Back from the Brink

Final Report

A summary of outcomes resulting from conservation interventions for priority threatened species and ecological communities in the Mount Lofty Ranges and Fleurieu Peninsula.

LANDSCAPE SOUTH AUSTRALIA HILLS AND FLEURIEU

Photo credits for cover page

Left photo: *Caladenia gladiolata* (Credit: Jerry Smith)

Right photo: Hooded Plover (Credit: Martin Stokes).

Bottom photo: Stipiturus Conservation Park.

Acknowledgements:

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Project partnerships were critical to the success of the project. Key partners include:

Threatened flora: South Australian Seed Conservation Centre at the Botanic Gardens and State Herbarium, Green Adelaide, South Australian National Parks & Wildlife Service and private landowners.

Threatened fauna: National Parks & Wildlife Service of South Australia, Green Adelaide, BirdLife Australia, local land managers and volunteers from Birds SA, Friends of the Adelaide International Bird Sanctuary, Victorian Wader Study Group (VWSG) and Friends of Shorebirds SE (FOSSE).

Threatened ecosystems: Nature Glenelg Trust, Friends of Stipiturus and Hesperilla Conservation Parks, National Parks & Wildlife Service South Australia.

Contents

Introduction

This report summarises the changes in rates of decline and population trends of threatened species and ecological communities in the Mount Lofty Ranges and Fleurieu Peninsula as part of the Back from the Brink project.

Back from the Brink was a five-year project that aimed to reduce the risk of extinction and improve the long-term viability of 39 Matters of National Environmental Significance (MNES) within the Adelaide and Mount Lofty Ranges Management Unit. This included 20 threatened plants, 17 threatened animals and two threatened ecological communities. This was achieved by:

- Planning and delivering targeted conservation interventions, working with landholders, partners, key stakeholders and contractors.
- Strategic community engagement via awareness raising events, workshops and training, and collaboration with First Nations groups.
- Developing and delivering population monitoring.

Threatened Flora

The population trends for 20 threatened plants are outlined below. Thirteen threatened plants had an increasing trend, one a stable trend, two a decreasing trend. A population baseline was established for two species and two species could not be located in the region.

1. **Mount Compass Oak-bush (*Allocasuarina robusta*)**

In 2011, there were 1,200 Mount Compass Oak-bush plants (data taken from recovery plan) and in 2022 there were 3,910 plants. This increase is almost exclusively from translocations. This species is easy to propagate and provided plants are protected from grazing, plant survival is high. This species is now used in revegetation projects across the southern Fleurieu.

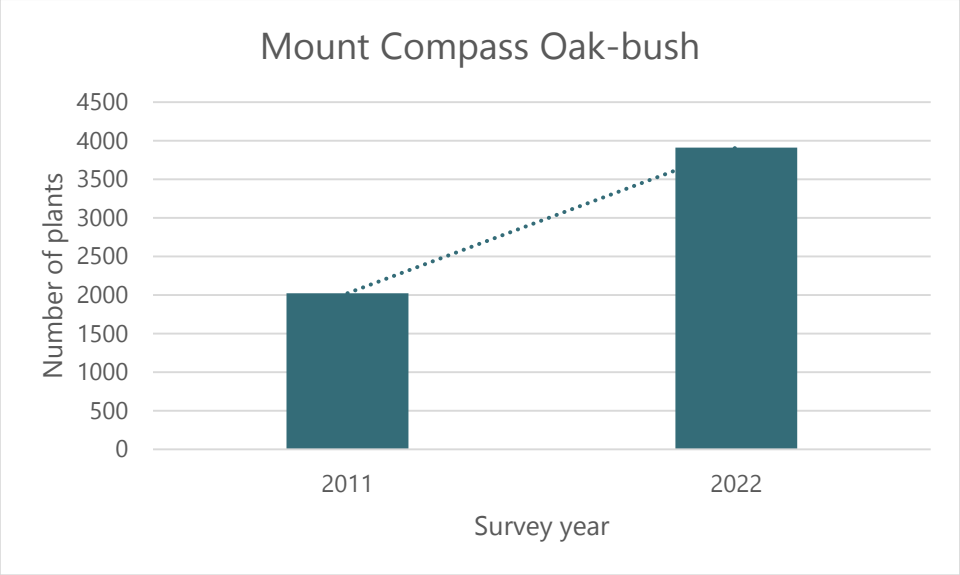


Figure 1: Mount Compass Oak-bush.

2. White-beauty Spider-orchid (*Caladenia argocalla*)

Across the region White-beauty Spider-orchid was recorded at three sites with 87 flowering plants in 2006 and was recorded at seven sites with 128 flowering plants in 2022. Overall, the number of flowering plants has increased. This is partly due to translocations, with 46 of the flowering plants in 2022 being from translocated stock. In addition, increased survey effort has resulted in four new

sites and sub-populations being discovered. Grazing protection at two sites, combined with some habitat augmentation at one of these sites, has also resulted in an increase in flowering plants.

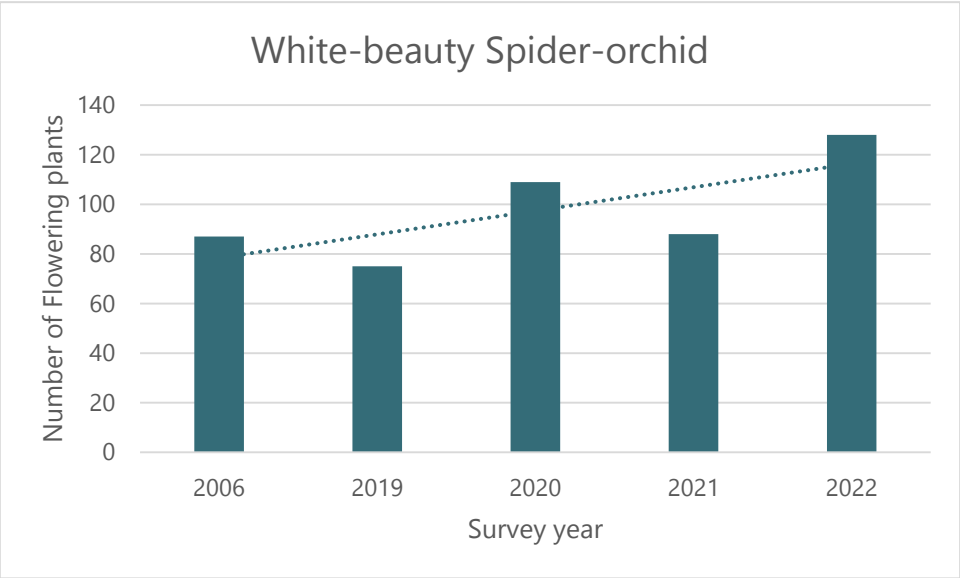


Figure 2: White-beauty Spider-orchid translocations into fenced area (July 2022).

Figure 3: White-beauty Spider-Orchid.

3. Pink-lipped Spider-orchid *(Caladenia behrii)*

Across the region we recorded a total of 2,917 flowering Pink-lipped Spider-orchid plants in 2006 and 894 flowering plants in 2021. The decrease is possibly due to seasonal variation, but more likely a result of changes to habitat caused by the 2016 Sampson Flat bushfires and resulting early successional vegetation structure, and an increase in grazing pressure across the intervening period in the northern sites. It was noted that across the range the largest populations were in late successional woodlands and/or areas protected from grazing. The breeding program has over 400 of these plants awaiting translocation once of a suitable size for the southern populations, which are protected from grazing.

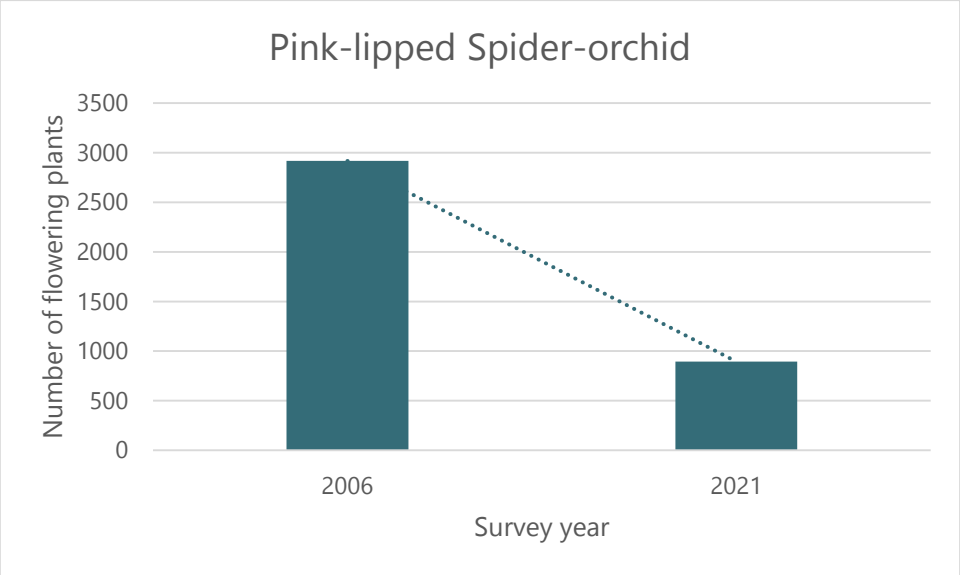


Figure 4: Pink-lipped Spider-orchid plants being propagated at Botanic Gardens.

Figure 5: Pink-lipped Spider-orchid.

4. Bayonet Spider-orchid (*Caladenia gladiolata*)

There were 11 flowering Bayonet Spider-orchid plants in 2006 and 33 flowering plants in 2022. The increasing trend is the result of an intensive survey effort (which discovered a new sub-population of 14 flowering plants) and translocations. There are over 300 more plants from the breeding program awaiting translocation once they are a suitable size.

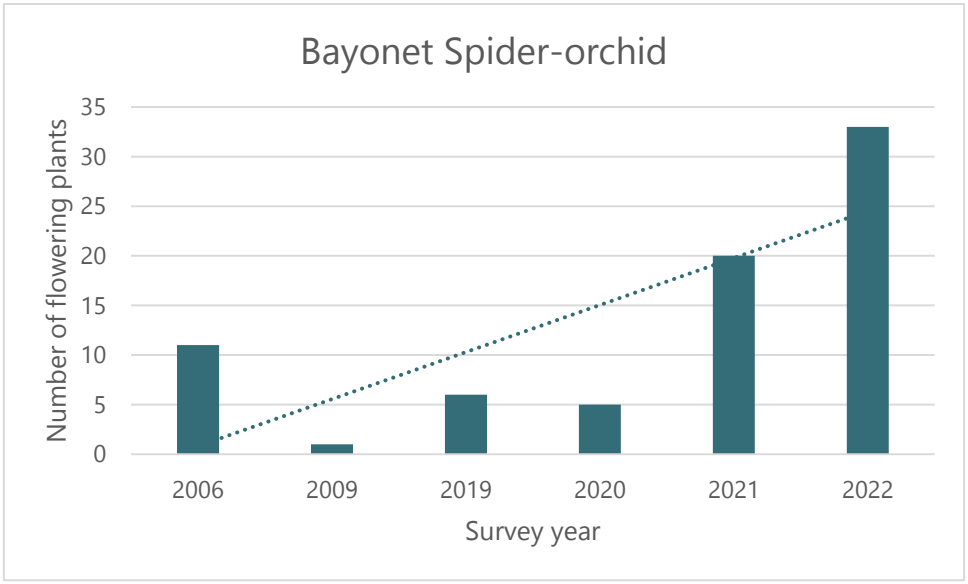


Figure 6: Bayonet Spider-orchid translocations (August 2022).

Figure 7: Bayonet Spider-orchid.

5. Kangaroo Island Spider-orchid (*Caladenia ovata*)

In 2018, there was one flowering Kangaroo Island Spider-orchid plant at one site and in 2022 there were 23 flowering plants across three sites. The increasing trend is due to a prescribed burn over one population, and a third site was discovered in 2022.

