in the previous season. The approximate benchmark for fledgling production to maintain population viability over time is set as 0.40 – 0.50 fledglings per pair per season, and this season meets this target (0.47). 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. The fledgling success was spread across the region this season, with 1 fledgling from Seacliff/ Brighton, 4 in the Onkaparinga region and the remaining 11 spread around the south coast. Figures 3 and 4 provide a geographic overview of locations where chicks hatched, figures 5 and 6 are of those sites that fledged chicks. Table 3 provides a summary of nesting attempts for each pair monitored and Table 5 expands this into more detail about each individual nesting attempt.

The earliest recorded nest was on the 3rd August at Victor Central, closely followed by one at Middleton Beach East on the 9th August and the Torrens River Mouth on the 14th August. Ochre Cove (which is usually the first) had its earliest nest on the 19th of August and had 8 nest attempts in total, which

was the record for this season. The earliest nest at Victor Central failed (suspected cat). The Middleton East nest successfully hatched on the 13th of September, providing the first chicks of the season, but both chicks disappeared around the one week mark.

The first successful fledglings came from the second nest attempt at Victor Central (2 fledglings) and the first nest at Watsons Gap (1 fledgling) on 5th November. A total of 11 pairs started nesting in August this season, compared with 12 in the 2021/22 season, and 6 in 2020/21 season.

This season finished slightly later than last season with 5 new nests producing 10 chicks during February, the final chick disappearing on day 34 at Aldinga, on 11th March. The last chick to fledge was at Tunkalilla West on the 3rd March. 8 chicks fledged in February (50%) which was the highest number of fledglings for any month, 3 chicks fledged in November (18.75%), 2 chicks in December (12.50%), 1 chick in January (6.25%) and 2 chicks in March (12.50%).

In 2021/22, there were 5 nests and 14 chicks during January with the final nest with 2 chicks hatching on the 2nd February at Aldinga and the last chick fledging on 2nd of February at Yilki. In 2020/21 the last fledgling was on 11th April at Tunkalilla West.

Six pairs (16.67%) had only one nesting attempt for the entire season; 8 pairs (22.22%) had 2 nesting attempts; 4 pairs (11.11%) had 3 nesting attempts; 9 pairs (25%) had 4 nesting attempts; 4 pairs (11.11%) had 5 nesting attempts; 2 pairs (5.56%) had 6 nesting attempts, 1 pair (2.78%) had 8 nesting attempts and 2 pairs had a scrape only (5.56%).

Once again there was 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. Last season the unbanded pair had three attempts, however this season only one attempt was made.

In the 2022/23 season, there were several territory changes, and territories that were not used, even though they historically were used for breeding. One new territory was established this season at Maslins Beach North, JR (White). A scrape was recorded at Lands End (last breeding attempt recorded was in the 2015/16 season). Sand has naturally re-established at this site and if the sand remains, this could be a potential breeding site next season. There was one nesting attempt at Parsons Beach after no attempt at this site in 2020/21 and a scrape only in the 2021/22 season. There has been no nesting at both Hallett Cove or Oliver's Reef since the 2019/20 season.

Through the flagging program, we were able to confirm changes in territories of individual birds and pairs, the movement of juveniles and the identity of breeding pairs (see flagging section below for details).

Figure 3. Sites within Green Adelaide where chicks hatched during the 2022/2023 season.

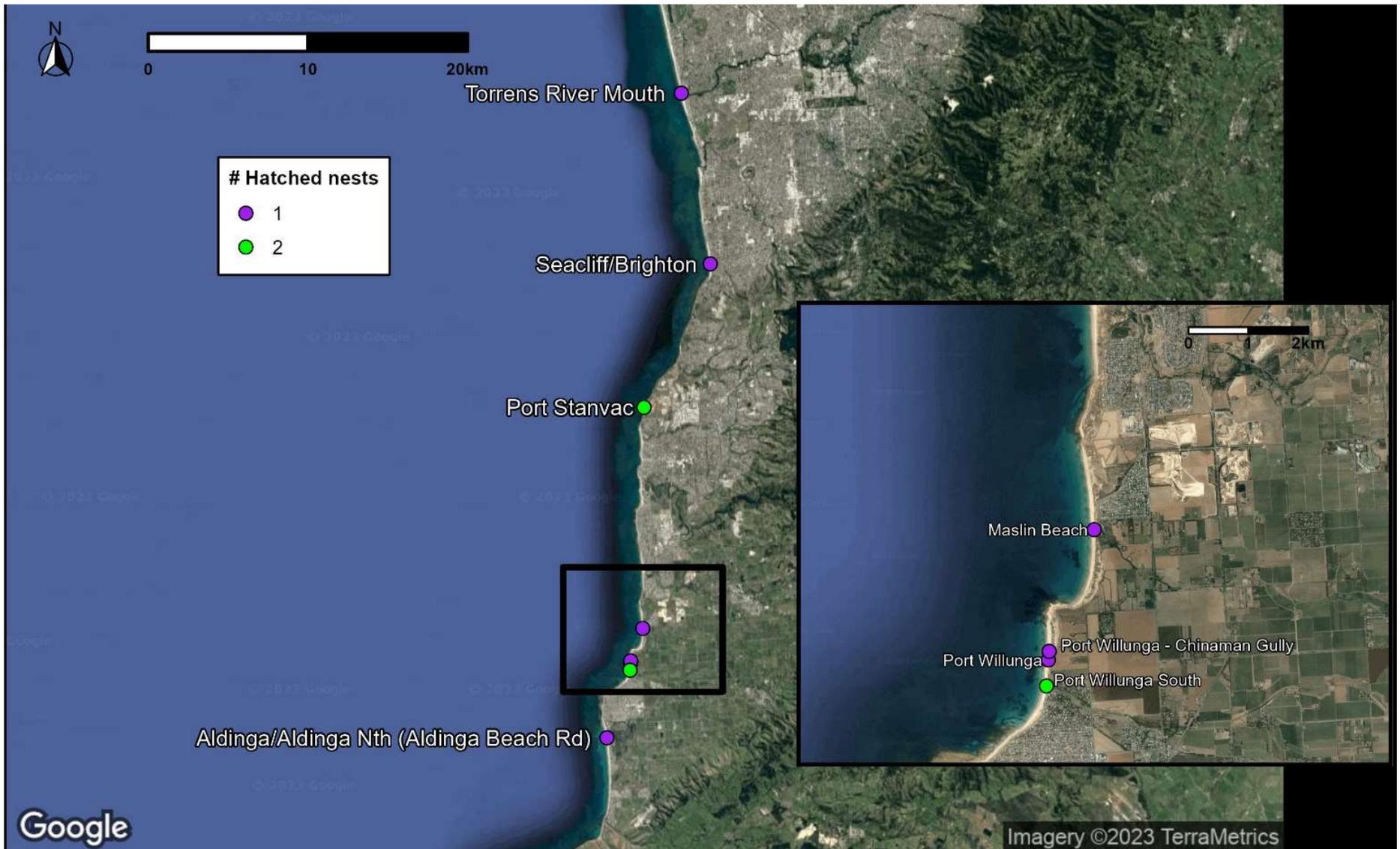


Figure 4. Sites within the Hills and Fleurieu Landscape Region where chicks hatched during the 2022/2023 season.

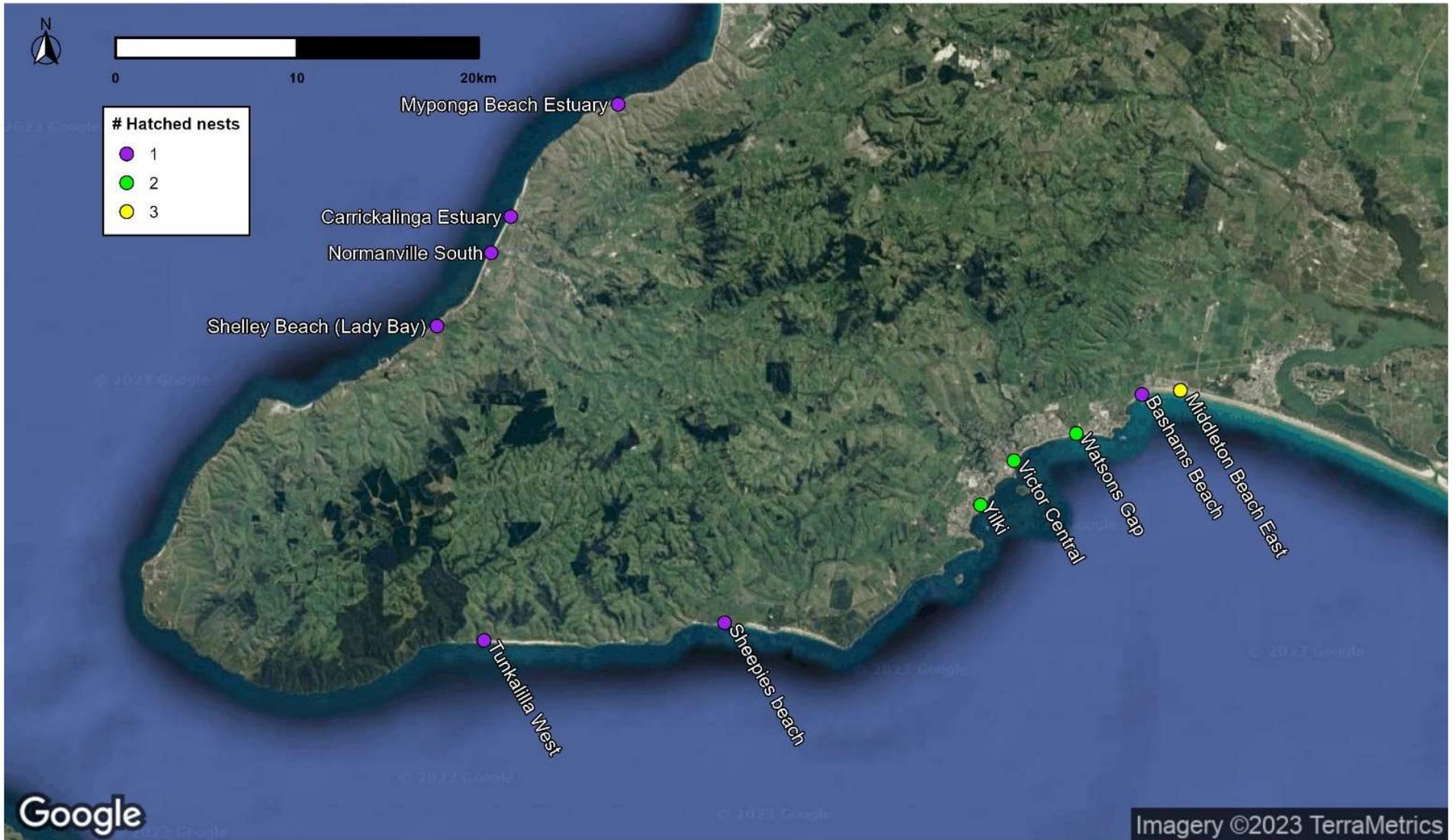


Table 3. Summary of nests, number of nests that failed, hatched and fledged, and total number of eggs confirmed, chicks observed and chicks that fledged from each site monitored in the 2022/23 breeding season.

