



PHILLIP ISLAND (MILLOWL) AN ISLAND HAVEN FOR THREATENED SPECIES

Phillip Island
**NATURE
PARKS**

ANNUAL UPDATE 2023

penguins.org.au

We acknowledge the Traditional Owners of the land on which we live, work and learn, the Bunurong people and pay our respects to Elders past, present and emerging. We recognise their role in caring for Country over thousands of years and acknowledge the true history and their continued connection to place as we work and walk together.



Partnering for our Island Haven

STRENGTHENING OUR THREATENED SPECIES PROGRAMS

Our role at Phillip Island Nature Parks is to research, monitor and implement strategies that will allow species at risk to recover. In the past year, the Conservation and Community Impact teams have continued to build on our previous successes and strengthen the threatened species programs for our island haven. Combining our expertise with that of our partners allows us to monitor and better understand the behaviour of species requiring our assistance so we can take decisive steps toward their recovery.

Empowering our community has been one of our major celebrations in 2023, where the significant role of people is ensuring they have stewardship over our threatened species programs. Our unique island environment deepens the emotional bond between our community and threatened species program. Launched in 2022, the 'Sharing our Shores' campaign, harnesses the community to ensure we can all enjoy the coastline's natural beauty and support our work to safeguard our nesting shorebirds. Our passionate volunteers and students play a pivotal role, investing many hours in our programs. Partnering with our community in various forms has been instrumental to our success and we could not have done this without them.

In the spirit of collaboration, it is with great pleasure that I announce the signing of a Memorandum of Understanding in June 2023 between

the Nature Parks and Odonata for the recovery of the bush stone-curlew within south-eastern Victoria. The agreement sets out the framework and significant focus areas, including the recovery plan for the bush stone-curlew, co-management of wildlife populations and potential co-management of new sites within south-eastern Australia.

Foxes and feral cats are a major threat to Australian ecosystems, biodiversity and threatened species. After 25 years of dedicated efforts, Phillip Island (Millowl) was declared fox-free in 2017. Our community called through numerous fox sightings during 2023 and with our number one fox-detection dogs surveilling the island, there was no evidence of fox incursions. However, feral cats remain, and we continue to focus our efforts towards eradicating them from Phillip Island (Millowl) using all the available tools within Victoria.

We are thrilled to see the local cat curfew laws come into effect on 1 July 2023, where the Bass Coast residents must now contain their pet cats daily. Supporting the Bass Coast Shire Council in this milestone decision, our research found that uncontained domestic cats spend up to six hours a day away from home, with some travelling 700 metres to explore. Eradicating feral cats on Phillip Island (Millowl) is possible only if domestic and stray cats do not contribute to the feral cat population. Encouraging and enforcing responsible domestic cat ownership is critical to this goal.

Between March and December 2023, our feral-cat-detection dogs Milly and Marbee have been deployed to monitor critical habitat on the island. Surveys have detected 21 cat scats resulting in the removal of seven feral cats from areas including Summerland Peninsula, Observation Point, Cape Woolamai and Oswin Roberts Reserve.



Image 1: Jessica McKelson, General Manager Conservation, with the conservation dogs Milly and Marbee.

The Penguin Foundation, Department of Environment, Energy and Climate Action and Bunurong Land Council Aboriginal Corporation continue to be key supporters to our threatened species programs, and we acknowledge their ongoing commitment to this shared vision. We thank all our supporters who contribute and enable success in our future commitments.

JESSICA MCKELSON
General Manager Conservation
Phillip Island Nature Parks

Returning the Bush Stone-Curlew

FORGING A FUTURE TOGETHER

The bush stone-curlew (*Buhrinus grallarius*) is listed as Critically Endangered in Victoria. Combined records and local knowledge recall its farmland presence on Phillip Island (Millowl) in the 1970s, however this species is Extinct on Phillip Island (Millowl) primarily due to predation from foxes. We are excited to partner with Odonata under the Southeast Australian Sanctuary Operations Network (SEASON) banner to return this threatened bird back to our island haven within the near future.

The bush stone-curlew is a flagship species for reintroductions in a network of sanctuaries being developed by Odonata under the banner of **SEASON**. The coordinated network aims to re-establish threatened species across the broader landscape by creating a series of refuge sites, or nodes, from which populations can expand. Phillip Island (Millowl) is now proposed as one node of the network, albeit a large and significant island node rather than a fenced reserve, it has great potential as a location for the collaboration to conduct science which aims to advance translocations of the species.