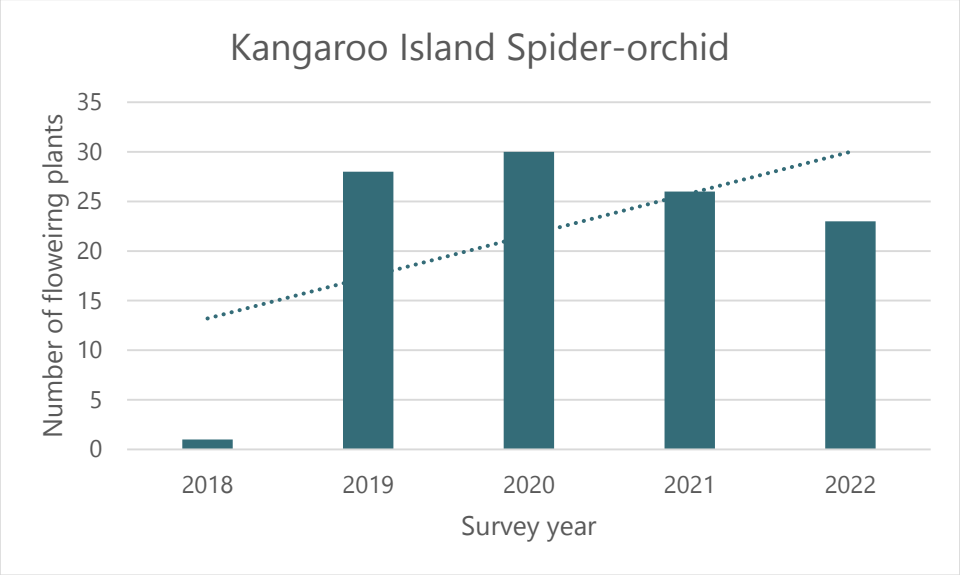


Figure 8: Kangaroo Island Spider-orchid in propagation at Botanic Gardens.

Figure 9: Kangaroo Island Spider-orchid.

6. Copper Beard-orchid (*Calochilus cupreus*)

In 2018, there were 19 flowering Copper Beard-orchid (*Calochilus cupreus)* plants in the region and in 2022 there were 34 flowering plants. Despite significant survey effort, this species is still only known to be in one location. The increase in numbers to a consistent level of 30 plants is due to investment in weed control and grazing protection. This plant has an established breeding program and there will be over 50 plants available for translocation in the next two to three years.

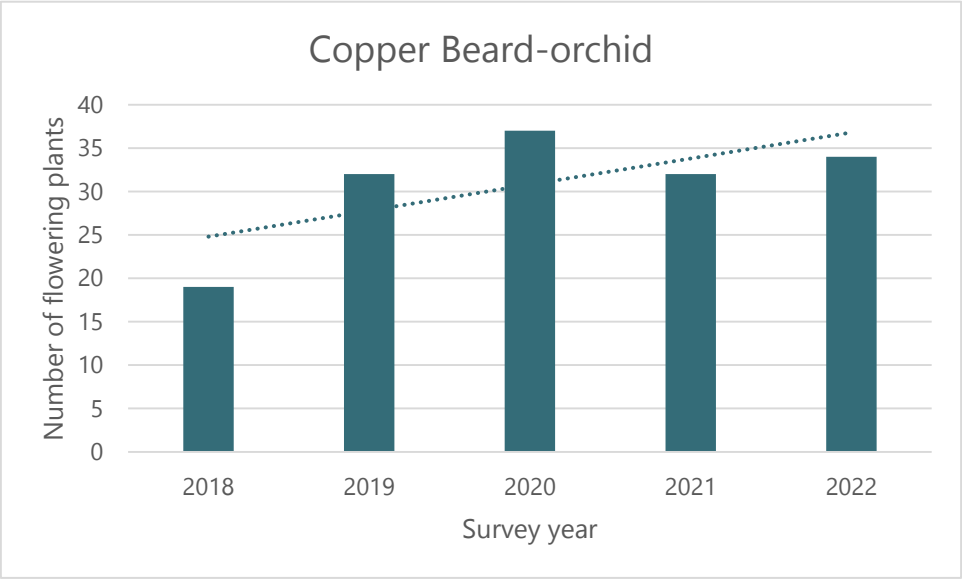


Figure 10: Copper Beard-orchid survey.

7. Finniss Helmet-orchid (*Corybas dentatus*)

Historical data for Finniss Helmet-orchid related to distribution only, not abundance, so the aim was to set a baseline for abundance. However, this species could not be located in the wild despite a number of searches at previously recorded locations. The historical records noted that it was likely a hybrid based on current orchid descriptions. If it is a valid taxa it is possible it has become extinct, but there is nothing at the historical locations, in regards to threats, that would support this.

8. Osborn's Eyebright (*Euphrasia collina ssp. osbornii*)

In 2020, there were 2,430 Osborn's Eyebright plants at seven sites in the region. In 2022, there were 32,470 plants at ten sites. The variance between 2020 and 2022 is partly represented by the number of sites but it is mostly predicated on survey effort. At each known site, the survey and search area was expanded beyond known distributions and new sub-populations discovered. Examples include Balquiddhur where in 2020 one patch was found of 1000 plants, in 2022 extra survey effort was undertaken and three patches were found totalling 4,914 plants. At Moppa, extra patches were found and the population went from 161 in 2020 to 692 in 2022. Newland Head was similar with significant effort put into survey and mapping, highlighting massive numbers of plants. Management of this species was insignificant except in the "swamp form" which is subject to a breeding program in recognition of the thoughts it may be a unique taxa, but that is yet to be determined.

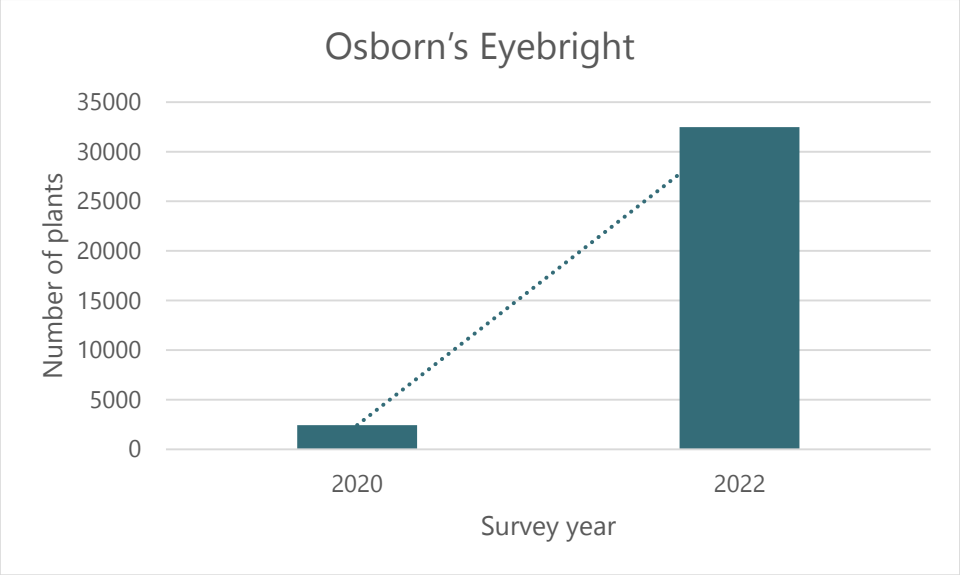


Figure 11: Osborn's Eyebright survey (2022).

9. Yundi Guinea Flower (*Hibbertia tenuis*)

In 2010, three Yundi Guinea Flower plants were recorded at one site, in 2020 there were 648 plants at two sites and in 2022 there were 689 plants at five sites.

This includes 280 plants that have been translocated in 2020 and 2021. Approximately 200 additional *Yundi Guinea Flower* plants have been propagated and are awaiting translocation when large enough.

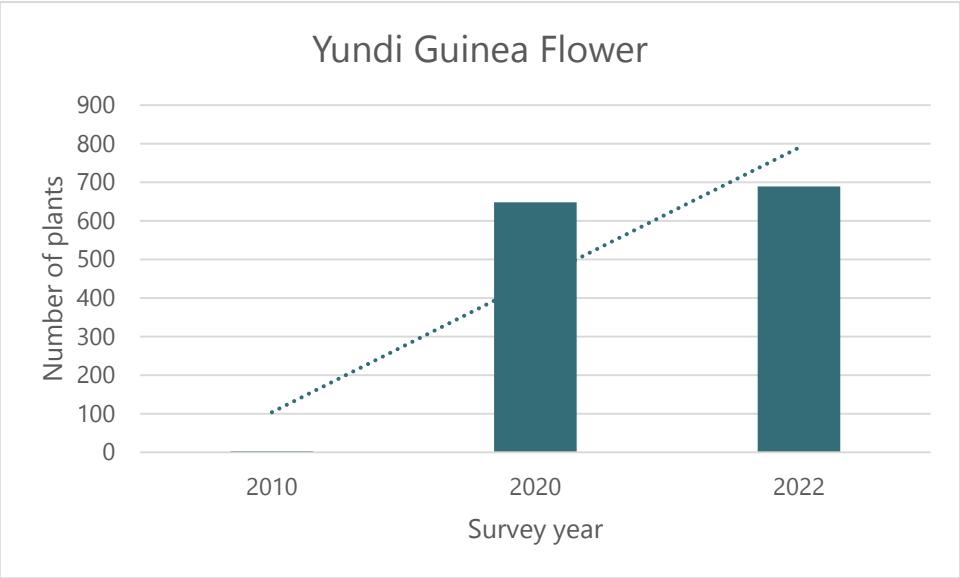


Figure 12: Yundi Guinea Flower growing within the Threatened Plant Seed Orchard at the Adelaide Botanic Garden.

10. Fleurieu Leek Orchid (*Prasophyllum murfetii*)

In 2015, there were five flowering Fleurieu Leek Orchid plants at two sites and in 2022 there were 234 flowering plants at five sites. The increase in numbers has been the result of new populations being found (one new population in 2019 and two new populations in 2020). In addition, habitat augmentation has been undertaken at sites which has significantly increased numbers e.g., one site went from zero flowering plants in 2018 to 136 in 2019.

Whilst there is a general increasing trend the number of plants has decreased the last couple of years due to grazing. In 2021 one of the augmented sites was almost completely wiped out due to grazing by native swamp rats (confirmed using cameras) and in 2022 one of the largest sites had

extensive damage by kangaroos which had got into a fenced area. We anticipate that these plants will recover in the absence of grazing (kangaroos have been removed, and the attractiveness of the augmented site is likely to have decreased with regrowth).

This species is part of a breeding program and it has been difficult developing the protocols for germination and growth, because the fungus is sensitive to media composition and the maintenance of nursery stock requires mimicking swamp conditions. The breeding program is ongoing, and we expect over 400 plants to be available for translocation once protocols can be definitively established.

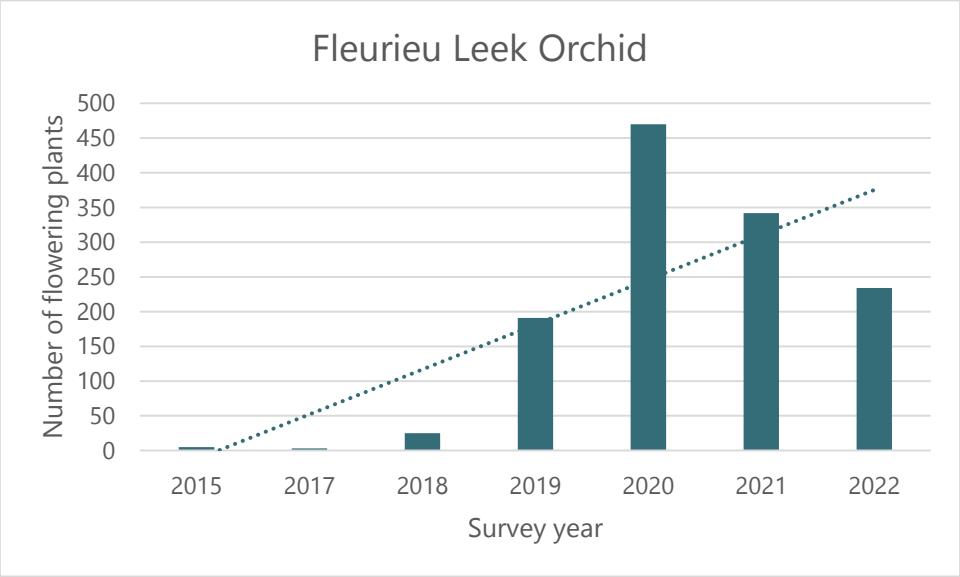


Figure 13: Fleurieu Leek Orchid survey.

Figure 14: Fleurieu Leek Orchid.

11. Pale Leek-orchid (*Prasophyllum pallidum*)

In 2021, there were 2,252 flowering Pale Leek-Orchid plants across 14 sites. There was only one total count of flowering plants undertaken in the region, however the species distribution extends well beyond the Adelaide and Mount Lofty Ranges Management Unit and it is likely this number is higher as 2021 was not a particularly good year for orchids.