Site	Pair ID	# Nests	# Nests failed	# Nests hatch	# nests fledge	# Eggs obs	# chicks obs	# fledglings
Torrens River Mouth	MR Right (White) & unb	1	1	0	0	3	0	0
Torrens River Mouth	RT Right (White) & unb	3	2	1	0	6	2	0
Seacliff/Brighton	unbanded x 2	5	4	1	1	15	3	1
Port Stanvac	AR Left (Orange) & ES Right (White)	3	1	2	0	7	5	0
Moana Beach South/Moana Beach	unbanded x 2	4	4	0	0	7	0	0
Ochre Cove, Maslins	NA Right (Orange) & unb	8	8	0	0	16	0	0
Maslin Beach - North	JR Left (White) & unb	1	1	0	0	2	0	0
Maslin Beach	RV Right (Orange) & unb	5	4	1	0	12	3	0
Port Willunga - Chinaman Gully	YL Right (White) & unb	5	4	1	1	10	3	2
Port Willunga	DP Left (Orange) & HV right (Orange)	2	2	0	0	3	0	0
Port Willunga	HV Right (Orange) and unb	2	1	1	1	5	1	1
Port Willunga South	JT Right (White) & unb	4	2	2	1	11	4	1
Aldinga/Aldinga Nth (Aldinga Beach Rd)	unbanded x 2	5	4	1	0	14	1	0
Sellicks Beach	SR Right (Orange) & unb	5	4	0	0	11	0	0
Myponga Beach Estuary	MN Right (White) & unb	2	1	1	1	6	2	1
Carrickalinga North	unbanded x2	1	1	0	0	3	0	0
Carrickalinga Rotunda	unbanded x 2	2	2	0	0	4	0	0
Carrickalinga Estuary	unbanded x 2	1	0	1	0	2	2	0
Normanville South	NC Right (White) & unb	2	1	1	1	4	2	2
Yankalilla river mouth	unknown x 2	2	2	0	0	2	0	0
Shelley Beach (lady bay)	DT Right (White) & unb	1	0	1	1	2	2	1
Lands End	unbanded x2	0	0	0	0	0	0	0
Tunkalilla West	PT Left (White) & unb	2	2	0	0	5	0	0
Tunkalilla West	unbanded x 2	4	3	1	1	8	2	2

Site	Pair ID	# Nests	# Nests failed	# Nests hatch	# nests fledge	# Eggs obs	# chicks obs	# fledglings
Tunkalilla - PR Floating pair	PR Right (White) & unb	4	4	0	0	10	0	0
Tunkalilla Midway	ME Right (Orange) & unb	3	3	0	0	7	0	0
Tunkalilla East	unbanded x 2	4	4	0	0	12	0	0
Ballaparudda/Callawonga	unbanded x 2	2	2	0	0	5	0	0
Sheepies beach	KD Right (White) & NZ Right (Orange)	1	0	1	0	2	1	0
Parsons Beach	unbanded x2	1	1	0	0	3	0	0
Waitpinga Beach (west)	unbanded x 2	0	0	0	0	0	0	0
Waitpinga Beach (east)	UA Right (White) & unb	2	2	0	0	2	0	0
Yilki	KV Right (Orange) & RR Right (Orange)	6	4	2	0	17	5	0
Inman River Outlet	unbanded x 2	3	3	0	0	9	0	0
Victor Central	PX Right (White) & unb	4	2	2	0	13	6	2
Watsons Gap	unbanded x 2	2	0	2	1	4	4	1
Bashams Beach	MS Left (White) & unb	3	2	1	0	8	2	0
Middleton Beach East	YV Right (White) & unb	4	1	3	1	11	7	2
Goolwa Beach/ Tokuremoar Reserve	TT Right (Orange) & HJ Right (White)	2	2	0	0	5	0	0
Number Pairs:	36	110	84	26	10	266	57	16

Figure 5: Sites within Green Adelaide where chicks fledged during the 2022/2023 season.

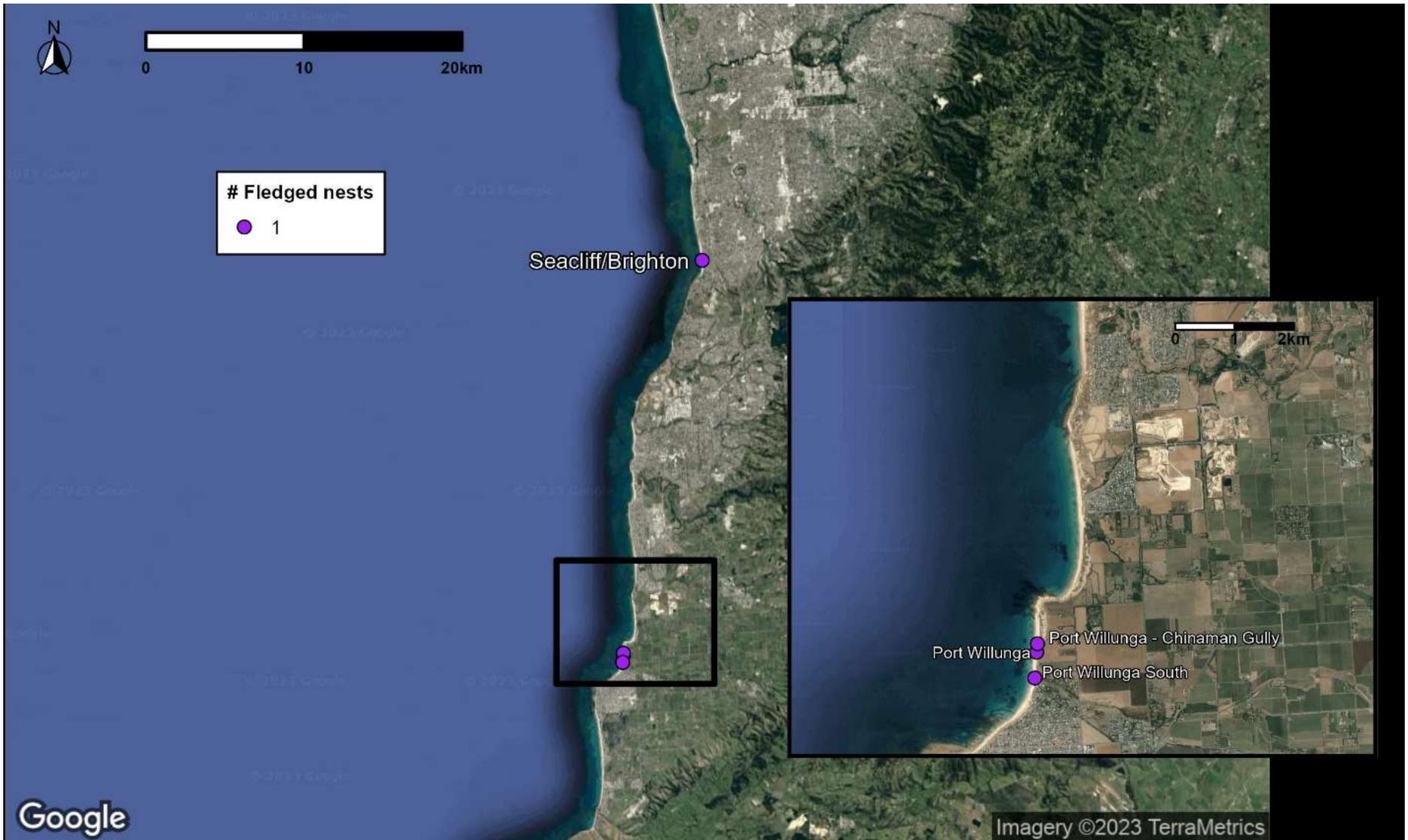


Figure 6: Sites within the Hills and Fleurieu Landscape Region where chicks fledged during the 2022/2023 season.



Of the 110 confirmed nests that were monitored, 76.36% (84 nests) failed and 23.64% (26 nests) hatched. 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 2022/23, of the nests that failed, 64.29% (54 nests) failed to unknown causes. However, for 34 (62.96%) of these nests that had unknown cause for failure, there were prints and evidence around the nest suggesting the following potential causes of failure: the highest being suspected fox depredation for 25 of the 34 nests (73.53%) (see further detail below); with another 2 nests (5.88%) suspected either fox or dog (Torrens River Mouth and Moana Beach); 3 nests (8.82%) were suspected to have been predated by ravens (2 at Sellicks and 1 at Yankalilla River); an additional nest (2.94%) was suspected to have been predated by either fox or raven; 2 nests (5.88%) were suspected to have been predated by lizards, Aldinga and Port Willunga; and 1 nest (2.94%) (Victor Central) was suspected to be predated by a cat. In the future, if cats are detected near breeding sites, implement targeted control and education of nearby residents around responsible cat ownership.