PARTNERS



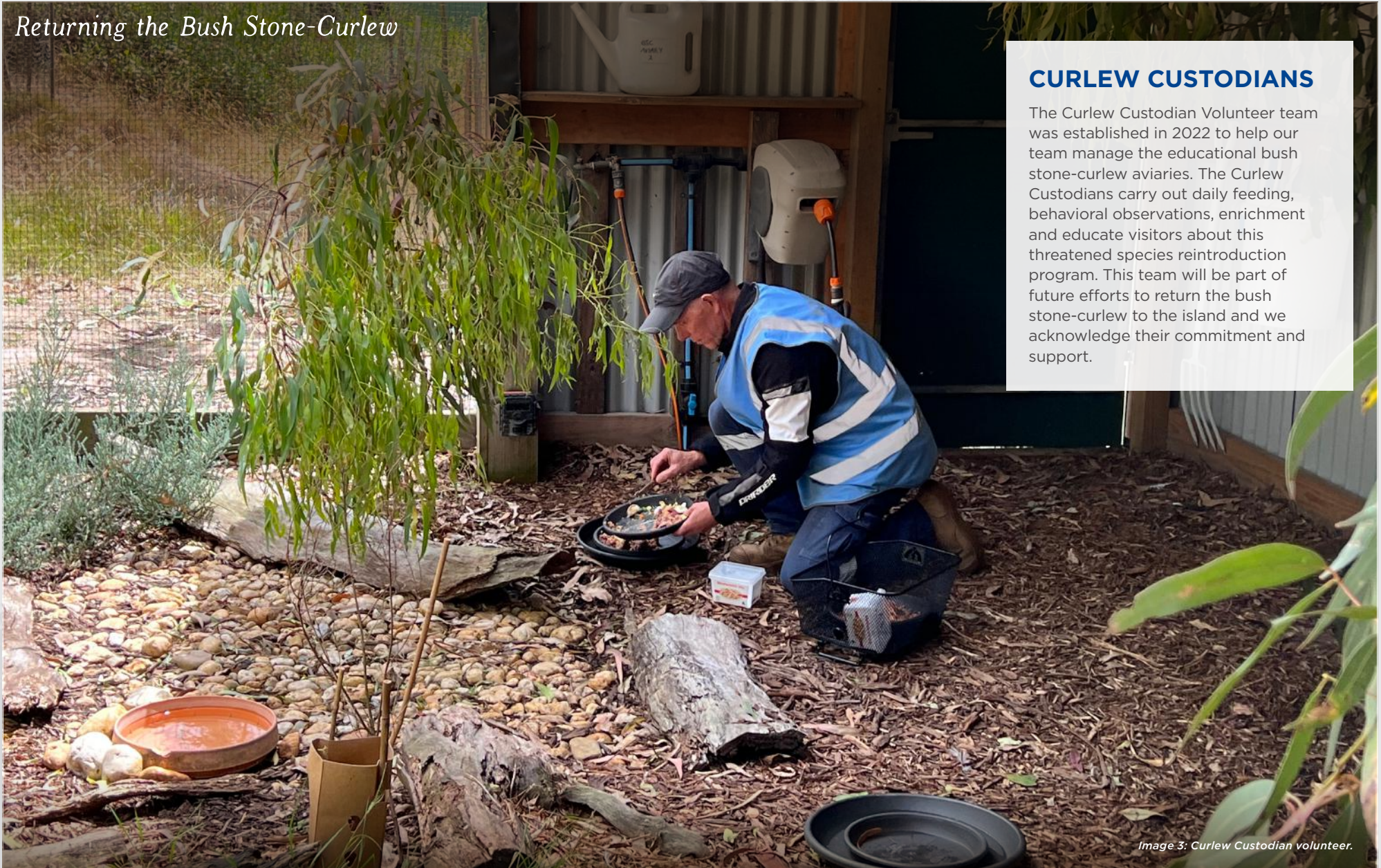
ODONATA
FOUNDATION

Penguin Foundation



Image 2: Bush stone-curlew.

Returning the Bush Stone-Curlew



CURLEW CUSTODIANS

The Curlew Custodian Volunteer team was established in 2022 to help our team manage the educational bush stone-curlew aviaries. The Curlew Custodians carry out daily feeding, behavioral observations, enrichment and educate visitors about this threatened species reintroduction program. This team will be part of future efforts to return the bush stone-curlew to the island and we acknowledge their commitment and support.