Figure 15: Pale Leek-Orchid (Credit: Jerry Smith).

12. ***Plum Leek-orchid (Prasophyllum pruinosum)***

In 2008, there were 237 flowering Plum Leek-orchid plants at two sites and in 2022 there were 1,901 flowering plants at six sites. The increasing trend is due to the additional sites that have been found with increased survey effort. This species has been a part of a breeding program and translocations started in July 2023 and over 400 plants are available for translocation into the future.

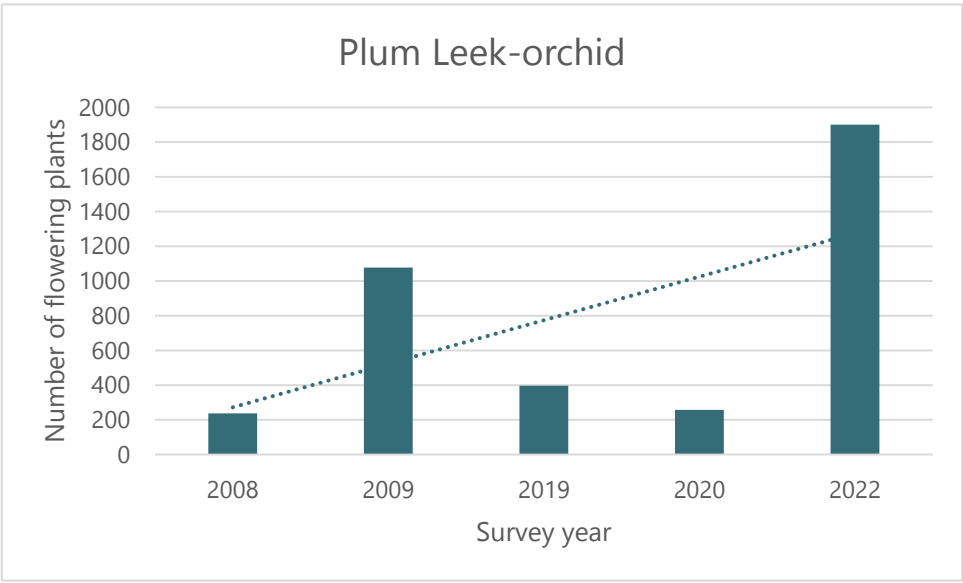


Figure 16: Plum Leek-orchid.

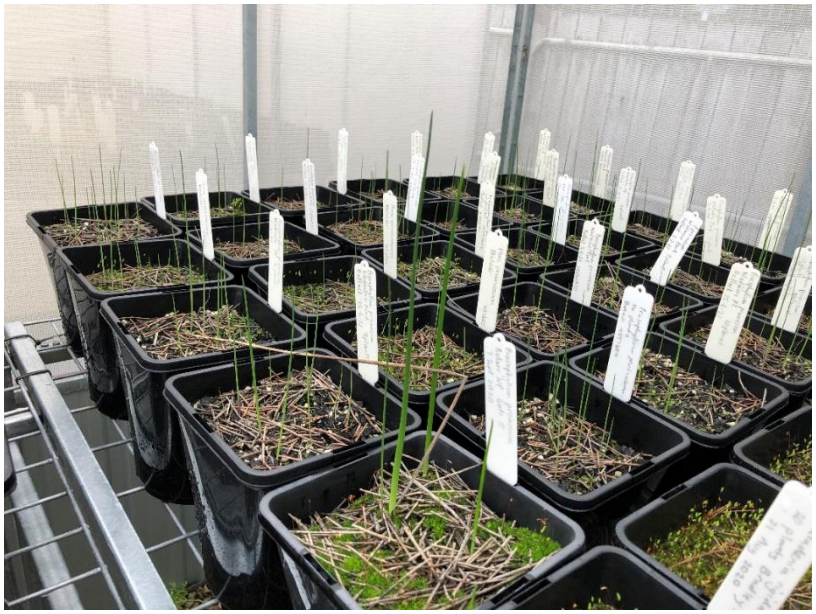


Figure 17: Plum Leek-orchid being propagated at Botanic Gardens (2022).

13. Sandhill Greenhood Orchid (*Pterostylis arenicola*)

In 2019, there were 252 flowering Sandhill Greenhood Orchid plants and in 2022 there were 1,141 flowering plants. Increased numbers are largely a reflection of rainfall, however it does include 49 translocated flowering plants at both Grange and Torrens Island. The Torrens Island population is wholly translocated individuals and increases the number of sites to two.

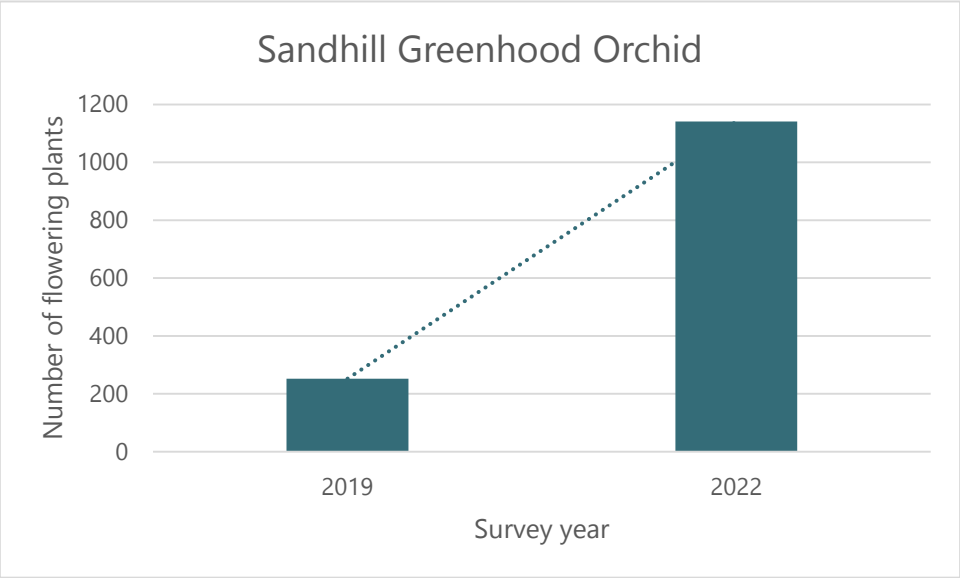


Figure 18: Sandhill Greenhood Orchid translocations at Grange (2022).

Figure 19: Sandhill Greenhood Orchid (Credit: Jerry Smith).

14. Hindmarsh Valley Greenhood (*Pterostylis bryophila*)

In 2020, there were 7,961 flowering Hindmarsh Valley Greenhood plants, in 2021 there were 1,044 flowering plants and in 2022 there were 2,343 flowering plants.

Variation in plant numbers is because of rainfall, this autumn-flowering species is reliant on good early autumn rain, such as was present in 2020. The previous good year was in 2015, when over two and a half thousand flowering plants were recorded, the previous greatest known number. Unfortunately, above average autumn rain cannot be predicted but the number of plants counted in good years is largely due to the effort in weed control of Bridal Creeper and Broom allowing for good flowering when conditions are suitable.

Despite extensive survey effort, no new populations of this species have been found. This species cannot be identified by leaves so we can only count flowering plants. The population is likely stable at around 15,000 individuals but this is an estimate.

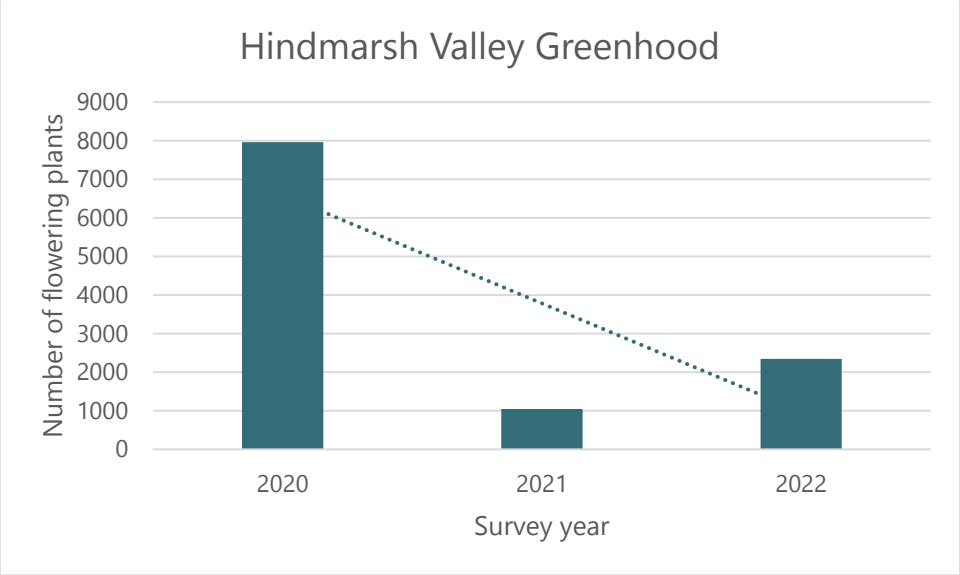


Figure 20: Hindmarsh Valley Greenhood.

15. Leafy Greenhood (*Pterostylis cucullata*)

Flowering Leafy Greenhood plant numbers have increased from 8,150 in 2007 (taken from the data in the 2007 recovery plan) to 11,252 plants in 2022. An additional population was found at Ackland Hill in 2019. The Lobethal population is now extinct after the Cudlee Creek fires. Translocations of this genetic material have been attempted but to date without success. More plants have be propagated and will be retained until site conditions at Lobethal are better suited for translocation.

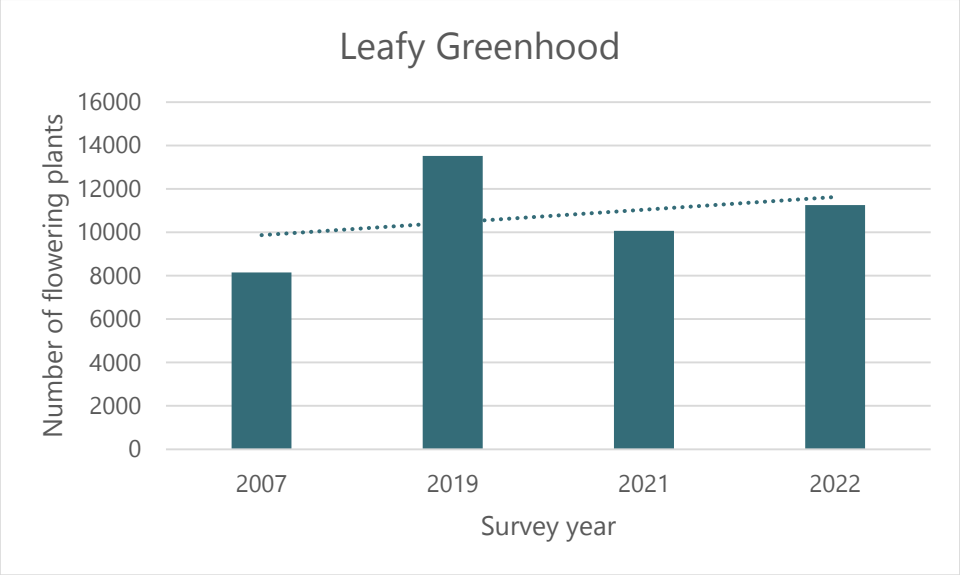


Figure 21: Leafy Greenhood plants at Botanic Gardens.

Figure 22: Leafy Greenhood.

16. Two-bristle Greenhood (*Pterostylis psammophila*)

In 2019, there were 325 flowering Two-bristle Greenhood plants found at 16 patches representing two sub-populations. In 2022 there were 1,026 flowering plants at 43 patches and across six sub-populations. The increasing trend is due to increased survey effort finding new populations, good rainfall in 2022 facilitating good flowering and translocations. Concern over the validity of the taxa remains and it is thought it is simply a colour variant of *Ptersostylis biseta*.