Table 4. 2022/23 season showing the sites, number of nests suspected depredated by foxes, and as a percentage of failed nests at that site shown in brackets.

Site	# and % of nests failed suspect fox
Torrens River Mouth	2 (50%)
Seacliff/Brighton	2 (40%)
Moana Beach South	1 (25%)
Ochre Cove	7 (87.5%)
Maslin Beach	2 (40%)
Maslin Beach North	1 (100%)
Port Willunga South	1 (33.3%)
Carrickalinga North	1 (100%)
Tunkalilla West – floating pair (PR)	1 (25%)
Tunkalilla West - unbanded	2 (50%)
Tunkalilla Midway	2 (66.6%)
Ballaparudda	2 (100%)
Inman River Outlet	1 (33.3%)
Bashams Beach	1 (33.3%)

Of the nest failures where the cause could be confirmed (24.55%, 27 nests), the majority (74.1%, 20 nests) failed due to tidal inundation and storms. Unlike last year where the failures due to tide, all occurred early in the season, tidal inundation occurred between September and February in the 2022/23 season. Port Willunga – Chinaman Gully lost four of five nests to tidal inundation. Remote sensor cameras confirmed fox predation as the cause of failure at 3 nests (11.11% of known nest failure causes).

Two nests were abandoned, and one nest was deemed unviable after well exceeding incubation duration. It is suspected that the first egg of this nest was taken by a magpie and the second egg rolled out of the nest. The adult sat on the remaining egg for three weeks past the due date, at which point it was considered no longer viable. When the eggs are deemed unviable in this case, BirdLife Australia has a permit to remove the eggs for the welfare of the birds. 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.



High tides at Bashams Beach (Photo: Sue and David Thorn)

Out of the total number of nests (110), 26 were confirmed as hatched (23.64%). Eleven of these hatched nests successfully fledged 16 chicks (i.e., 42.3% of hatched nests fledged). Of the 57 chicks observed, 16 (28%) fledged. The 16 fledglings produced this season were from 11 pairs of Hooded Plovers. Pairs which successfully fledged two chicks were from: Middleton Beach East, Victor Central, Tunkalilla West, Normanville South and Port Willunga–Chinaman Gully. The pairs that successfully fledged one chick were from: Watsons Gap, Shelley Beach (Lady Bay), Myponga Beach estuary, Port Willunga South, Port Willunga, and Seacliff/ Brighton.

The Seacliff/ Brighton fledgling was the only Adelaide metro fledgling this season. After 4 unsuccessful nesting attempts (the first two nests failed due to suspected fox depredation, the 3rd from tidal inundation and the 4th disappeared on day 28). After the 4th attempt, the pair disappeared from the Young Street drain area. However, a member of the public reported a new nest on the 2nd of January in front of the Brighton Caravan Park.

On Saturday the 7th of January, four days later, the nest hatched three chicks on one of the hottest and busiest day of the year. The chicks were seen utilising the shade of the fencing stake to avoid the heat. On the 8th of January the he family of five made the 1km journey through the crowds of people and vehicles back to the Young Street drain. For the next five weeks, the family moved between the Young Street and Edward Street drain daily. There were several reports from the public of an injured bird, this was broken wing distraction displays by the parents.

Chick shelters were provided for the birds and the City of Holdfast Bay staff moved the fencing to the new area. Unfortunately, the first chick disappeared three days later; the second chick disappeared at three weeks of age. The final chick managed to make it through to fledging on Seacliff/ Brighton beach during the busy summer holidays. An incredible result considering the number of threats and peak summer season the fledgling had to endure.



Hooded Plover family at Young Street Seacliff (Photo: Brian Wilson)

The successful pairs were spread throughout the region this season unlike last season. There was repeated success for some territories across the last two seasons including: Port Willunga South, Tunkalilla West, Victor Central, Watsons Gap, and Middleton East.

A highlight toward the end of this season was successful nests at all three sites along Port Willunga Beach, producing four fledglings in total. The volunteers at Port Willunga coordinated increased nest and chick wardening during this time, which is likely to have contributed to this success. One of the chicks had a very close call after being picked up by a member of the public. After being reunited with its family, it went on to fledge.

On 22nd of January 2023, BirdLife Australia was contacted by a local wildlife carer, informing staff of a chick had been handed in to Aldinga Veterinary clinic. After investigation, this was confirmed as the recently missing 28-day old chick from the Chinaman Gully site. After further health checks and several nights with a wildlife carer, BirdLife Australia coordinated a release back to its family at Port Willunga. With the help of local volunteers, this was successful, and the chick quickly returned to its parents and sibling. Whilst looking a little smaller than its sibling, this chick went on to fledge along with its sibling on the 4th of February.



Released Hooded Plover Chick – Port Willunga (Photo: Kerri Bartley)

This season was the second season YL (White) nested at Port Willunga - Chinamans Gully and the first breeding success for this adult. YL (White) was banded at Seacliff in 2019 and had unsuccessful nesting attempts at Henley Beach in 2020/21 and at Chinamans Gully in 2021/22.

There were eight nest attempts at Ochre Cove this season, with all eight failing. The suspected cause for seven of the failures was fox depredation. One failure was attributed to the tide.

Table 5. Detailed summary of nest progress for each site according to data entered in the MyBeachBird data portal for the 2022/23 breeding season.

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Torrens River Mouth	MR Right (White) & unb	1	14/08/22	3	3/09/22	Unknown (suspect dog or fox)						
Torrens River Mouth	unbanded (likely RT) & unb	2	2/11/22	2	9/11/22	Unknown (suspect fox)						
Torrens River Mouth	RT Right (White) & unb	3	23/11/22	2	10/12/22	Fox						
Torrens River Mouth	RT Right (White) & unb	4	9/01/23	2			3/02/23	2	6/02/23	Unknown (1 suspect fox)		
Seacliff/ Brighton	unb & unb	1	22/08/22	3	7/09/22							
Seacliff/ Brighton	unb & unb	2	22/09/22	3	24/09/22	Unknown (suspect fox)						
Seacliff/ Brighton	unb & unb	3	6/10/22	3	14/10/22	Tide						
Seacliff/ Brighton	unb & unb	4	27/10/22	3	24/11/22	Unknown (suspect fox)						
Seacliff/ Brighton	unb & unb	5	3/01/23	3			7/01/23	3	10/01/23, 28/01/23	Unknown	1	10/02/23
Port Stanvac	AR Left (Orange) & ES Right (White)	1	29/09/22	1	11/10/22							
Port Stanvac	AR Left (Orange) & ES Right (White)	2	26/10/22	3			23/11/22	3	13/12/22, 16/12/22, 16/12/22	Unknown		
Port Stanvac	AR Left (Orange) & ES Right (White)	3	4/01/23	3			7/02/23	2	15/02/23	Unknown (suspect magpie)		
Moana Beach South/ Moana Beach	unb & unb	1	12/09/22	3	17/09/22	Tide						
Moana Beach South/ Moana Beach	unb & unb	2	11/10/22	1	14/10/22							
Moana Beach South/ Moana Beach	unb & unb	3	18/10/22	1	2/11/22	Unknown (suspect fox)						
Moana Beach South/ Moana Beach	unb & unb	4	14/11/22	2	25/11/22	Unknown (suspect fox or dog)						

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Ochre Cove, Maslins	NA Right (Orange) & unb	1	19/08/22	3	26/08/22	Unknown (suspect fox)						
Ochre Cove, Maslins	NA Right (Orange) & unb	2	4/09/22	2	9/09/22	Unknown (suspect fox)						
Ochre Cove, Maslins	NA Right (Orange) & unb	3	28/09/22	1	29/09/22	Unknown (suspect fox)						
Ochre Cove, Maslins	NA Right (Orange) & unb	4	4/10/22	2	7/10/22	Unknown (suspect fox)						
Ochre Cove, Maslins	NA Right (Orange) & unb	5	19/10/22	2	21/10/22	Unknown (suspect fox)						
Ochre Cove, Maslins	NA Right (Orange) & unb	6	2/11/22	3	14/11/22	Tide						
Ochre Cove, Maslins	NA Right (Orange) & unb	7	28/11/22	2	5/12/22	Fox						
Ochre Cove, Maslins	NA Right (Orange) & unb	8	22/12/22	1	8/01/23	Unknown (suspect fox)						
Maslin Beach - North	JR Left (White) & unb	1	27/11/22	2	1/12/22	Unknown (suspect fox)						
Maslin Beach	RV Right (Orange) & unb	1	16/09/22	3	24/09/22	Tide (1st egg), suspect fox or raven for remaining						
Maslin Beach	RV Right (Orange) & unb	2	5/10/22	2	7/10/22	Unknown (suspect fox)						
Maslin Beach	RV Right (Orange) & unb	3	15/10/22	3	24/10/22	Unknown (suspect fox)						
Maslin Beach	RV Right (Orange) & unb	4	3/11/22	1	16/11/22	Tide						
Maslin Beach	RV Right (Orange) & unb	5	23/11/22	3			24/12/22	3	26/12/22, 26/12/22, 23/01/23	Unknown		
Port Willunga - Chinaman Gully	YL Right (White) & unb	1	13/09/22	1	17/09/22	Tide						
Port Willunga - Chinaman Gully	YL Right (White) & unb	2	7/10/22	2	14/10/22	Tide						