Image 3: Curlew Custodian volunteer.

Eastern Barred Bandicoots

ESTABLISHING A STRONGHOLD POPULATION

Phillip Island (Mallowl) provides an important haven for the Eastern barred bandicoot. From their initial release to Phillip Island (Mallowl) in 2017, bandicoots have continued spreading across the island with an estimated population of 9,000-18,000 individuals.

The current research focus is genetic rescue, aiming to increase genetic diversity in all populations through gene mixing with Tasmanian Eastern barred bandicoots. Research into the success of introducing individual Eastern barred bandicoots into an established population has revealed there are still challenges to managing this species as a metapopulation, where the idea is to maximise genetic diversity by moving individuals between populations. Further research is being undertaken to determine effective methods to integrate new individuals, and genes, into established populations.

Ongoing population monitoring in spring 2023 saw Eastern barred bandicoot trapping undertaken at Churchill Island and Fishers Wetland in September and the Summerland Peninsula in October.

Across three nights at Churchill Island, 85 captures of 58 individuals were recorded. At Summerland Peninsula, 24 captures of 20 individuals were recorded over three nights, 12 of which were seen for the first time. This year at Summerland Peninsula, Eastern barred bandicoots appeared less inclined to enter traps, however there still appeared to be plenty of healthy animals in the area. All the bandicoots trapped were found to be in good health and breeding across all sites with females carrying pouch young of various ages.

The Volunteer team plays an essential part of the Eastern barred bandicoot program. An impressive 484 hours over six days of trap setting, research assisting, and bandicoot handling were recorded.



Image 4: Volunteers trapping Eastern barred bandicoot on the Summerland Peninsula.



Image 5: Volunteers trapping Eastern barred bandicoot on Churchill Island.

PARTNER

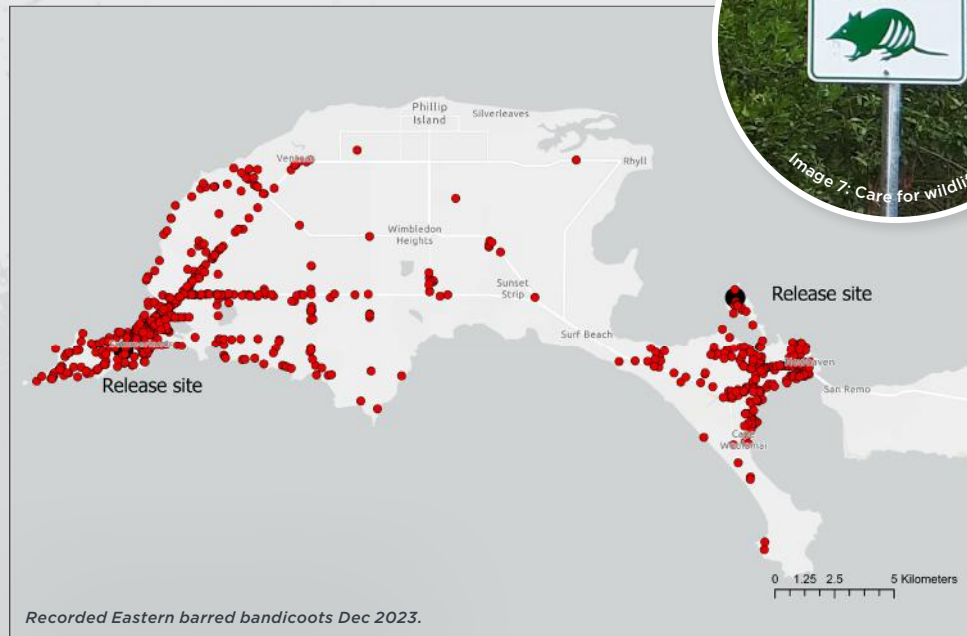


Image 6: An Eastern barred bandicoot being released after its check.

Eastern Barred Bandicoot

COMMUNITY IMPACT

Our citizen science 'EBB Sightings Portal' provides a platform for our community to report wild bandicoot sightings and help us understand the spread across the island. Using the sightings recorded, the Nature Parks collaborated with Wildlife Victoria, Bass Coast Shire Council and Regional Roads Victoria to identify bandicoot hotspots. New 'Care for Wildlife' signage has been installed to highlight the presence of this species in the area and to reduce any human-wildlife conflict incidents when driving in these hotspots. An educational infographic has been developed and distributed to local businesses and visitors to educate public about the species now that Eastern barred bandicoots are being seen in backyards and suburban areas.