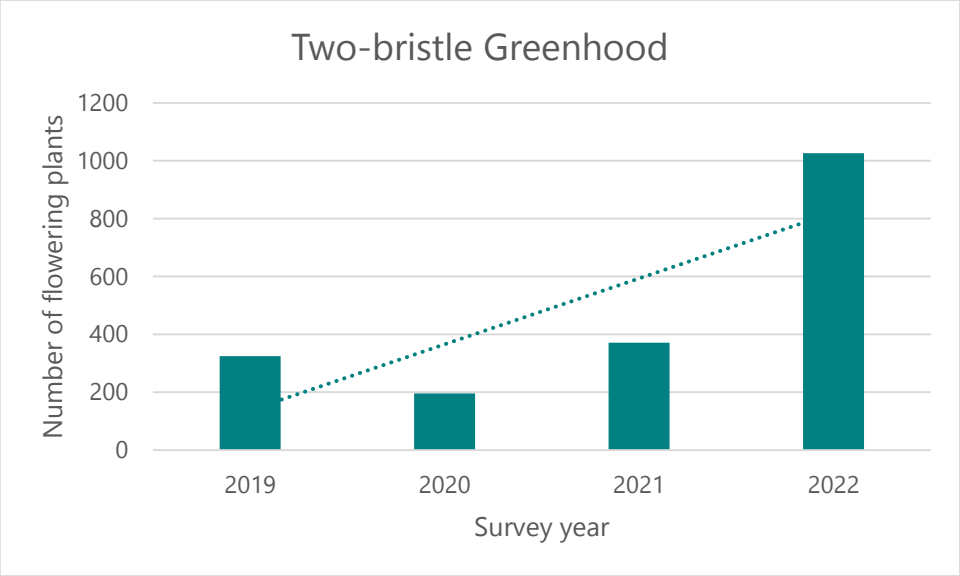


Figure 24: Two-bristle Greenhood..

Figure 23: Two-bristle Greenhood translocations (2022).

17. *Pterostylis sp. Hale*

Pterostylis sp. Hale could not be found in the region during the course of the project, despite checking all previously recorded locations of occurrence. There are doubts about the taxonomic validity of this species. It has also been reported to be widespread across Eyre Peninsula, however this data is not supported by validated specimens.

18. Butterfly Spyridium (*Spyridium coactilifolium*)

In 2022, the estimated number of Butterfly Spyridium plants in the Newland Head population is 73,372. The estimate is calculated using an average density recorded across stratified quadrats within the known distribution. The number of Butterfly Spyridium plants in all other populations is 1,430. This figure is based on total plant counts in 2022. Total population size of Butterfly Spyridium is estimated to be 74,802.

Figure 25: Butterfly Spyridium (Credit: Seed Conservation Centre).

19. Blue Top Sun-orchid (*Thelymitra cyanapicata*)

In 2019, there were 94 flowering Blue Top Sun-orchid plants in six patches across three sub-populations and in 2022 there were 225 flowering plants at 12 patches across four sub-populations. The increasing trend is due to the increase in sites as a result of translocations and increased survey effort.

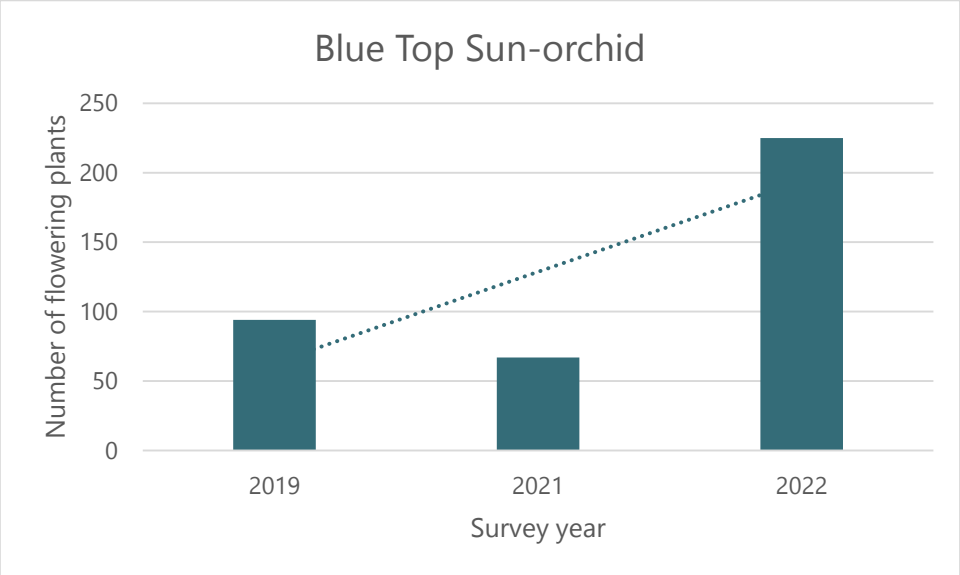


Figure 26: Blue Top Sun-orchid plants ready for translocation (August 2022).

Figure 27: Blue Top Sun-orchid.

20. Blue Star Sun-orchid (*Thelymitra hygrophila*)

In 2019, there was 13 flowering Blue Star Sun-orchid plants at Big Flat and in 2020 there were 18 flowering plants at the same site. The Big Flat site is proximal to the type located near Springton. However this taxa is at best speculative and at worst highly dubious, no clear characteristics can be differentiated beside the habitat in which it grows. Regardless of if it is indeed Blue Star Sun-orchid, a baseline has now been established at this site.

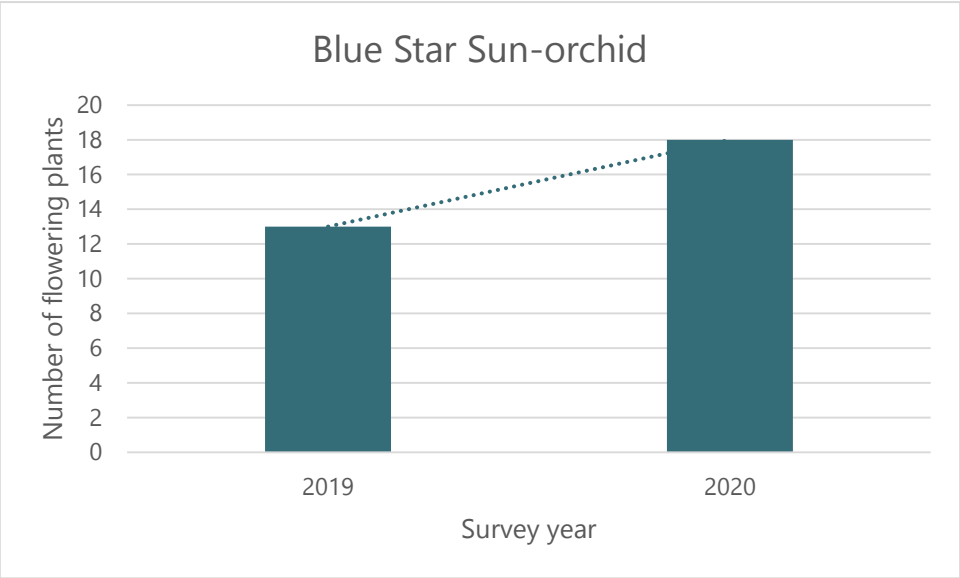


Figure 28: Blue Star Sun-orchid (Credit: Dan Duval).

Threatened Fauna

The population trends for 17 threatened fauna species are included below. Two species have an increasing trend, one stable to increasing, three stable, and three declining. A baseline was established for two species and for five species population trends are not available but other metrics have been reported (e.g. occupancy based monitoring).

1. Australasian Bittern (*Botaurus poiciloptilus*)

Region wide monitoring of Australasian Bitterns undertaken in spring-summer 2022-2023 across 28 sites, identified two occupied sites within the region; Watchalunga Nature Reserve and Tolderol Game Reserve. An opportune sighting of an Australasian Bittern was also recorded on the 3/11/2021 in Onkaparinga Recreation Park. A total of three records of individual birds at three sites.

Only one Australasian Bittern was detected at Tolderol Game Reserve over the 2022-2023 survey period, compared to multiple individuals during baseline surveys in December 2019 (Gordon & Green 2020). Detection of this lone bird and one other individual at Watchalunga Nature Reserve indicates a low density of this species across a relatively large total area of high quality habitat in the region. A wet spring season extending into the survey period as a result of consecutive La Niña conditions may have contributed to the smaller number of Bitterns present in the region at the time of the surveys. It is possible a high proportion of Bitterns have established breeding grounds inland (particularly in the Riverina region of Victoria and New South Wales) and not needed to disperse to coastal areas.

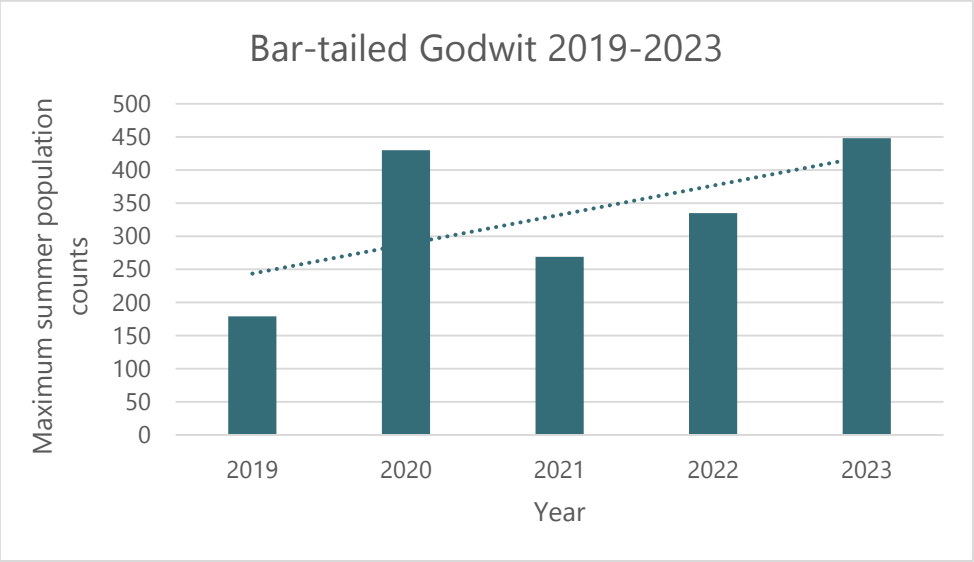
At this stage, we have no reason to suspect that the population has declined. The population that visits the Mount Lofty Ranges is likely stable, based on stability in the quantity and quality of available habitat and the ability of the species to disperse in response to habitat/prey availability across their range.

Figure 29: Australasian Bittern (Credit: John Gitsham).

2. Bar-tailed Godwit (*Limosa lapponica* ssp *baueri*)

Population counts for Bar-tailed Godwit demonstrate great variability with as few as 179 and up to 448 individuals recorded in 2019 and 2023 counts respectively. Overall there appears to be a declining population trend (more detail provided in the summary section below).

Both subspecies of Bar-tailed Godwit, (the western Alaskan breeding *spp. baueri* and northern Siberian breeding *spp. menzbieri*) are observed in mixed flocks in Gulf St Vincent. Whist under optimum conditions, they can be distinguished in the field, this is difficult during count conditions and combined population estimate for both subspecies are recorded.



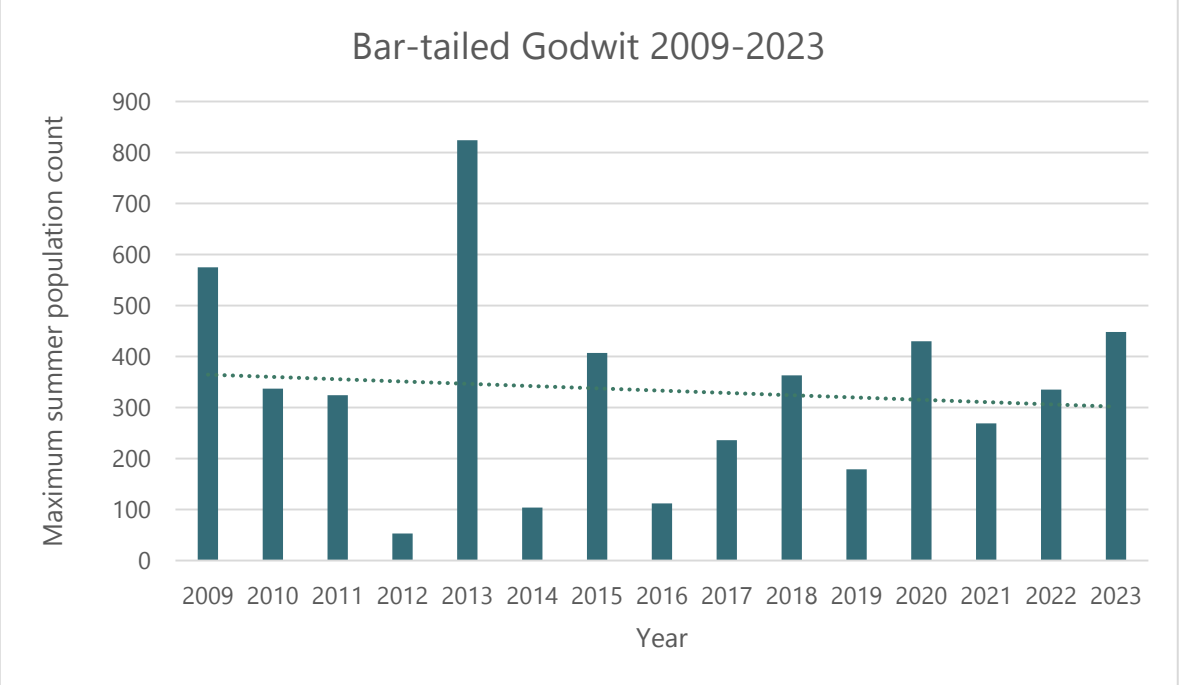


Figure 30: Bar-tailed Godwit (Credit: Martin Stokes).