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Port Willunga - Chinaman Gully	YL Right (White) & unb	3	25/10/22	2	27/10/22	Tide						
Port Willunga - Chinaman Gully	YL Right (White) & unb	4	6/11/22	2	14/11/22	Tide						
Port Willunga - Chinaman Gully	YL Right (White) & unb	5	26/11/22	3			25/12/22	3	6/01/23	Unknown	2	4/02/23
Port Willunga	DP Left (Orange) & HV Right (Orange)	1	13/09/22	1	17/09/22	Tide						
Port Willunga	DP Left (Orange) & HV Right (Orange)	2	8/10/22	2	14/10/22	Tide						
Port Willunga	HV Right (Orange) & unb	3	26/11/22	3	3/12/22	Unknown (suspect blue-tongue lizard)						
Port Willunga	HV Right (Orange) & unb	4	14/12/22	2			16/01/23	1			1	20/02/23
Port Willunga South	JT Right (White) & unb	1	24/08/22	2	17/09/22	Tide						
Port Willunga South	JT Right (White) & unb	2	6/10/22	3	22/10/22	Unknown (suspect fox)						
Port Willunga South	JT Right (White) & unb	3	6/11/22	3			2/12/22	1	7/12/22	Unknown		
Port Willunga South	JT Right (White) & unb	4	22/12/22	3			20/01/23	3	4/02/23	Unknown (suspect Kestrel)	1	26/02/23
Aldinga/ Aldinga Nth (Aldinga Beach Rd)	unb & unb	1	26/08/22	3	17/09/22	Tide						
Aldinga/ Aldinga Nth (Aldinga Beach Rd)	unb & unb	2	6/10/22	3	6/10/22	Unknown (suspect lizard)						
Aldinga/ Aldinga Nth (Aldinga Beach Rd)	unb & unb	3	20/10/22	3	30/10/22							
Aldinga/ Aldinga Nth (Aldinga Beach Rd)	unb & unb	4	27/11/22	3	19/12/22							

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Aldinga/ Aldinga Nth (Aldinga Beach Rd)	unb & unb	5	5/01/23	2			5/02/23	1	12/03/23	Unknown		
Sellicks Beach	SR Right (Orange) & unb	1	11/09/22	3	14/09/22	Unknown (suspect raven)						
Sellicks Beach	SR Right (Orange) & unb	2	6/10/22	3	28/10/22	Unknown (suspect raven)						
Sellicks Beach	SR Right (Orange) & unb	3	29/11/22	3	30/12/22	Over incubated						
Sellicks Beach	SR Right (Orange) & unb	4	17/01/23	2	20/01/23							
Myponga Beach Estuary	MN Right (White) & unb	1	5/11/22	3	7/11/22							
Myponga Beach Estuary	MN Right (White) & unb	2	5/12/22	3			31/12/22	2	8/01/23	Unknown	1	24/01/23
Carrickalinga North	unb & unb	1	4/09/22	3	15/09/22	Unknown (suspect fox)						
Carrickalinga Rotunda	unb & unb	1	24/10/22	2	31/10/22	Tide						
Carrickalinga Rotunda	unb & unb	2	27/11/22	2	2/12/22							
Carrickalinga Estuary	unb & unb	1	12/12/22	2			6/01/23	2	17/01/23, 18/01/23	Unknown		
Normanville South	NC Right (White) & unb	1	21/10/22	2	2/11/22							
Normanville South	NC Right (White) & unb	2	6/12/22	2			1/01/23	2			2	5/02/23
Yankalilla river mouth	unknown & unknown	1	1/09/22	1	2/09/22	Abandoned						
Yankalilla river mouth	unknown & unknown	2	30/09/22	1	30/09/22	Unknown (suspect raven)						
Shelley Beach (lady bay)	DT Right (White) & unb	1	13/12/22	2			1/01/23	2	6/01/23	Unknown (suspect Silver Gull)	1	4/02/23
Tunkalilla West (PT)	PT Left (White) & unb	1	12/09/22	2	1/10/22							

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Tunkalilla West (PT)	PT Left (White) & unb	2	17/10/22	3	7/11/22							
Tunkalilla West (unb)	unb & unb	3	17/11/22	1	30/11/22	Unknown (suspect fox)						
Tunkalilla West (unb)	unb & unb	4	21/12/22	3	30/12/22							
Tunkalilla West (unb)	unb & unb	5	30/12/22	2	9/01/23	Unknown (suspect fox)						
Tunkalilla West (unb)	unb & unb	6	9/01/23	2			29/01/23	2			2	3/03/23
Tunkalilla - PR Floating pair (Midway)	PR Right (White) & unb	1	1/10/22	3	9/10/22							
Tunkalilla - PR Floating pair (Tunk west)	PR Right (White) & unb	2	17/10/22	2	7/11/22							
Tunkalilla - PR Floating pair (Tunk west)	PR Right (White) & unb	3	9/01/23	3	29/01/23	Unknown (suspect fox)						
Tunkalilla - PR Floating pair (Tunk west)	PR Right (White) & unb	4	29/01/23	2	7/02/23	Tide						
Tunkalilla Midway	ME Right (Orange) & unb	1	17/11/22	3	30/11/22	Unknown (suspect fox)						
Tunkalilla Midway	ME Right (Orange) & unb	2	21/12/22	1	30/12/22							
Tunkalilla Midway	ME Right (Orange) & unb	3	9/01/23	3	29/01/23	Unknown (suspect fox)						
Tunkalilla East	unb & unb	1	1/10/22	3	7/11/22							
Tunkalilla East	unb & unb	2	7/11/22	3	30/11/22							
Tunkalilla East	unb & unb	3	30/12/22	3	29/01/23							
Tunkalilla East	unb & unb	4	29/01/23	3	7/02/23	Tide						
Ballaparudda/Callaw onga	unb & unb	1	24/11/22	2	5/12/22	Unknown (suspect fox)						
Ballaparudda/Callaw onga	unb & unb	2	6/01/23	3	24/01/23	Unknown (suspect fox)						

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Sheepies beach	KD Right (White) & NZ right (Orange)	1	4/01/23	2			30/01/13	1	5/02/23	Tide		
Parsons Beach	unb & unb	1	9/12/22	3	11/12/22	Unknown (suspect fox)						
Waitpinga Beach (east)	UA Right (White) & unb	1	26/10/22	1	5/11/22							
Waitpinga Beach (east)	UA Right (White) & unb	2	5/11/22	1	22/11/22							
Yilki	KV Right (Orange) & RR Right Orange	1	24/08/22	3	31/08/22							
Yilki	KV Right (Orange) & RR Right Orange	2	9/09/22	3	21/09/22							
Yilki	KV Right (Orange) & RR Right Orange	3	29/09/22	3	9/10/22							
Yilki	KV Right (Orange) & RR Right Orange	4	18/10/22	3			21/11/22	3	7/12/22, 8/12/22, 13/12/22	Unknown		
Yilki	KV Right (Orange) & RR Right Orange	5	23/12/22	3			27/01/23	2	29/01/23	Unknown		
Yilki	KV Right (Orange) & RR Right Orange	6	11/02/23	2	21/02/23	Abandoned						
Inman River Outlet	unb & unb	1	7/11/22	3	13/11/22	Tide						
Inman River Outlet	unb & unb	2	27/11/22	3	27/12/22	Fox						
Inman River Outlet	unb & unb	3	7/01/23	3	4/02/23	Tide						
Victor Central	PX Right (White) & unb	1	3/08/22	3	18/08/22	Unknown (suspect cat)						
Victor Central	PX Right (White) & unb	2	27/08/22	4			2/10/22	3	3/10/22	Unknown	2	5/11/22

Site	Pair ID	Nesting attempt #	Date nest found	# Eggs obsv.	Nest fail date	Nest fail cause	Chicks first obsv.	# Chicks obsv.	Chick fail date(s)	Chick failure causes	# fledged	Date fledged
Victor Central	PX Right (White) & unb	3	18/11/22	3	19/12/22	Unknown (suspect fox)						
Victor Central	PX Right (White) & unb	4	6/01/23	3			30/01/23	3	13/02/23, 14/02/23, 18/02/23	Unknown (1 suspect fox)		
Watsons Gap	unb & unb	1	27/08/22	2			1/10/22	2	4/11/22, 14/11/22, 18/02/22		1	5/11/22
Watsons Gap	unb & unb	2	6/12/22	2			8/01/23	2	15/01/23, 4/02/23	Unknown		
Bashams Beach	MS Left (White) & unb	1	23/08/22	3	26/09/22	Abandoned						
Bashams Beach	MS Left (White) & unb	2	26/09/22	3	27/10/22	Unknown (suspect fox)						
Bashams Beach	MS Left (White) & unb	3	7/11/22	2			8/12/22	2	20/12/22, 8/01/23	Unknown (1 suspect dog or predator)		
Middleton Beach East	YV Right (White) & unb	1	9/08/22	2			13/09/22	2	22/09/202, 2,24/09/22	Unknow (suspect Silver Gull)		
Middleton Beach East	YV Right (White) & unb	2	9/10/22	3			8/11/22	3	15/11/22		2	13/12/22
Middleton Beach East	YV Right (White) & unb	3	19/01/23	3	3/02/23	Tide						
Middleton Beach East	YV Right (White) & unb	4	15/02/23	3			19/03/23	2	21/03/23	Unknown		
Goolwa beach/Tokuremoar Reserve	TT Right (Orange) & HJ Right (White)	1	26/01/23	2	3/02/23	Tide						
Goolwa beach/Tokuremoar Reserve	TT Right (Orange) & HJ Right (White)	2	10/02/23	3	7/03/23	Tide						

Overall, in 2022/23, an egg had a 6.0% chance of fledging (16 fledglings from 266 eggs), which is significantly lower than 8.3% in 2021/22 but similar to 2020/21. A nest had a 10% chance of fledging a chick (11 nests out of 110), which is down from 12.9% in 2021/22, 12.2% in 2020/21 and significantly lower than the 15.9% in 2019/20. Chick survival (28%) was slightly higher than the previous two seasons (2021/22 - 26%, 2020/21 - 26.9%). Overall, however, there has been a decline in chick survival in recent seasons. Chick survival previously ranged between 30.2% and 41% between 2009/10 and 2017/18.

Of the 52 chicks observed, 16 fledged and 36 chicks failed. The cause of the failures is unknown (36 chicks, 100%), with 26 failed chicks (72.2%) having no suspected cause; 7 chicks (19.4%) suspected avian attack with 2 chicks suspected magpie (Port Stanvac), 3 chicks suspected silver gull (Middleton Beach East, Shelley Beach), 2 chicks suspected Kestrel or bird of prey (Port Willunga South), 2 chicks (5.6%) suspected fox predation (Torrens River Mouth, Victor Central) and 1 chick (2.8%) suspected dog or predator (Bashams Beach).