EASTERN BARRED BANDICOOTS ARE ECOSYSTEM ENGINEERS

Each bandicoot **dig**s around **500 little pits a night** (about 13kg of soil)

Their digging and foraging **improves soil health** by:

- Reducing soil compaction
- Improving water permeability
- Increasing organic matter
- Spreading native fungi by dispersing fungal spores in their scats

FUN FACT: Each individual bandicoot digs the equivalent of the weight of an elephant worth of soil each year!

Spot an EBB? Help us understand where the EBBs are living on Phillip Island. **SCAN TO REPORT**

Improved soil health supports healthy plant growth. Native plants provide shelter and food for other native animals. Crops are more productive providing food for sheep and cattle. This all helps to maintain healthy ecosystems.

WATCH OUT EBBs might be on the road!

They sleep in nests during the day

Using strong claws and a pointed nose, they dig small cone shaped depressions

Foraging at night, they eat fungi and insects like grubs, beetles grasshoppers, and moths

They have distinctive stripes and are similar in size to a guinea pig

Locations: Summerlands, Ventnor, Cowes, Rhyl, Newhaven, Cape Woolamai, San Remo, Woolamai, Surf Beach, Sunset Strip, Wimbledon Heights, Phillip Island, Silverleaves, Rhyll.

Eastern barred bandicoot infographic.

Safe Haven for Fairy Terns

UNITED TO DELIVER LONG-LASTING OUTCOMES

Fairy terns are listed as Vulnerable in Australia (*Environment Protection and Biodiversity Conservation Act 1999*) and Critically Endangered in Victoria (*Flora and Fauna Guarantee Act 1988*). The Nature Parks staff and volunteers are working to create safe, secure breeding sites to give fairy terns (*Sternula nereis*) the best chance of heralding new chicks to ensure the longevity of this critically endangered species.

“The Fairy Tern Project” is one example of how we are working with the Nature Parks to care for Country and building the skills, knowledge and experience of our team in land management practices such as fauna monitoring, weed removal and revegetation.’

SHANI BLYTH

Land, Water and Environment Manager
Bunurong Land Council Aboriginal Corporation

In collaboration with the Bunurong Land Council Aboriginal Corporation, we are conducting bird surveys, implementing weed control measures, and creating optimal breeding environments. Additionally, native revegetation efforts are underway, complemented by the use of surveillance cameras to monitor the species and enhance our responsiveness to potential threats to wildlife.

The partnership with the Phillip Island Nature Parks is very important to the Bunurong Land Council Aboriginal Corporation as it aligns with our shared commitment to nurturing the Bunurong community through conservation initiatives.

The Bunurong Land Council Aboriginal Corporation has the Tarbuk Biik team to facilitate Healing Country works. Caring for Country and forging stronger connections to the land are paramount for the Bunurong Land Council Aboriginal Corporation. The Nature Parks plays a significant part by offering training and valuable experience to the Tarbuk Biik team. This knowledge can be used not only on Phillip Island (Millowli) but across Bunurong country.

Image 8: Fairy tern, chick and egg.

Safe Haven for Fairy Terns

Over the past year, two feral cats have been removed from Observation Point. Despite low numbers, this informs the Conservation team that feral cat management pressure is starting to pay off. Invasive weeds such as marram grass have been removed from 87 hectares and replaced with 620 indigenous plants like hairy spinifex, to help restore Observation Point as a suitable breeding habitat for fairy terns.

During November 2023, up to 20 fairy terns were observed returning to the breeding site with observations of aerial displays, feeding and roosting behaviour. At least three pairs of fairy terns established nests, unfortunately these were destroyed by high tides in December 2023.



Image 9: Member of the Tarbuk Bilk team sets a feral cat trap.



Image 11: The Nature Parks and Tarbuk Bilk team monitoring fairy terns.

Our new 4G-enabled cameras equipped with artificial intelligence technology have been set up at Observation Point to detect feral cats. This innovation provides real-time alerts to our conservation staff, enabling swift responses. With the aid of conservation dogs and targeted cat trapping efforts, we can effectively address this significant threat to fairy terns.



Image 10: Photo taken of a feral cat by one of our 4G-enabled cameras.