3. Bassian Thrush (*Zoothera lunulata*)

The University of Adelaide used Species Distribution Models and Power Analysis to help inform and implement a monitoring program in 2021. Surveys covered 59 sites, in 36 parks with high habitat suitability for Bassian Thrush. Surveys were repeated in 2022 at the same sites with the addition of three new parks and removal of three original parks, due to the inaccessible terrain of the latter. A total of 233 individual acoustic recorders were deployed across the 59 sites, and any calls heard during deployment of recorders were included in presence data.

Bassian Thrush were detected at a total of 34 from 59 sites in 2022, compared to 27 from 59 in 2021.

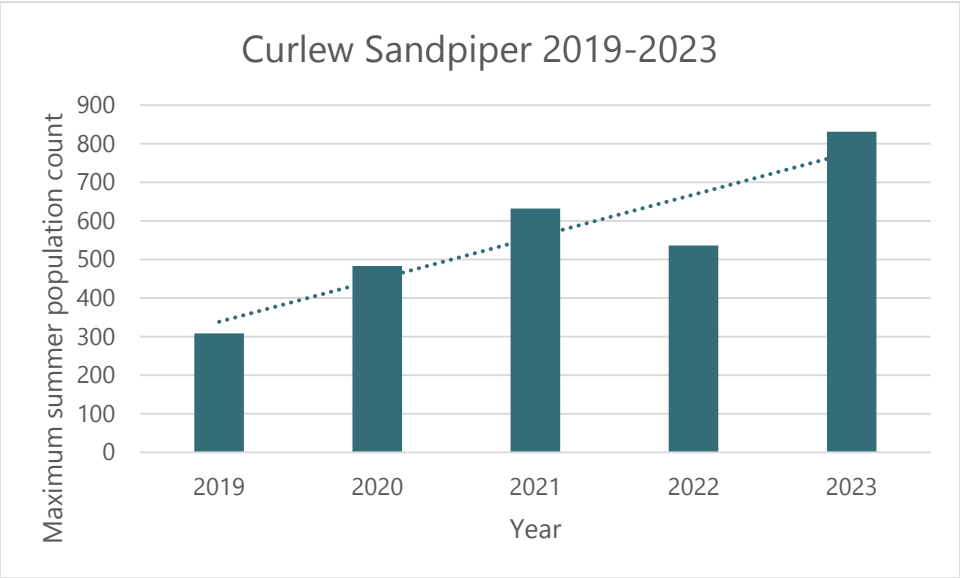
Both the 2021 and 2022, surveys undertaken by the University of Adelaide show Bassian Thrush are more detectable in the central and southern sections of the region, with few detections in the north. Surveys are being repeated by the University of Adelaide in 2023 to refine baseline occupancy data.

Figure 31: Bassian Thrush (Credit: Julia Bignall).

4. Curlew Sandpiper (*Calidris ferruginea*)

An increasing population trend is encouraging for Curlew Sandpiper, with count numbers increasing since 2016 and subsequently remaining fairly stable with an average of 440 from the last 13 seasons. This figure places it above the baseline population and notably recordings of nationally significant numbers of Curlew Sandpiper were recorded on 2022 at Clinton Conservation Park, Dry Creek Saltfields, Port Prime and Price Saltfields. The 1% threshold for international significance of the critically endangered Curlew Sandpiper is 900. Count data for 2023 showed 831 individuals which is approaching the threshold of international significance and similar figures to those seen in 2017.

Although it is encouraging to see good maximum counts in summer, the December and March counts were below the aforementioned average, and only two were seen during the winter count (NB overwintering birds are likely to be immature and the low number observed could be because of a number of factors including poor breeding success in the Arctic). Despite the positive population trend for this species, fluctuating and occasionally poor count numbers warrant continued vigilance regarding this species population (Lees & Bartley 2022).


Curlew Sandpiper 2019-2023
Maximum summer population count
900
800
700
600
500
400
300
200
100
0
2019
2020
2021
2022
2023
Year

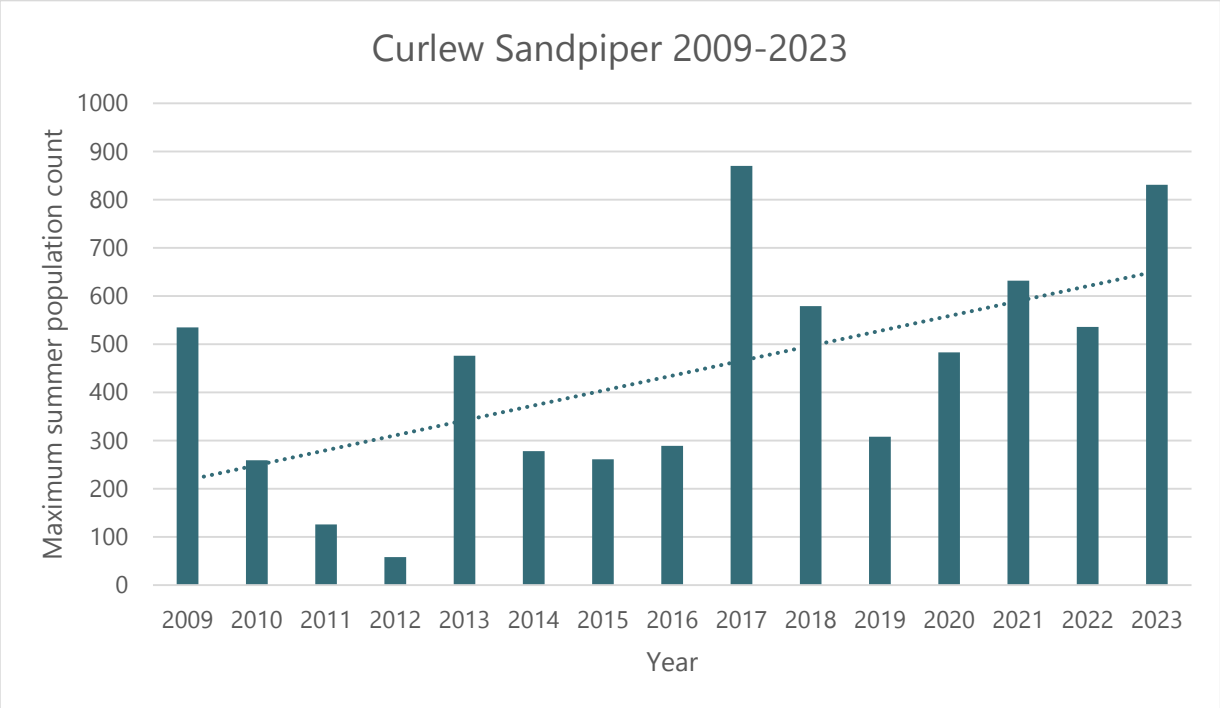
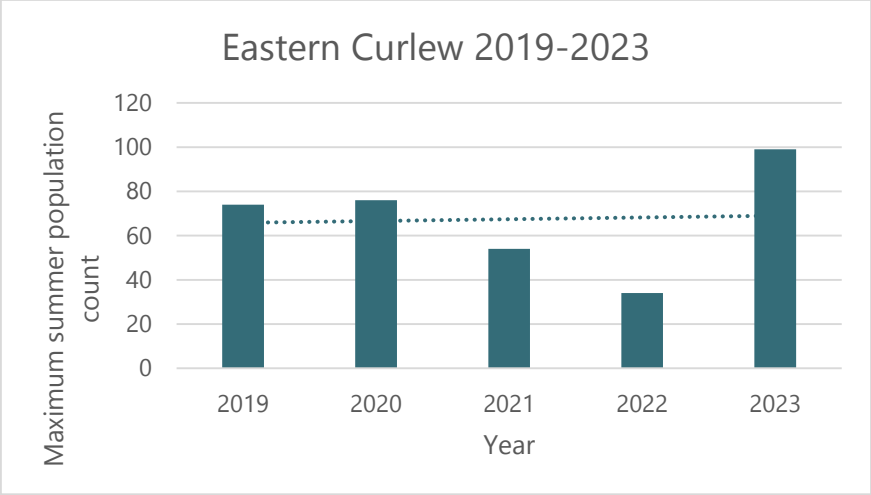

Curlew Sandpiper 2009-2023
Maximum summer population count
1000
900
800
700
600
500
400
300
200
100
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Year

Figure 32: Curlew Sandpiper (Credit: Martin Stokes).

5. Eastern Curlew (*Numenius madagascariensis*)

The population trend for the critically endangered Eastern Curlew remains stable. Nationally significant numbers (35+) of Eastern Curlew occur within the Gulf St Vincent, with seasonal counts of up over 60 individuals, and regularly small numbers (0-7) overwintering from 2018 to 2021-22. Most recent counts in 2023 recorded 99 individuals.



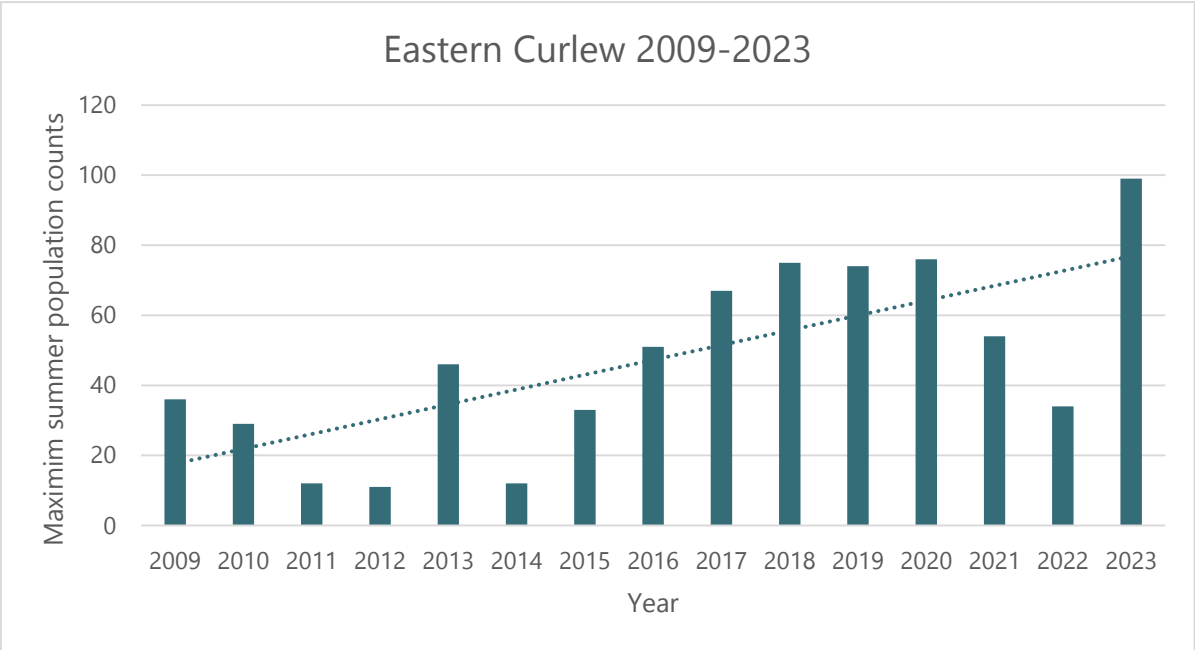


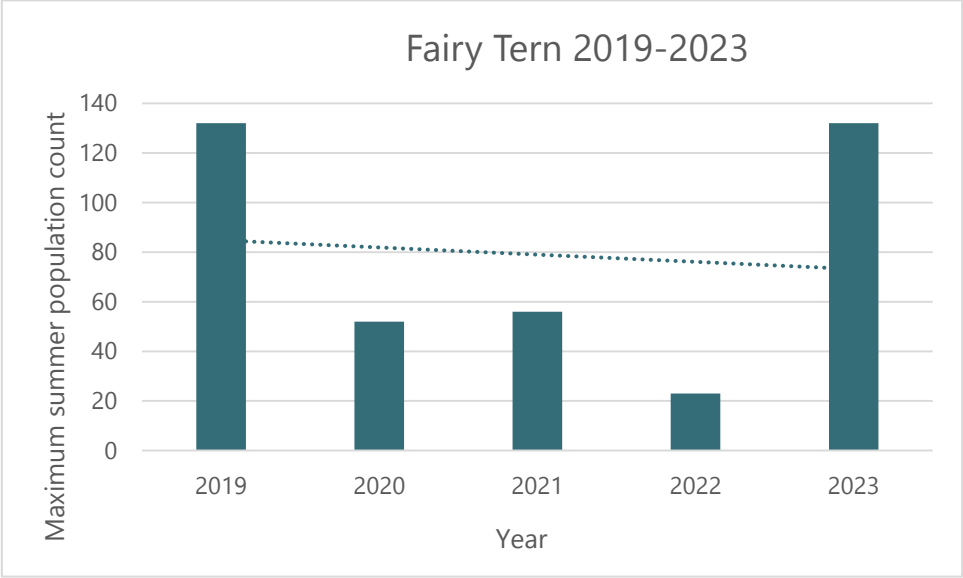
Figure 33: Eastern Curlew (Credit: Martin Stokes).