Silver Gull at Aldinga (Photo: Dudley Corbett)

Two of the failed chicks made it to the 4-week stage this season, very close to fledging age but unfortunately not making it all the way (one at Maslin Beach and one at Aldinga). The Aldinga chick (nick-named 'Larry') made it to 34 days and had started to stretch its wings. The volunteers ran a roster system and warded the site continuously during the daylight hours. It was a huge disappointment to everyone, particularly the volunteers who dedicated so many hours, when the chick was not seen after day 34. At this time of year in particular, chicks usually remain with their parents post-fledging as the breeding season is at an end.



Aldinga Beach (Photo: Dudley Corbett)

Raising a chick on Aldinga Beach is particularly challenging due to the number of people and vehicles on the beach in the summer months. Permitting vehicles on the beach, adds yet another threat on top of the numerous challenges beach-nesting birds already face. Hooded Plovers will nest above the high tide mark, on the sand or pebble banks. Getting to the chick stage on Aldinga Beach is incredibly difficult. The constant disturbance by passing vehicles forces the incubating adult to leave the nest, leaving it vulnerable to predators and weather conditions.

If the eggs hatch, the adults have a limited area on this beach, in which they can freely raise their young and not be constantly disturbed by passing vehicles. Young chicks need to feed regularly and for this they need unrestricted access to their food source which is found along the shoreline. Without unrestricted access, the tiny chicks can easily starve. When the beach is lined with parked vehicles, sometimes four- five cars deep, it is impossible for the birds to access the shoreline frequently.

Adult birds will usually raise their young over a large section of the beach, moving up to two kilometres with their chicks. This allows them to find the best area with plenty of food and shelter from potential predators.

Aldinga Beach has had very poor breeding success compared to other beaches in the Onkaparinga council area. The recording of breeding success began in 2009. The only fledging recorded since then, was at Aldinga South in 2017.

A new clause has been introduced by the City of Onkaparinga under By-law 6 - Foreshore, prohibiting vehicles from Hooded Plover breeding sites (within 20m of a sign that indicates the words 'Hooded Plover breeding site'). By-law 6 Foreshore comes into effect in November 2023 and if enforced, will prevent vehicles from parking directly in front of breeding areas. Whilst this is unlikely to address all vehicle related risks to breeding Hooded Plovers, council are to be commended for implementing legislation to better protect breeding sites.



Aldinga chick 'Larry' on day 34 (Photo: Diane Randall)

Flagging

In total, 205, birds have been banded as part of BirdLife Australia's research program in South Australia since 2012. On the Fleurieu and metro Adelaide, 93 birds have been banded and given unique engraved Orange or White leg flags.

In December 2022 one adult, RT (White) was banded at the Torrens River Mouth. In March 2023, 2 juveniles were banded at Port Willunga, HW (White) and HT (White) and one juvenile at the Torrens River Mouth, XL (White). Several BirdLife Australia volunteers assisted, by talking to the public and redirecting them away from the area of beach where the BirdLife staff were working. This extra help contributed to the successful banding at both sites.

Reporting of flags is relied 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 14 pairs of unbanded birds on the Fleurieu Peninsula this season: Seacliff/ Brighton, Moana Beach, Aldinga/Aldinga North, Carrickalinga North, Carrickalinga Rotunda, Carrickalinga Estuary, Lands End, Tunkalilla East, Tunkalilla West, Ballaparudda/ Callawonga, Parsons Beach, Waitpinga West, the Inman River Outlet and Watsons Gap.



Volunteers assisted with people management during banding 2023 at Torrens River Mouth

(Photo: Tony Flaherty)

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?



Sue and Ash Read (VRCs) assisting at Port Willunga (Photo: Kerri Bartley)

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 on average 10-13 years, but can live for up to 21 years, so the banding data for the Fleurieu Peninsula is still relatively recent. However, it can be confirmed that some juveniles/chicks that were flagged in 2012/2013 and 2013/2014 (10 birds) have not been seen but could possibly have dispersed to the Coorong or Kangaroo Island.

However, several adults flagged during these two earlier seasons continue to survive and breed, for example: HV (Orange) and DP (Orange) at Port Willunga, NA (Orange) at Ochre Cove, and AR (Orange) at Port Stanvac. Some interesting observations of flagged birds for the 2022/23 season:

- HV (Orange) partnered with DP (Orange) at Port Willunga and after 2 nesting attempts DP disappeared. HV and DP had been partners for 10 years. DP had been at Port Willunga for at least 12 years.
- HV then partnered with an unbanded adult at Port Willunga for 2 more nest attempts, resulting in one fledgling.
- JR (White) was banded at Seacliff in 2019, last season JR nested at Aldinga South. This season JR made one nesting attempt at Maslins Beach – North.
- HJ (White) was flagged in late 2021 at Watsons Gap and TT (Orange) was flagged at Sheepies in early 2022 (both as juveniles). This season they partnered together and had 2 nesting attempts at Goolwa (Tokuremoar West).
- YL (White) was banded at Seacliff in 2019. Last season YL nested at the Torrens River Mouth. This season YL nested at Port Willunga – Chinaman Gully. On the fifth nesting attempt, 2 chicks fledged.
- MR (White) had one breeding attempt at the Torrens River Mouth, then unbanded/ RT (White) took over at this site for three nesting attempts.
- PT (White) and an unbanded adult had two nesting attempts at Tunkalilla West then an unbanded pair had a further 4 nesting attempts at this same location. The assumption is that PT (White) has disappeared.



Flagged bird RT (White) being released at the Torrens River Mouth (Photo: Renee Mead)

BirdLife Australia's current priorities for banding include at least one bird from unbanded breeding pairs. This season there were 14 unbanded pairs recorded (listed above). There is some uncertainty about the number of pairs at Carrickalinga making this site a banding priority. Attempts to band one of the Seacliff/ Brighton birds this season were unsuccessful, with the birds off territory when banding took place. This pair will be a priority again for next season. Fledglings are also a priority for banding, where possible, next season.



Birdlife Australia's Kasun Ekanayake banding with Sharing our Shores staff and volunteers at the Torrens River Mouth (Photo: Tony Flaherty)

Table 6. A summary of leg flagged Hooded Plovers captured and banded on the Fleurieu Peninsula to June 2023. All birds were captured by licensed and permitted banders. 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 3 rd house East	19/01/13	Juvenile	Male	metal	DK (Orange)		Sibling: EM (Orange)
Tunkalilla Beach 3 rd 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)		
Tunkalilla far West	14/11/13	Adult	Female	metal	LA (Orange)		
Tunkalilla creek/3 rd 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)

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
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)		
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	Female	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)		

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
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	Female	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)
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	Female	metal	PM (White)		
Myponga Beach East	20/10/2020	Adult		metal	YK (White)		Partner WM left (White)
Myponga Beach East	20/10/2020	Adult	Male	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	Male	metal	RJ (White)		Parents: JT right (White) & unb
Ochre Cove	1/2/2021	Fledgling	Male	metal	HN (White)		Parents: NA right (Orange) & unb
Myponga Beach Estuary	25/2/2021	Fledgling		metal	MN (White)		Parents: US left (Orange) & unb
Tunkalilla West	16/4/2021	Fledgling	Female	metal	CM (White)		Parents: PT left (White) & unb. Sibling: BN left (White).
Tunkalilla West	16/4/2021	Fledgling	Female	metal		BN (White)	Parents: PT left (White) & unb. Sibling: CM right (White)
Victor Central	7/12/2021	Fledgling		metal	VC (White)		Parents: PX right (White) & unb. Sibling: HV left (White)

Beach	Date	Age	Sex	Right tarsus	Right tibia	Left tibia	Partner/parent/sibling Flag
Victor Central	7/12/2021	Fledgling		metal		HV (White)	Parents: PX right (White) & unb. Sibling: VC right (White)
Sheepies Beach	14/12/2021	Adult		metal	KD (White)		
Watsons Gap	18/12/2021	Fledgling		metal	HJ (White)		Parents: BX left (Orange) & unb.
Maslin Beach	3/2/2022	Fledgling		metal	SV (White)		Parents: RV right (Orange) & unb. Sibling: VZ right (White)
Maslin Beach	3/2/2022	Fledgling		metal	VZ (White)		Parents: RV right (Orange) & unb. Sibling: SV right (White).
Sheepies Beach	18/2/2022	Adult		metal	NZ (Orange)		Partner: KD right (White)
Sheepies Beach	18/2/2022	Fledgling		metal	TT (Orange)		Parents: KD right (White) & NZ right (Orange)
Middleton East	21/2/2022	Fledgling		metal	CW (Orange)		Parents: YV right (White) & unb
Torrens River Mouth	8/12/22	Adult		metal	RT (White)		
Port Willunga- Chinaman Gully	28/03/23	Juvenile		metal	HT (White)		Parents: Presume HV right (Orange)
Port Willunga Chinaman Gully	28/03/23	Juvenile		metal		HW (White)	Parents: Presume HV right (Orange)
Torrens River Mouth	28/03/23	Juvenile		metal	XL (White)		

Breeding Site Management

Managing Threats to Breeding Hooded Plovers

Any evidence of threats to nests and chicks are recorded by staff and volunteers in the data portal. The threats recorded, 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 at the start of each season to discuss and plan actions based on the recommendations.



A Hooded Plover nest and vehicle tracks in the pebble bank in front of The Aldinga Washpool (Photo: Dudley Corbett)

Protective Efforts around Breeding Sites

Of the 110 confirmed nests on the Adelaide Metro and Fleurieu Peninsula, 92 (83.64%) nests had some form of management (Table 7). Along Green Adelaide's coast 48 out of the 52 (92.3%) nests were managed. The Port Stanvac site was managed this season as public access is increasing due to continued vandalism of the fence on the southern boundary. Two nests had signs and one had signs and rope fence. Two of the three nests hatched.