PARTNERS



Energy, Environment and Climate Action



COLLABORATORS



Focus on Hooded Plovers

TINY AND MIGHTY

Hooded plovers (*Thinornis cucullatus cucullatus*) are the focus of this report recognised as one of the priority species listed in the Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2022, *Threatened Species Strategy Action Plan 2022-2032*. They are categorised as Threatened in Australia (*Environment Protection and Biodiversity Conservation Act 1999*) and Vulnerable in Victoria (*Flora and Fauna Guarantee Act 1988*).

Since active management of the hooded plover population on Phillip Island (Mallowl) began in 1998, embodied as the 'Hooded Plover Watch Program', the population has increased from around 20 individuals to a stable plateau of 44 between 2010 and 2019.

The 2022-23 hooded plover breeding season resulted in 14 pairs successfully raising eight fledglings at a fledge rate of 0.57 per pair, exceeding the BirdLife Australia Benchmark of 0.47.

Key findings include:

- A total of eight hooded plover chicks fledged this season from 14 breeding pairs, a figure slightly below the anticipated number based on historical trends.
- The number of nests, eggs and chicks were 31, 70, 21 respectively. This is below the most recent five-year period average (2017-2022) of 40.4, 94.6 and 31.8 nests, eggs and chicks.

- Although the hatching rate this season was lower at 30%, a higher percentage of chicks survived to fledge (38.10%).
- High tides were responsible for 31.2% of nest failures, accounting for 44.27% of all unsuccessful nests. This includes six of the first ten nests laid.
- Quarterly hooded plover counts have consistently fallen below the 10-year average, prompting questions about whether this decline is a result of natural population variance or a local population decline.

Our latest report can be viewed at [Coastal Bird Research » Phillip Island Nature Parks \(penguins.org.au\)](https://penguins.org.au)

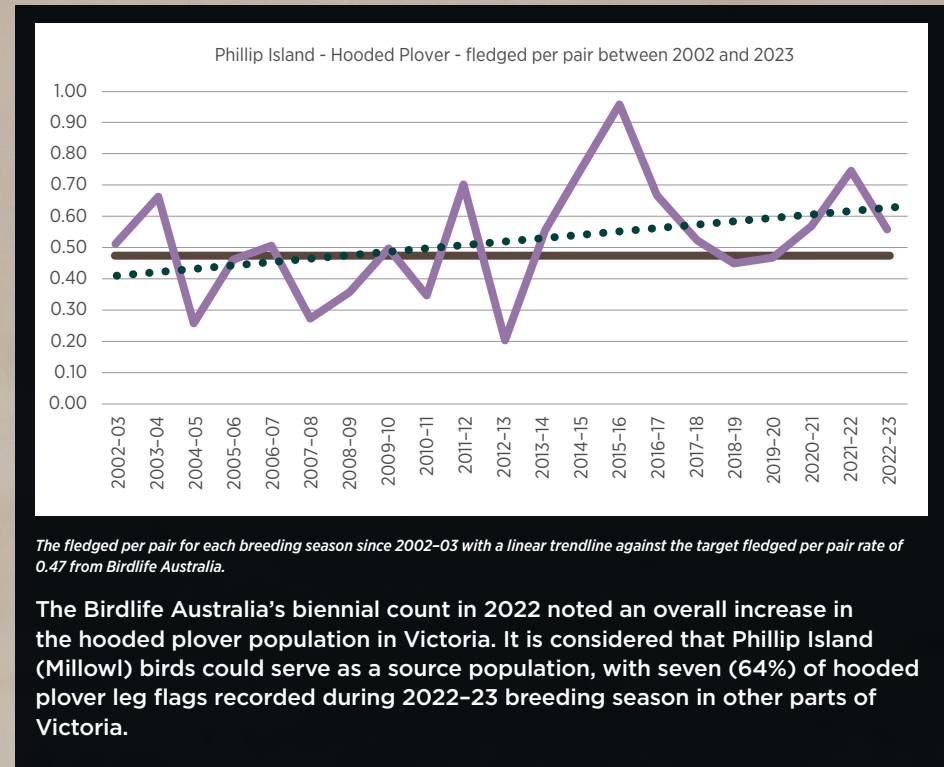


Image 12: Hooded plover at Berrys Beach.