6. Fairy Tern (*Sternula nereis*)

Longer term trend data demonstrates a declining population for Fairy Terns in Gulf St Vincent. High variability in the data has influenced the population trend line, however the declining trend remains. A substantial increase in adults in 2023 is positive and well above the baseline population at the beginning of the project. The deployment of Felixer grooming traps in 2020 resulted in the control of at least one fox from within the breeding colony.

High levels of Silver Gull nesting at the monitoring site (Bird Island) and their observed predation of Fairy Tern eggs and chicks is likely to have had a negative effect on breeding attempts. In the three

breeding seasons from 2020 - 2023 all successful Fairy Tern chicks have hatched late in the season (March), and this timing also appears to correlate with when there is a vast reduction in Silver Gull numbers on Bird Island. While there could be other factors at play, including easing weather and tidal conditions late in the season and possibly less resource competition from other nesting birds on the island, it seems likely that Silver Gull depredation is a major factor that shapes success of Fairy Terns on Bird Island. Fairy Tern nests were observed in December 2021, and it took until the sixth breeding attempt in March 2022 (colony F) for four chicks to finally emerge (Bartley & Stephens 2022).



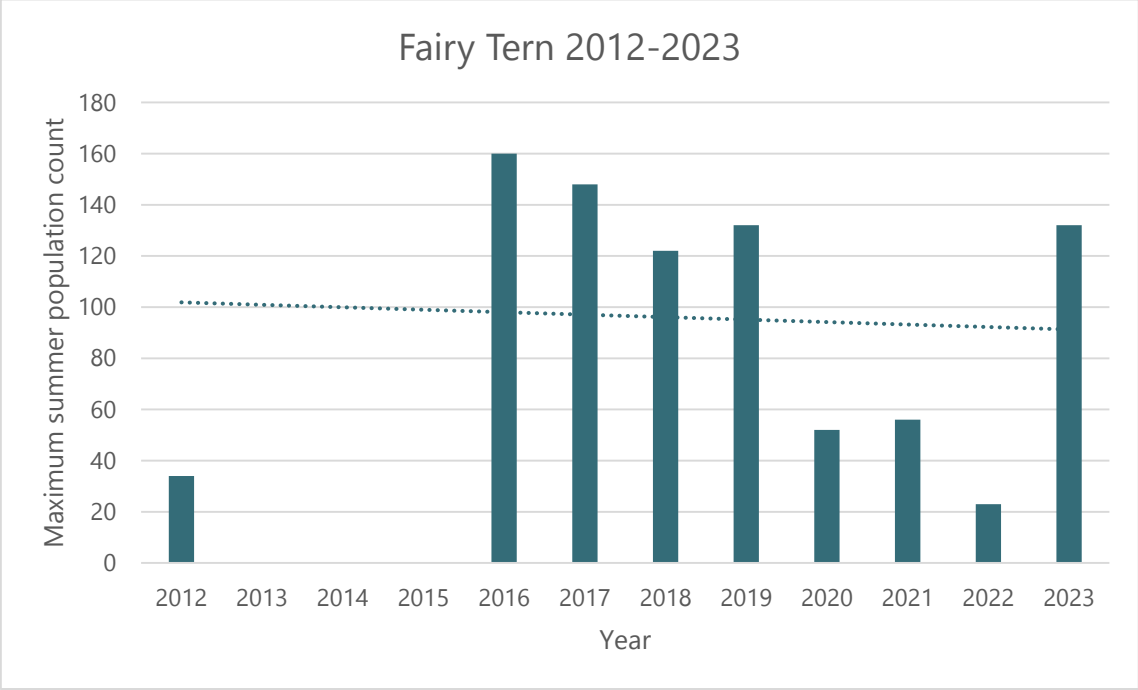
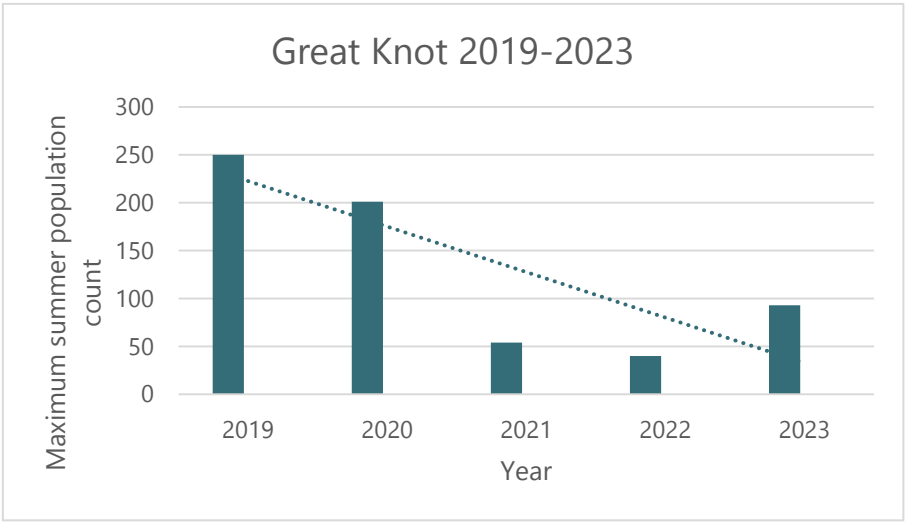


Figure 34: Fairy Tern (Credit: Martin Stokes).

7. Great Knot (*Calidris tenuirostris*)

There is an overall declining population trend for Great Knot. Numbers recorded in 2023 showed a moderate increase from the 2022 survey, to 93 individuals. The project reporting trend (five years) is the same as the longer term data set (15 years) representing a decline in abundance for the Great Knot (more detail provided in summary section below).



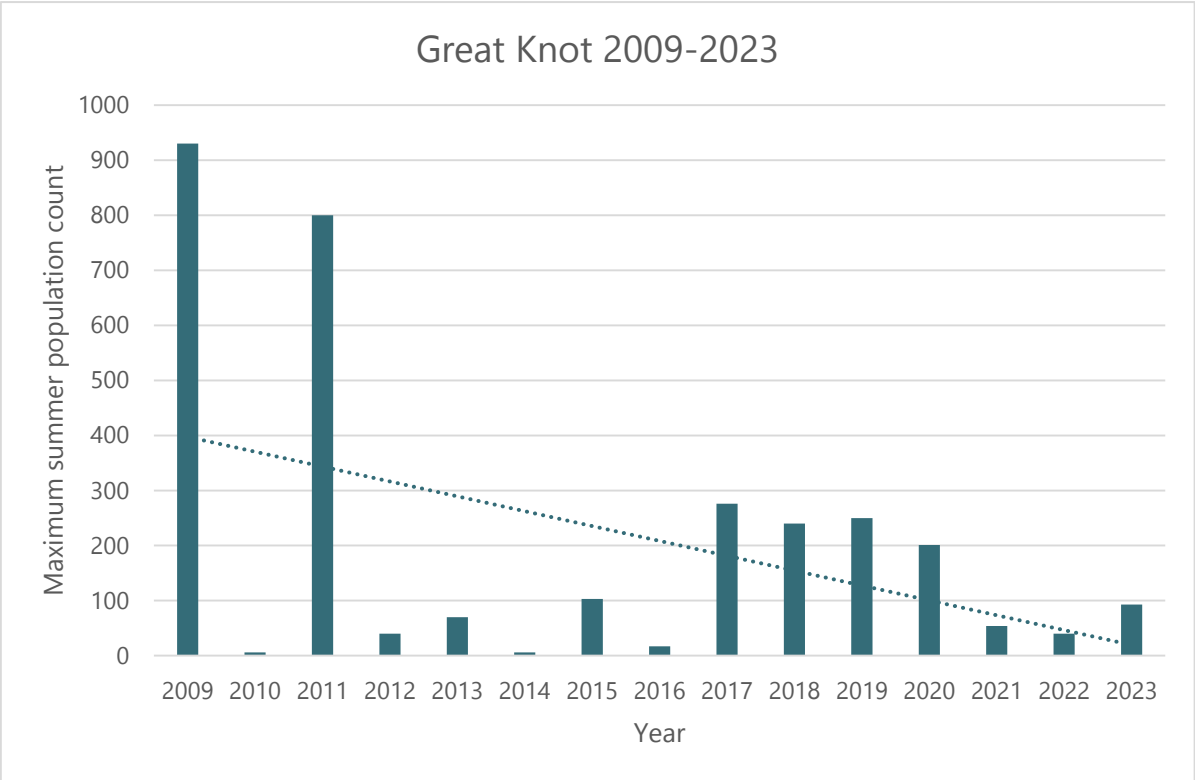
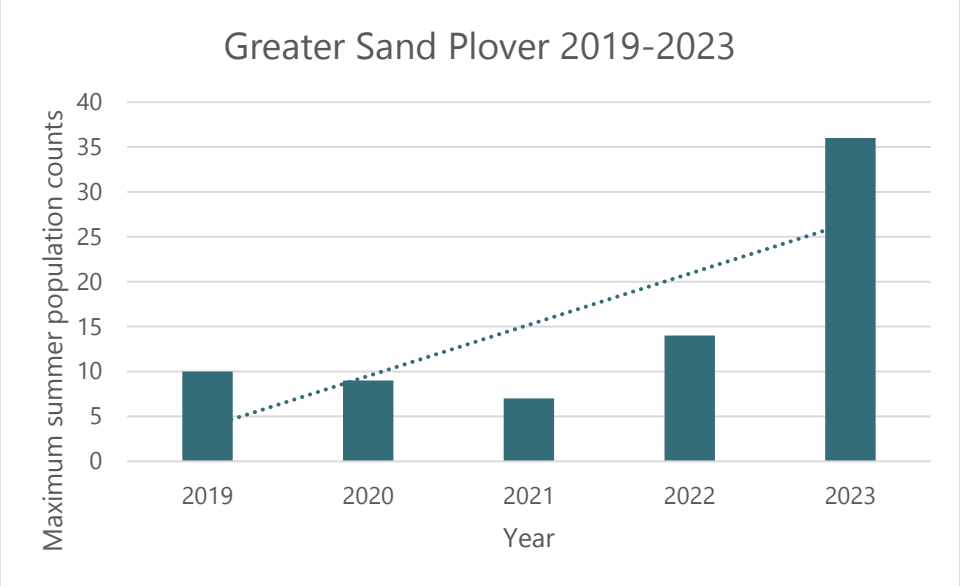


Figure 35: Great Knot.

8. Greater Sand Plover (*Charadrius leschenaultii*)

The Greater Sand Plover is recorded in the region in very low numbers but currently shows a stable to increasing population. A large increase in the number recorded in 2023 of 36 individuals, whilst positive, greatly increases the trend line and should be treated with caution when looking at such low population numbers. Whilst approaching the baseline figure it still remains well below the baseline of 50 individuals.