Along the Hills and Fleurieu Landscape Board coastline some sites are 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 14 out of 58 (24.14%) nests along the Hills and Fleurieu Landscape Board coastline, all of which were remote sites, except for Myponga Estuary and Yankalilla River Mouth which are near housing and get a considerable amount of human traffic.

Of the 26 nests that hatched, 25 (96.15%) had rope fencing with temporary signs at the access and/or signs at the nest site, 1 nest (3.85%) had just access signs (Tunkalilla West).

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 beachgoers to keep an eye out during spring and summer months.

Of the 11 nests that successfully produced fledglings, one nest (9.1%) had just temporary access signs (remote site, Tunkalilla West), and the remaining 10 fledged nests (90.9%) had a minimum of signs at the nest and a rope fence.

At 5 sites, Aldinga/Aldinga North, Port Willunga, Port Willunga South, Port Willunga- Chinaman Gully, and Maslin Beach volunteers were engaged to act as site guardians to assist with the protection of chicks and educate beach users during peak times. Wardens were present at Aldinga/Aldinga North and Sellicks to speak with beach users and drivers to raise awareness about the nests. Volunteers on the South Coast increased site visits when eggs or chicks were present, attending up to 5 times a day to assist with protection and to educate beach users.

Chick shelters were used at Seacliff/ Brighton, Torrens River Mouth, Maslin Beach, Port Willunga South and Aldinga/Aldinga North. Chick shelters 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 Seacliff, Torrens River Mouth, Maslin Beach, the three Port Willunga sites, Aldinga/Aldinga North. 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.

Volunteers organised additional measures to provide nests and particularly chicks with protection buffers at Aldinga this season. In consultation with council, a buffer area was established ensuring vehicles could still travel through. Volunteers installed wing fences and additional update signs at busy sites on the south coast for extra site protection.

Table 7. Summary of management across sites during the 2022/23 breeding season for each nesting attempt

Site	Date nest found	Hatch	Fledged	Nest management type
Torrens River Mouth	14/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Leash your dog signs,
Torrens River Mouth	2/11/2022	N		Sign Nest, Council Banners, Rope fence
Torrens River Mouth	23/11/2022	N		Sign Access Temporary, Sign Nest, Council Banners, Rope fence, Wardens
Torrens River Mouth	9/01/2023	Y	N	Sign Access Temporary, Sign Nest, Council Banners, Rope fence, Keep off the dunes signs
Seacliff/Brighton	22/08/2022	N		Sign Access Temporary, Sign Nest, Council Banners, Rope fence
Seacliff/Brighton	22/09/2022	N		Sign Access Temporary, Sign Nest, Council Banners, Rope fence
Seacliff/Brighton	6/10/2022	N		Sign Access Temporary, Sign Nest, Council Banners, Rope fence
Seacliff/Brighton	27/10/2022	N		Sign Access Temporary, Sign Nest, Council Banners, Rope fence, Shelters, Council compliance signs
Seacliff/Brighton	3/01/2023	Y	Y	Sign Access Temporary, Council Banners, Rope fence
Port Stanvac	29/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Stanvac	26/10/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence
Port Stanvac	4/01/2023	Y	N	Sign Access Temporary, Sign Nest, Rope fence
Moana Beach South/Moana Beach	12/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Moana Beach South/Moana Beach	11/10/2022	N		
Moana Beach South/ Moana Beach	18/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Permanent fence, Breeding update sign
Moana Beach South/Moana Beach	14/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Breeding update signs
Ochre Cove, Maslins	19/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	4/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	28/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	4/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	19/10/2022	N		
Ochre Cove, Maslins	2/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	28/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Ochre Cove, Maslins	22/12/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach - North	27/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	16/09/2022	N		Sign Nest, Rope fence
Maslin Beach	5/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	15/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Maslin Beach	3/11/2022	N		Sign Nest, Rope fence

Site	Date nest found	Hatch	Fledged	Nest management type
Maslin Beach	23/11/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence
Port Willunga - Chinaman Gully	13/09/2022	N		
Port Willunga - Chinaman Gully	7/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga - Chinaman Gully	25/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga - Chinaman Gully	6/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga - Chinaman Gully	26/11/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	13/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	8/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	26/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga	14/12/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence
Port Willunga South	24/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Permanent fence
Port Willunga South	6/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Port Willunga South	6/11/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence
Port Willunga South	22/12/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Permanent fence
Aldinga/Aldinga Nth	26/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Aldinga/Aldinga Nth	6/10/2022	N		
Aldinga/Aldinga Nth	20/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Aldinga/Aldinga Nth	27/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Aldinga/Aldinga Nth	5/01/2023	Y	N	Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Sellicks Beach	11/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Sellicks Beach	6/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Sellicks Beach	29/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, dogs on leash 200m council sign
Sellicks Beach	17/01/2023	N		Sign Access Temporary
Myponga Beach Estuary	5/11/2022	N		
Myponga Beach Estuary	5/12/2022	Y	Y	Sign Nest, Rope fence, Council dog sign
Carrickalinga North	4/09/2022	N		Sign Nest, Rope fence
Carrickalinga Rotunda	24/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Carrickalinga Rotunda	27/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Carrickalinga Estuary	12/12/2022	Y	N	Sign Nest, Rope fence, Council dog sign

Site	Date nest found	Hatch	Fledged	Nest management type
Normanville South	21/10/2022	N		Sign Access Temporary, Sign Nest, Rope fence
Normanville South	6/12/2022	Y	Y	Sign Nest, Rope fence
Yankalilla river mouth	1/09/2022	N		
Yankalilla river mouth	30/09/2022	N		
Shelley Beach (lady bay)	13/12/2022	Y	Y	Sign Nest, Rope fence
Tunkalilla West (PT)	12/09/2022	N		Sign Access Temporary
Tunkalilla West (PT)	17/10/2022	N		Sign Access Temporary
Tunkalilla West (unb)	17/11/2022	N		
Tunkalilla West (unb)	21/12/2022	N		Sign Access Temporary
Tunkalilla West (unb)	30/12/2022	N		Sign Access Temporary
Tunkalilla West (unb)	9/01/2023	Y	Y	Sign Access Temporary
Tunkalilla - PR Floating pair (Midway)	1/10/2022	N		
Tunkalilla - PR Floating pair (Tunk west)	17/10/2022	N		Sign Access Temporary
Tunkalilla - PR Floating pair (Tunk west)	9/01/2023	N		
Tunkalilla - PR Floating pair (Tunk west)	29/01/2023	N		
Tunkalilla Midway	17/11/2022	N		
Tunkalilla Midway	21/12/2022	N		Sign Access Temporary
Tunkalilla Midway	9/01/2023	N		Sign Access Temporary
Tunkalilla East	1/10/2022	N		Sign Access Temporary
Tunkalilla East	7/11/2022	N		
Tunkalilla East	30/12/2022	N		Sign Access Temporary
Tunkalilla East	29/01/2023	N		Sign Access Temporary
Ballaparudda/Callawonga	24/11/2022	N		
Ballaparudda/Callawonga	6/01/2023	N		
Sheepies beach	4/01/2023	Y	N	Sign Nest
Parsons Beach	9/12/2022	N		

Site	Date nest found	Hatch	Fledged	Nest management type
Waitpinga Beach (east)	26/10/2022	N		
Waitpinga Beach (east)	5/11/2022	N		
Yilki	24/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Yilki	9/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Yilki	29/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Yilki	18/10/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Yilki	23/12/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Yilki	11/02/2023	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Inman River Outlet	7/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Inman River Outlet	27/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Inman River Outlet	7/01/2023	N		Sign Access Temporary, Sign Nest, Rope fence, Dog bylaw sign
Victor Central	3/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Victor Central	27/08/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Victor Central	18/11/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Victor Central	6/01/2023	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Watsons Gap	27/08/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Watsons Gap	6/12/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Bashams Beach	23/08/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Bashams Beach	26/09/2022	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Bashams Beach	7/11/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Middleton Beach East	9/08/2022	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Middleton Beach East	9/10/2022	Y	Y	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Middleton Beach East	19/01/2023	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Middleton Beach East	15/02/2023	Y	N	Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Goolwa beach/Tokuremoar Reserve	26/01/2023	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign
Goolwa beach/Tokuremoar Reserve	10/02/2023	N		Sign Access Temporary, Sign Nest, Rope fence, Council By-law Sign

Management and Awareness Raising activities during 2022/23

In the 2022/23 breeding season, the following activities were carried out:

Threat Management

- BirdLife Australia met with each Council, and National Parks staff (Newland Head CP) to discuss the start of the season and go through the new 2021/22 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.
- The Our Plover Coast project (Landscape Priority Fund grant, 2 years) enabled foredune weed control at 20 Hooded Plover breeding sites (follow-up occurring in 2023/24) across the Hills and Fleurieu Landscape Board coastline, with nurseries (predominantly the Yankalilla Community Nursery) providing 20,000 spinifex seedlings to be planted by community groups including the Friends of the Hooded Plover in winter 2022 and 2023. In addition to this, budget was put towards rabbit and fox control at particular sites, and all known fox dens were fumigated in District Council of Yankalilla coastal reserves in 2021/22, with follow-up in 2022/23.



Spinifex planting – Our Plover Coast (Photo: Breathe Easy Community Group)

- New 'Hoodie News' A-frame signs at local cafes communicating breeding activity.
- VRCs and volunteers put in significant effort and time to warden sites to assist in the chick phase. Of note, this season, 420 volunteer hours were dedicated at Aldinga North to get chick 'Larry' to 34 days. At Port Willunga 600 volunteer hours over 47 days was dedicated to get four chicks through to fledging late in the season.

Sharing our Shores staff engage in a wide range of activities throughout the season that relate to improving Hooded Plover conservation in the region, with some examples being:

- Surveyed beaches for breeding activity, prior to sand replenishment operations in March 2023 at Semaphore Park, West Beach, and Henley Beach. Contractors were consulted and the nest at the Torrens River Mouth was monitored at the commencement of works to ensure no disturbance to incubation. There was improved collaboration this season, between BirdLife Australia, DEW, and the contractors to ensure no disturbance to breeding.
- Liaised with Port Stanvac Refinery staff and the Department of Infrastructure and Transport to coordinate fencing re-establishment on the southern boundary and coordinated fox control with the fox den detection dog.
- In January and February 2023, a heavy rain event flushed a large quantity of juvenile European Carp from the Murray Mouth. Large numbers of dead fish were reported along Middleton and Goolwa Beaches. Portal reports indicate that there was an increased number of silver gulls, little ravens and magpies attracted to the fish. At times their presence was reported to disrupt incubation for the Hooded Plovers. This event may have had a negative impact on breeding success. Birdlife Australia staff and volunteers worked closely with Department of Primary Industries and Regions South Australia (PIRSA) to ensure breeding was not impacted during the clean-up operations, where heavy machinery needed to be used in some instances.



Fish on beach at Middleton Point (Photo: Sue and David Thorn)

Dog management and compliance

- Of the 92 nests that had some form of management, 42 nests (45.65%) had council dog signs installed that require dogs to be on-lead near the breeding zones (dogs are prohibited at Normanville South). With several By-law reviews taking place this season and next season, it is expected that the use of council dog signs will increase.
- It was the first season (as of November 2022) that City of Onkaparinga's new by-law requiring dogs to be on lead within 100 metres of a sign indicating Hooded Plover and/or Red-capped Plover breeding.
- Hooded Plover training sessions were provided by a combination of Sharing our Shores staff and VRCs to Council compliance staff at City of Victor Harbor.
- Councils invest in compliance monitoring and patrols and share this data with BirdLife Australia. This is presented in council reports that explore how major threats are trending in each council region, and the impact that patrol efforts may be having.

Fox management and aversion trials

Funded by Green Adelaide, Deakin University honours student, Finn Saurine, researched the effectiveness of a commercially available product called FOXWatch™. Trials were established on Fleurieu Peninsula, Adelaide metro and Yorke Peninsula beaches.

The FOXWatch™ device has a detection range of 12 metres and emits a sweeping ultrasonic sound at 20- 24kHz in 3 pulses. It was first trialled on mock nests and showed some promise. The FOXWatch™ devices were installed by Sharing our Shores staff at 12 sites and control devices were installed at a further 8 sites on the Fleurieu Peninsula and Adelaide metro beaches. Video and still motion sensor cameras were installed to record the response by foxes to the FOXWatch™ device and on the control sites.



Fox cubs at the Torrens River Mouth nest site (Remote sensor camera)

The data collected showed that the response to the device was varied, with some foxes deterred by the sound, whilst some foxes showed little or no response to the device.

Sound deterrents could be useful as part of integrated fox management but did not have a significant effect on breeding success on its own. The issue of managing foxes continues to be a major barrier to breeding success for Hooded Plovers. Further research is required to determine how the FOXWatch™ could be successfully implemented as part of integrated fox management.



BirdLife Australia staff Kerri Bartley setting up a camera for the FOXWatch® trials.

The cameras provided additional information for the monitored breeding pairs this season by confirming nest outcomes and causes of nest failures on sites where the trial was implemented.

Table 8. 2022/23 season showing sites where FoxWatch trials were installed and the success or fate of the nest.

Site	Fate of nest	Cause of failure	Additional information
Torrens River Mouth	Failed	Fox	Multiple foxes
Inman River	Failed	Fox	Fox predated night of hatching
Myponga Estuary	Hatched	-	Fox on camera
Normanville South	Hatched	-	Fox on camera
Ochre Cove	Failed	Fox	-
Watsons Gap	Hatched	-	-
Middleton East	Hatched	-	-
Port Stanvac	Hatched	-	-
Sheepies	Hatched	-	Fox on camera
Victor Central	Hatched	-	-
Goolwa Beach	Failed	Tide	
Yilki	Failed	Abandoned	Fox on camera



Nessie the Conservation Dog with handler Mandy (Photo: Tony Flaherty)

Green Adelaide also funded 'Nessie' The Conservation Dog and den fumigation in partnership with local government. Nessie and her handler Mandy undertook fox den searches around Hooded Plover breeding sites in the following metro areas: Torrens Island, Mutton Cove, fort Glanville, Semaphore, Tennyson Dunes, Henley South/ West Beach, Breakout Creek and Seacliff.

The use of the Conservation Dog has attracted positive media and community interest. As well as social media and radio coverage, a segment with the Deputy Premier Dr Susan Close was aired in January on Seven Nightly News, including an interview with Birdlife Australia's Deborah Furbank.

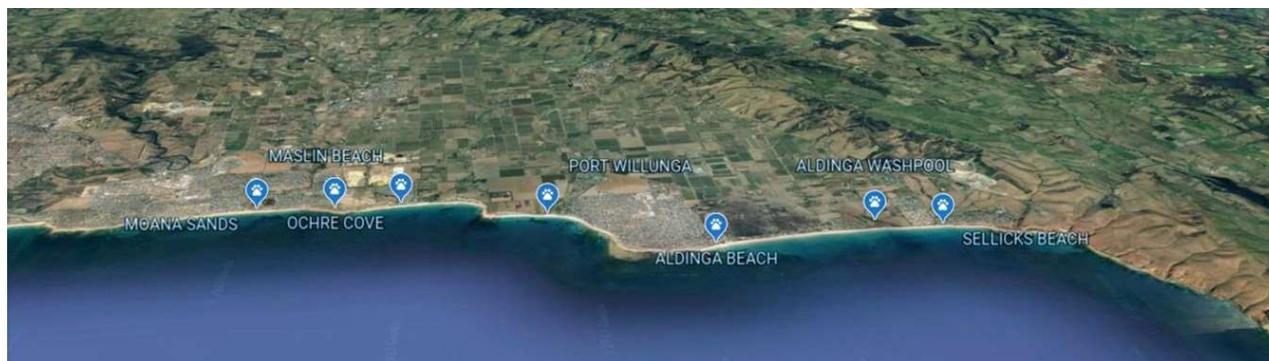
Fox den fumigation is seeking to reduce predation risk, and target denning foxes near nesting territories, whose young may then learn beach foraging behaviours. The work is not intended as a fox control programme. The range of methods necessary to effectively control foxes, such as baiting, trapping and shooting, are not feasible in most urban situations. Within the urban area, fox den fumigation is one of the few methods available and suitable for localised fox problems and is consistent with approaches in the national Threat Abatement Plan for Predation by the European Red Fox (DEWHA 2008).

Figure 7 Conservation Dog fox den search locations - Torrens Island to Seacliff



Searches were undertaken in the local government area of Onkaparinga at Maslin Beach, Moana Sands, Ochre Cove, Port Willunga, Aldinga, Silver Sands, Sellicks Beach and Aldinga Conservation Park/ The Washpool.

Figure 8 Conservation Dog fox den search locations City of Onkaparinga



Additional searches were undertaken at Port Stanvac and on the southern Fleurieu Peninsula between the Hindmarsh and Inman estuaries and between Middleton and Tokuremoar.

This season, obtaining Phostoxin® has been problematic and getting Den-co Fume® has been a challenge due to transport and storage requirements. This has had an impact on the number of fumigated dens. Land managers (Council and National Parks) contributed to fox den searching and control over the 2022/23 season.

Liaising with Councils and National Parks and Wildlife

- Wendy White, in her role as Volunteer Coordinator, sent weekly email updates to relevant councils and Newland Head CP Park Rangers with breeding updates and any key issues.

BirdLife Australia staff:

- Provided submissions to: City of Marion for Hallett Cove Seaside Pool; City of Onkaparinga for Sellicks Motorcycle Race; City of Port Adelaide Enfield for the Dogs on Beaches community consultation; and The City of Onkaparinga for the by-law review.
- Liaised with City of Victor Harbor for One Electric Day festival to ensure nesting sites were not impacted. Attended an Australia Day briefing with City of Onkaparinga. Provided advice to the Coastal Management Team regarding sky diving landing areas near breeding Hooded Plovers at Carrickalinga. Provide City of Onkaparinga with advice for internal review/ recommendations of Foreshore By-law (no.6) due for implementation January 2024 and provided training to City of Onkaparinga Community Safety staff.

Volunteer Regional Coordinators (VRC):

- 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 council support 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. Sue and David Thorn contributed a tremendous effort setting up and moving fencing across the Fleurieu South Coast. The VRCs and volunteers in the Onkaparinga region were responsible for moving fencing and signage throughout the season after the initial set up by council staff.
- Monitored MyBeachBirds Data Portal to ensure high quality data is recorded by volunteers in each region.
- Attended start and end of season VRC meetings.
- Organised regional volunteer meetings.
- VRCs and experienced volunteers provided multiple BNB Hub, MyBeachBirds Portal and beach training sessions for new volunteers. 20 new volunteers were registered and received training and mentoring this season through a variety of avenues.
- Attended the National Hooded Plover Regional Coordinators meeting, online.
- Assisted at pop-up information sessions at Port Willunga, Aldinga North, Yilki, Seacliff/Brighton and the Torrens River Mouth.
- Radio interviews, articles and social media posts were provided by VRCs across a range of platforms.
- VRCs provided regular updates to volunteers in their region via texts and emails.
- Coordinated rosters to ensure adequate breeding pair monitoring and wardening.

Awareness raising activities:

- Two Hooded Plover Training Workshops were held at Normanville to recruit and train new volunteers. The first workshop focused on an introduction to the birds and the second a more detailed workshop on monitoring. A third Beach-nesting Birds Information session was held at West Beach focusing on Hooded Plovers, Red-capped Plovers and Fairy Terns. All workshops had field components.
- Sharing our Shores staff provided regular input into Birds SA and BirdLife Australia's Safe Beaches for All campaign working group and to government agencies.
- Hooded Plover end of season celebration lunch and afternoon for volunteers and staff at Sellicks Beach Community Hall with 75 participants attending, including Deputy Premier Susan Close and Mayor Moira Were AM (City of Onkaparinga). A moving Welcome to Country was delivered by Quahli Newchurch of the Kurna community. Presentations were provided by Renee Mead, Wendy White, John Cobb, Sue and Ash Read, Dudley Corbett and David and Sue Thorn. Additional presentations were provided by Caroline Taylor on our Plover Coast project, U3A by Roslyn Shirlaw, FOXWatch™ trials by Deborah Furbank, Green Adelaide update by Tony Flaherty and a Red-capped Plover and Fairy Tern update by Kerri Bartley.