Greater Sand Plover 2019-2023
Maximum summer population counts
40
35
30
25
20
15
10
5
0
2019
2020
2021
2022
2023
Year

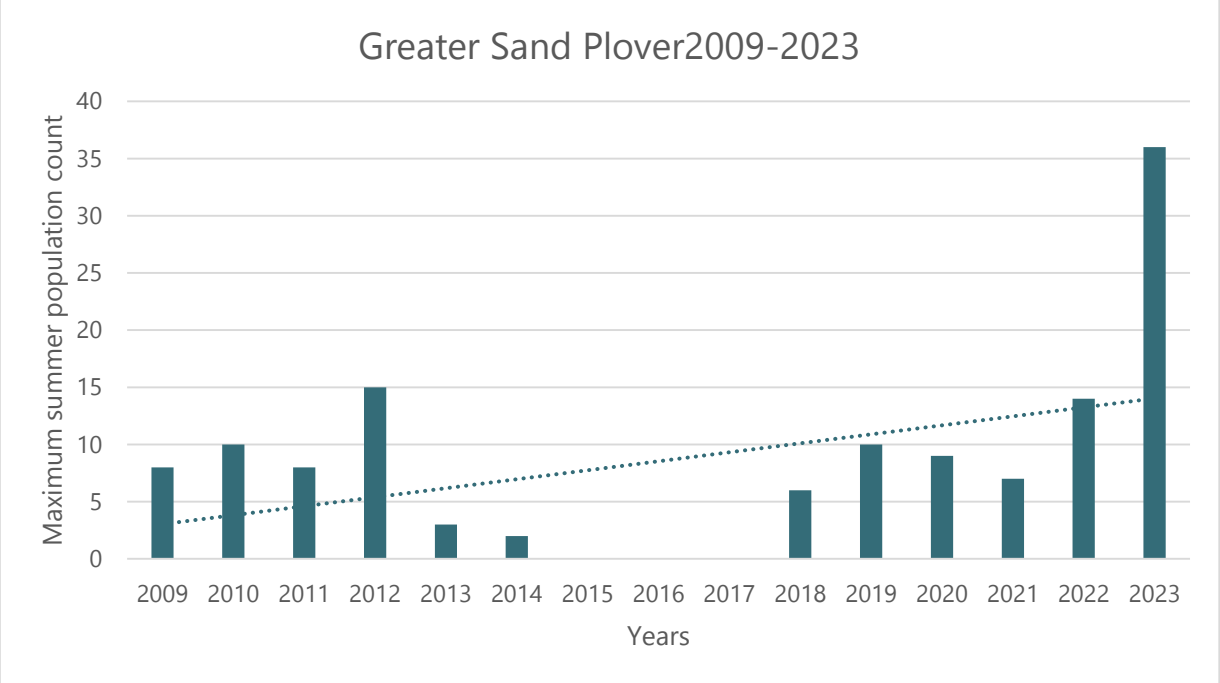

Greater Sand Plover2009-2023
Maximum summer population count
40
35
30
25
20
15
10
5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Years

Figure 36: Greater Sand Plover.

9. Grey-headed Flying-fox (*Pteropus poliocephalus*)

In 2023 the Grey-headed Flying-fox count in Adelaide was 32,453. The colony has reached carrying capacity for the location over the past few years and now appears to fluctuate seasonally with the availability of food resources, as is typical for most large flying fox camps throughout their range.

Importantly, the Adelaide camp remains significant in size throughout the year and, with La Nina conditions experienced over the last few years, it has seen relatively successful breeding outcomes whereby large numbers of young have contributed to the national population. Heat stress remains one of the greatest risks to the colony in Adelaide, with high summer temperatures (that are experienced in normal or El Nino summer conditions) putting most juveniles at high risk of mortality.

Various studies are currently underway by the University of Western Sydney to refine the technique for counting the number of bats in the camp. This includes the use of thermal imagery and weather radar. The overall conservation and management of the camp continues to be driven through the South Australian Grey-headed Flying-fox working group, to maximise collaboration opportunities, share information and improve the conservation and management of the colony wherever possible.

Figure 37: Grey-headed Flying-fox heat stress monitoring.

10. Hooded Plover (*Thinornis rubricollis*)

Population data for Hooded Plovers is taken from the biennial survey of the Fleurieu Peninsula and metropolitan Adelaide coast population. There has been a small increase in the overall number of individuals within the population over the project, from 53 to 64. While this is a very positive result, there hasn't been enough of a change to confidently indicate an increasing trend, considering the low numbers, and this is a relatively long lived species.

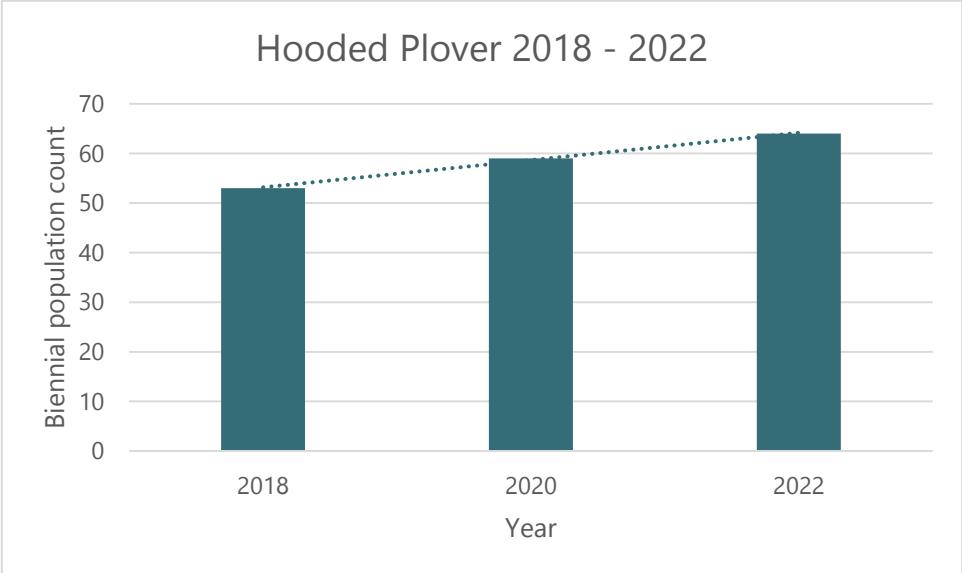


Figure 38: Hooded Plover (Credit: Martin Stokes).

Figure 39: Fenced Hooded Plover nests at Victor Harbor.

11. Kangaroo Island (KI) Glossy Black Cockatoo (*Calyptorhynchus lathami halmaturinus*)

There was a small number of confirmed sightings in late July 2022 of a KI Glossy Black Cockatoo on the mainland. The sightings were a single male bird in the Deep Creek area of the southern Fleurieu Peninsula. At this stage this is suspected to be a lone male, or at most a handful of individuals. The male that has been sighted is likely to have come from the flock that lives on the eastern end of Kangaroo Island, based on discussions with KI Glossy Black Cockatoo Recovery Program coordinator. There have been no other sightings since this time.

The eastern Kangaroo Island flock has a large male-bias and if the population continues to grow in size, we may see more males visit the mainland in search of a mate. Single males can travel long distances.

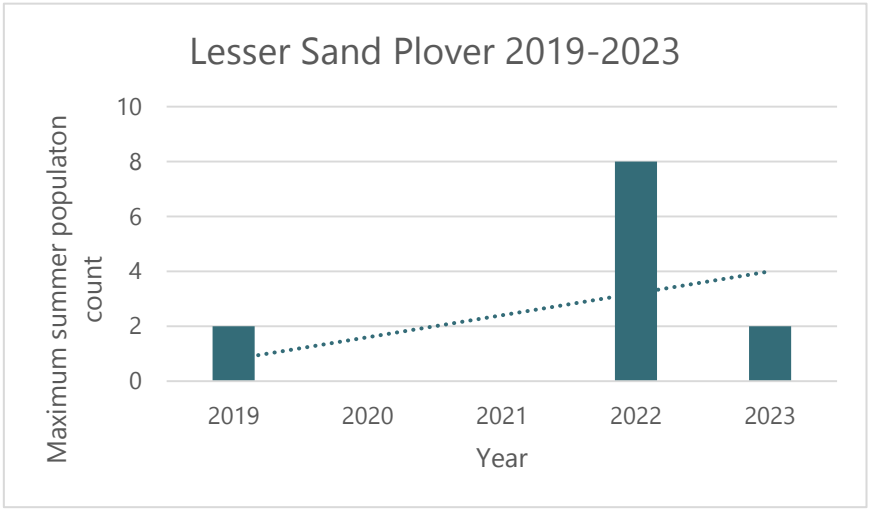
On Kangaroo Island, planted Drooping Sheoak patches that are 10-15km (a similar distance from KI to the mainland) from the nearest other feeding habitat, are usually only discovered by one or two individuals. Observations of banded birds have shown these individuals have then returned up to 12 months later with the rest of their flock (anywhere from 6-20 birds). It is a positive sign that there is now a KI Glossy Black Cockatoo with knowledge of habitat on the mainland, and we may see additional visits in the future.

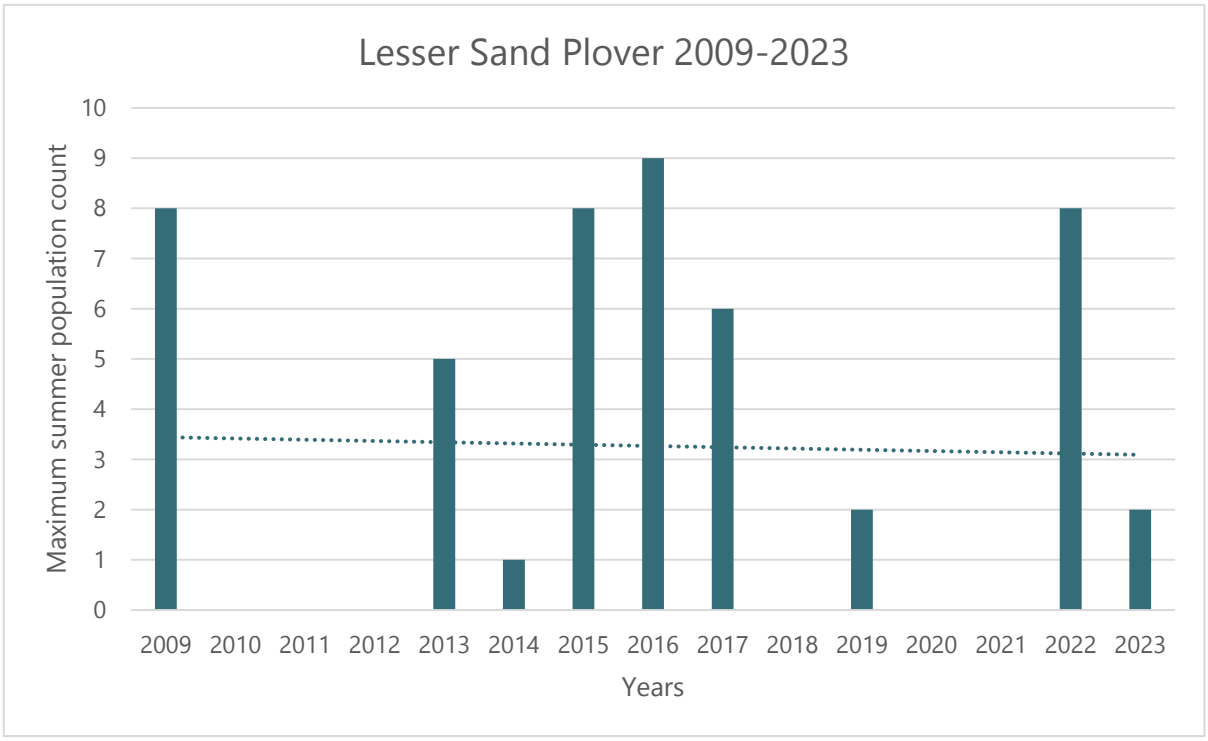
Figure 40: KI Glossy Black Cockatoo.

12. Lesser Sand Plover (*Charadrius mongolus*)

With very low population numbers (less than ten) it is difficult to confidently report this species population trend. However, both the data suggests the numbers may be considered stable despite being only a few individuals.

Figure 41: Lesser Sand Plover (Credit: David Newell).