Celebration Event 2023 (Photo: Tony Flaherty)

- Sharing our Shores staff provided Beach-nesting Birds presentations to a range of groups: Green Adelaide's Adult Coastal Ambassador program, Lockleys Probus Club, Warpulai Kumangka on the Safe Beaches campaign, Hindmarsh River Estuary Bird Watching launch, Youth Climate Summit guided walk, Victor Harbor Coastcare, Birds SA and Candidates for the City of Charles Sturt mural at the Torrens Outlet.

- Sharing our Shores staff and volunteers had public engagement events and activities at:
 - Our Plover Coast spinifex planting event at Inman River, Hindmarsh River and Waitpinga Estuaries
 - Hindmarsh River Community Event
 - Yankalilla Show
 - The Victor Harbor Whale Festival
 - Southern Surf Festival (Middleton)
 - Pop up information events at Seacliff, Henley Beach, Port Willunga and Yilki



Information stall at the Victor Harbor Whale Festival (Photo: Kerri Bartley)

- The Fleurieu Environment Centre (FEC) ran a kids education session in January at Normanville it was led by Fleurieu Marine Education with support from Wendy White.
- The FEC continues to have a permanent Hooded Plover display and sent out updates throughout the season to the community about the breeding activity via their newsletter and Facebook page.

- A new Facebook page 'Hoodies Down South- Adelaide Southern Beaches' has been created by Linda Corbett for the Onkaparinga Volunteers. This has attracted the interest of local radio stations.
- Several Adelaide Metro and Fleurieu Peninsula councils promoted Hooded Plover awareness on social media.
- Roslyn Shirlaw developed and presented a course on Birdwatching: Beach-nesting Birds for the University of the Third Age (U3A) program, an international volunteer organisation that provides educational and leisure opportunities for people over 50. It ran over 5 sessions and included classroom sessions and field trips. Sue and David Thorn, Wendy White and volunteer Keith Jones assisted with the course presentation. Five attendees expressed interest in volunteering, with three attendees having signed up as South Coast Hooded Plover volunteers before the end of the 2022/23 season.



Roslyn Shirlaw presenting the U3A course on birdwatching.

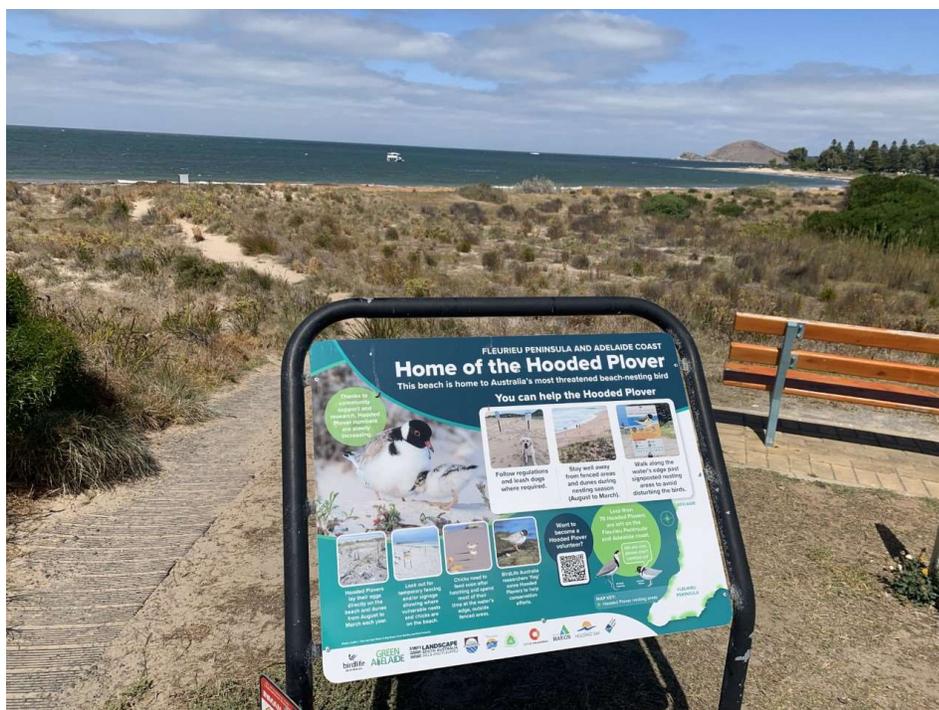
- Wendy White as Volunteer Coordinator undertook:
 - Pop-up information sessions at Yilki, two at Port Willunga and one at Aldinga North
 - Kids activities with Fleurieu Marine Education at the Festival of Nature in Normanville, and activities with Victor Harbor and Goolwa childcare centres
 - Children’s activities at Goolwa Library
 - Attended Victor Harbor Council Biodiversity and Natural Assets Management Plan workshop
 - Assisted with two volunteer information sessions at Normanville
 - Met with PIRSA staff at Middleton re fish clean up
 - Pre-season meeting with councils
 - Assisted with the U3A Beach-nesting Bird Course
 - Organised materials for chick shelters for a Tatachilla school project
 - Trained 16 new volunteers, 8 from workshops and 8 additional volunteers
 - Organised pre-season meetings for Victor Harbor and Yankalilla volunteers
 - Presentation to the Fleurieu Business Group



Pop-up information session at Yilki (Photo: Kerri Bartley)

Education and promotional resources

- 2 x New Green Adelaide Hooded Plover banners developed and displayed at end of season celebration event
- A new Beach-nesting Bird pull-up banner has been developed and will be available for events next season raising awareness of Fairy Terns, Hooded Plovers, Sooty and Pied Oystercatchers and Red-capped Plovers.
- 12 new chicks on Beach Banners designed and ordered
- 73 permanent 'Home of the Hooded Plover' signs have been redesigned and installed
- 'Watch Out for Hoodies' for vehicle drivers flyer printed for City of Onkaparinga to be given out at libraries when issuing beach permits and by community groups at beach ramps where vehicles access the beach
- Dogs on Leashes flyer produced designed for Dog Parks and Dog Obedience classes
- Volunteering information business cards produced for handing out to interested community members
- The local Green Adelaide Hooded Plover brochure was given out by volunteers to drivers at the vehicle ramp at Aldinga Beach



New sign installed at Inman River, Victor Harbor (Photo: Kerri Bartley)

Hooded Plover Mural

This season City of Charles Sturt in partnership with SA Water commissioned a mural on the wall of the River Torrens/Karrawirra Pari Outlet. Sharing our Shores with Coastal Wildlife staff gave a one hour 'online' presentation on Hooded and Red-capped Plovers to the artists prior to their submissions to Council. Artist TalyrJay engaged the local community to take part in the creation of the mural. The mural reinforces the dog on a lead message that is on educational signage and in the council By-laws. This was a great initiative by council to ensure beachgoers are aware of the leashing requirements.



Mural at the River Torrens/Karrawirra Pari Outlet (Photo: Deborah Furbank)

Hooded Plover Biennial Count

In November 2022, volunteers in Adelaide metro and the Fleurieu Peninsula took part in the national Biennial Hooded Plover Count coordinated by the National Office. Participants surveyed a predefined section of coastline, recording all observations of Beach-nesting Birds, including terns. Information on evidence of nesting and the presence of threats and invasive weeds was also collected for each observation where possible. Approximately 2,754 kilometres of coastline was surveyed during the count, across New South Wales, Victoria, South Australia and two regions in Tasmania. In the Adelaide metro and Adelaide Hills and Fleurieu region 90.3 kilometres of beach was surveyed. 64 adults and 3 juveniles were recorded by 51 participants. This equates to a density of 0.71 birds per kilometre, the same density as 2018 but an increase from 0.67 in 2020. Further information on the Biennial Hooded Plover Count can be found here: [2022 Hooded Plover Biennial Count](#)

Acknowledgements

A huge thank you to all the amazing volunteers who participate in Hooded Plover monitoring. Every contribution adds to our knowledge of this threatened species and assists us in improving and adapting the recovery program. Adelaide Metro and Fleurieu Peninsula volunteers should be especially proud, as they 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 with assistance from Stevie Austin and Jim Moore (Fleurieu-Adelaide Metro), Sue and Ash Read (Fleurieu North – Onkaparinga Beaches), Dudley Corbett (Aldinga to Sellicks Beach), 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. We thank Sue and Ash Read for their amazing contribution to the Onkaparinga VRC role for the past 8 years as they step back from the role at the end of this season.

Wendy White 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, Warrick Barnes and the Communications Team) from Green Adelaide continued to provide invaluable support to volunteers and land managers. This season for the fifth year, the Green Adelaide Board (previously AMLR NRM Board) funded the Sharing our Shores with Coastal Wildlife positions held by Emma Stephens, Deborah Furbank and Kerri Bartley at BirdLife Australia, adding a further layer of support to the program. Thank you to the Beach-nesting Bird team at Birdlife Australia for providing ongoing in-kind support through its resources, expert advisory team and national framework and network for Hooded Plover conservation. 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. Thanks also to Peter Allen, Senior Coastal Planner, Coast and Marine Branch, Department for Environment and Water for his ongoing efforts to gain access to monitor Port Stanvac.

A special thanks to the Fleurieu Environment Centre (Normanville) Coordinator for their amazing displays and information noticeboards, and to volunteers for assisting with awareness raising events.

Thank you to Dr Anne Fowler (bird veterinarian specialist) for the health assessment of the Hooded Plover chick before it was returned to its parents at Port Willunga.

This project is supported by the Green Adelaide Board and delivered by BirdLife Australia through funding from the Australian Government's National Landcare Program.



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