13. Mt Lofty Ranges (MLR) Chestnut-rumped Heathwren (*Hylacola pyrrhopygia parkeri*)

In 2019-2020, we established a new systematic occupancy-based monitoring program to provide an up to date assessment of the species status across their whole range, against which to compare in future, whilst also assessing the status of the habitat in the region for further restoration opportunities. 245 sites were surveyed in the breeding season (August to February) of 2019/20 with three repeat visits.

The MLR Chestnut-rumped Heathwren had a baseline occupancy of 32%. The species appears to have disappeared from much of the Deep Creek/Balquhidder landscape (only one opportune record from 2018), Hindmarsh Tiers and Stirling areas. On the other hand, birds were detected at more locations across a larger extent in the current data in the Mount Bold/Scott Creek complex and at Myponga, when compared to the historical sightings data.

This survey provides a baseline and can be repeated in the future to detect change over time.

Figure 42: MLR Chestnut-rumped Heathwren (Credit: Tom Oliver).

14. Mt Lofty Ranges (MLR) Southern Emu-wren (*Stipiturus malachurus intermedius*)

In 2019-2020, we established a new systematic occupancy-based monitoring program to provide an up to date assessment of the species status across their whole range against which to compare in future. 245 sites were surveyed in the breeding season (August to February) of 2019/20 with two repeat visits.

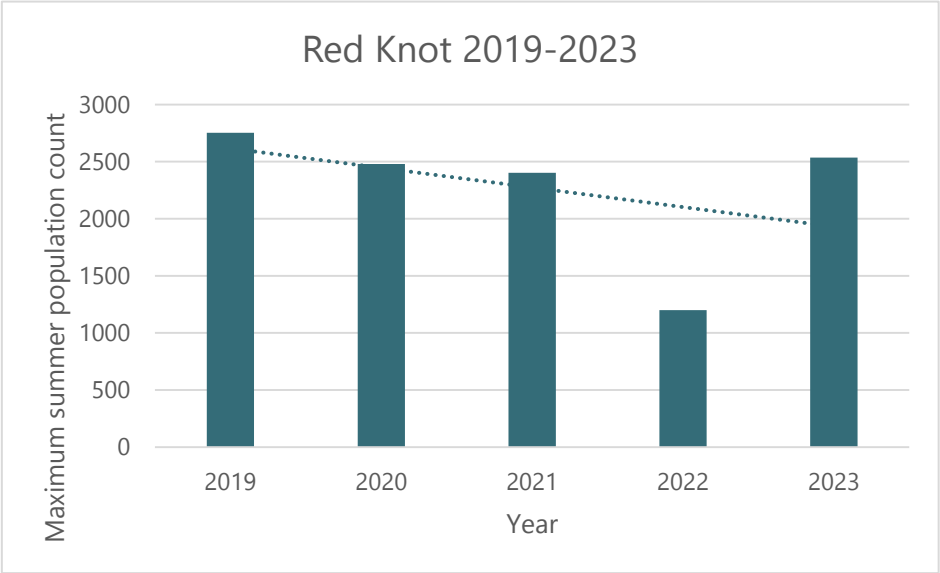
The MLR Southern Emu-wren had a baseline occupancy of 21%. The species appears to now only be found at four main locations: Deep Creek, the lower Finniss River/Tookayerta Creek, three swamps around Mount Compass (Stipiturus CP, Hesperilla CP and the Mount Compass School swamp), and at Cox Scrub. Several new locations compared to the historical data were found along the lower Finniss, which now has the largest number of current records for any of the main locations.

This survey forms a baseline and can be repeated in the future to detect change over time.

Figure 43: MLR Southern Emu-wren (Credit: Martin Stokes).

15. Red Knot (*Calidris canutus*)

The Red Knot population appears to still be relatively stable, with a single sharp departure from the average in 2022. The long term data for this species also suggests that population may be more stable. Gulf St Vincent supports internationally significant numbers for this species (more detail provided in summary section below).



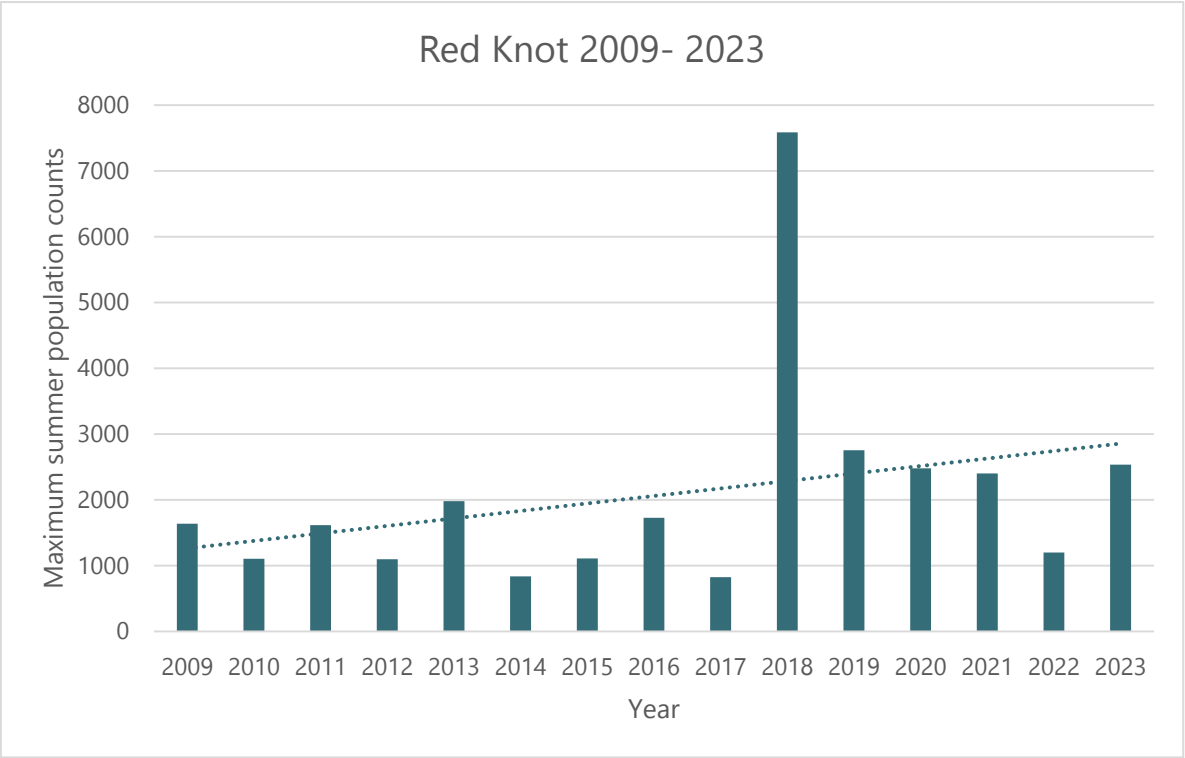


Figure 44: Red Knot (Credit: Martin Stokes).

16. Slender-billed Thornbill (Gulf St Vincent) (*Acanthiza iredalei rosinae*)

Range-wide baseline monitoring surveys were undertaken in August to December of 2020 to coincide with the documented breeding season of the subspecies from July to December.

Slender-billed Thornbill were detected at 42 of 101 sites (41.6%) and in 76 out of 202 survey visits (37.6%). Adding opportunistic data using 1 km^2 grid cells with ≥ two visits from the same 2020

breeding season increased site records for the target species by 11 (26%) and visit records by 23 (30%). Combining data from other projects across the three breeding seasons from 2018-2020 added another three Samphire Thornbill site records (5%) and 15 visits (15%).

Estimates from occupancy models accounting for imperfect detection from each of the three analysed datasets were all similar, varying from 45 – 49 % of sites surveyed. This survey can be repeated in the future to detect change over time.

Figure 45: Slender-billed Thornbill (Credit: Sam Gordon).

17. Southern Brown Bandicoot (SA mainland & KI ssp) (*Isoodon obesulus obesulus*)

Populations continue to be severely fragmented. An examination of sightings data over the last five years doesn't show a major decline in occupancy, despite previously known declines in the north of the species' range. There is a continued lack of sightings in the north of their former distribution, indicating the species may no longer occur north of Black Hill Conservation Park. Additionally, sightings data indicates a decline in occupancy in the east of their range near Cox Scrub Conservation Park and Kyeema Conservation Park. However, a road killed individual was reported (and confirmed) in Ashbourne recently (data yet to be added to Biological Databases of South Australia (BDBSA) – as of July 2023), indicating a population still occurs in the eastern edge of their range. The Central Hills area of the Mount Lofty Ranges continues to have high occupancy.

A region-wide occupancy-based monitoring program is needed to determine if the Mount Lofty Ranges Southern Brown Bandicoot population is declining, maintaining or increasing in area of occupancy.

Figure 46: Southern Brown Bandicoot captured using trail cameras (2023).

Summary of shorebird populations in Gulf St Vincent [Bar-tailed Godwit (ssp baueri), Curlew Sandpiper, Eastern Curlew, Great Knot, Greater Sand Plover, Lesser Sand Plover & Red Knot]

Gulf St Vincent is a nationally and internationally significant area for shorebirds, hosting approximately 29,000 individuals of resident and migratory species. Shorebird populations throughout the world are declining (Morrison et al. 2001; Olsen et al. 2003), and a growing body of evidence describing population declines illustrates Australia as no exception (Clemens et al. 2016; Gosbell & Clemens 2006; Nebel et al. 2008). Cumulative effects of threats throughout the East Asia-Australian (EAA) Flyway are driving declines in migratory shorebirds in the region (Lees & Bartley 2022). The annual coordinated shorebird monitoring program for upper Gulf St Vincent undertook four simultaneous counts of shorebirds across an average of 15 sites. Individual species population trend data reported here, provide a snapshot of the five years of the project. Annual population counts for migratory shorebirds have been undertaken across these sites since summer 2008/09 providing a longer and more reliable population trend for each species. Population trend data is based on the maximum summer counts recorded for each species.

Additional note of caution: The count results and trends reported across time should be interpreted with care, while stable (or increasing) population trends are encouraging they cannot be used as justification to become complacent in monitoring, enforcement, habitat restoration or protection. Similarly, unstable or extremely variable population trends of species that may be more nomadic / irruptive may be artefacts of their utilisation of inland freshwater and wetland habitats, alteration of migratory routes or detectability with variable capacity of survey effort.

Threatened Ecological Communities

1. Subtropical and Temperate Coastal Saltmarsh

The geographical extent of this ecological community was increased as part of this project by direct seeding and planting of tube stock across multiple sites. Further protection of these areas through fencing and the establishment of the Adelaide International Bird Sanctuary National Park (change in land tenure) provides a higher level of protection for these areas than previously existing conditions. Ongoing weed control and maintenance of fencing has continued by the project partners and land managers for these sites.

Figure 47: Saltmarsh near Middle Beach (Credit: Bill Doyle).

2. Swamps of the Fleurieu Peninsula

Hydrological restoration work was undertaken in two Fleurieu Peninsula Swamps: Hesperilla Conservation Park; and Glenshera Swamp (which occurs across Stipiturus Conservation Park and adjoining private land). The works were undertaken in partnership with Nature Glenelg Trust, The Friends of Stipiturus and Hesperilla Conservation Parks and the National Parks and Wildlife Service. The works redirected surface flows into the swamps and slowed outflows. Backfilling of drains, historically dug by famers to drain the swamp, has seen a dramatic increase in rehydration of the swamp margins and overall water retention and peat rehydration. Glenshera Swamp is the largest example of the Swamps of the Fleurieu Peninsula ecological community. Restoration will help retain sufficient water, particularly through low rainfall summer months, to ensure the swamp vegetation has improved prospects for coping with prolonged drought periods and extended high summer temperatures.

This component of the project was site specific and no data was collected on other swamps across the Fleurieu Peninsula. We have baseline data for these restoration sites, derived from water level loggers in both the inflow watercourse, outflow drains and across the swamp. This captures

groundwater movement and recharge information, as well as helping to quantify any changes in peat saturation that resulted from the decommissioning of drains.

Figure 48: Prescribed burns and plantings are conservation actions that have been undertaken at Stipiturus Conservation Park (2022).

Conclusion

The report summarises the changes in rates of decline and population trends of 20 threatened plants, 17 threatened animals and two threatened ecological communities in the Mount Lofty Ranges and Fleurieu Peninsula as part of the Back from the Brink project. We are committed to undertaking threatened species recovery work in our region, as outlined in our Landscape Plan 2012-2016, and will continue to invest in conservation interventions and strategies for priority species.

Updates on our nature projects can be found here: https://www.landscape.sa.gov.au/hf/our-priorities/nature

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