Focus on Hooded Plovers

CAMERAS IN CONSERVATION FOR HOODED PLOVERS

The 'Nesting Shorebird and Cameras in Conservation' internship program has evolved over the last three years. This study aimed to evaluate the effectiveness of camera trapping in determining the causes of nesting failures. Cameras collected 2,513 images over 132 days, many of these images did not contain useful information as vegetation or other natural movement triggered the camera.

During the 2022-23 season five remote cameras were set up on nests and collected 2,513 images over 132 days. The images from this program

have revealed that the predominant causes of nesting failures are high tides and raven predation.

Volunteers are integral to the hooded plover program's success, dedicating over 200 hours to activities like monitoring nesting pairs and participating in the annual hooded plover count. Their significant contribution, comprising 31% of total records on the Birdlife Australia 'MyBeachBird' citizen science portal, greatly enhances our understanding of the species and supports conservation efforts.



Image 13: Hooded plover nest refuge.



Image 14: Raven with egg.

SHARING OUR SHORES CAMPAIGN

The 'Sharing Our Shores' community engagement campaign has been operational for two years and aims to educate our local community and visitors to the coastlines across Bass Coast on how to 'share the shores' with nesting shorebirds, seals and other wildlife. Starting in 2023, the Nature Parks partnered with Bass Coast Shire Council (BCSC), and Department of Energy, Environment, and Climate Action (DEECA) to elevate this campaign to new heights.

It is supported by regular beach patrols conducted by compliance officers from the Nature Parks, BCSC and the Conservation Regulator's 'Operation Soho'. These patrols aim to ensure beach users are adhering to regulations, particularly those pertaining to dogs.

The campaign also includes a poster competition inviting local school students to create artwork that communicates the importance of fostering harmonious relationships



between residents, visitors and wildlife to actively support local conservation efforts. The winning artwork will feature across beach signage in next year's campaign with QR codes linking to the latest beach regulations.

COLLABORATOR



Flyways for Eastern Curlews

RETURN TO OBSERVATION POINT, WESTERN PORT RAMSAR SITE

The Eastern curlew (*Numenius madagascariensis*) is the largest shorebird in the world and is listed as Critically Endangered in Australia (*Environment Protection and Biodiversity Conservation Act 1999*) and is one of the priority species listed in the Department of Climate Change, Energy, the Environment and Water's, *Threatened Species Strategy Action Plan 2022-2032*.

Global populations are estimated to have declined by 80% over the past 40 years, primarily due to loss of intertidal mudflats at critical staging and stopover areas during their migration from breeding grounds in the Northern Hemisphere. Other threats include human disturbance and degradation of habitat during their time wintering in the Southern Hemisphere.

The Western Port Ramsar site provides critical roosting and feeding habitat for Eastern curlews in the region supporting up to 3% of the global population. Major roost sites within Western Port include Stockyard Point, Yallock Creek, Tortoise Head on French Island and Observation Point on Phillip Island (Mallowl). Over the past 51 years of surveys at Observation Point, Eastern curlews have been recorded in over 70% of the surveys (Birdlife Australia). During the February 2023 count, 20 Eastern curlews were recorded at Observation Point with up to 26 being seen later in the same month. Interestingly, five Eastern curlews were observed in late June 2023, a time when most have migrated to the Northern Hemisphere breeding grounds highlighting the importance of Western Port as a significant site for the species year-round.

The overall recorded numbers of Eastern curlews on Phillip Island (Mallowl) have been steadily declining over time, reflecting an alarming international trend for the species.



Image 15: Eastern curlew.

Eastern curlew - February survey



Eastern curlew survey results.

COLLABORATORS



Conservation Canines

TEAM MEMBERS ON THE RUN

After an intensive training period during the past 12 months our fox-detection dogs are now fully prepared for field deployment, carrying on the legacy of their canine predecessors, Sam and Jazz.

Macey and Flash are the next generation of fox-detection dogs after veteran Jazz retired in June 2023, following nine years of loyal service detecting foxes.

Our fox-detection dogs have been active in the field within Victoria helping others to also combat foxes and create safe havens for threatened species. Macey and Flash have been deployed to survey 60 hectares at the Widgawah Conservation Reserve close to Seymour after evidence of a fox was discovered, triggering management actions to detect and remove it. Our conservation dog team also led a fox dietary study at Wonthaggi Heathlands for Parks Victoria. During this project the dogs successfully detected and located 53 fox scats, which were subsequently collected and dispatched for DNA analysis.



Image 16: Flash at the Wonthaggi Heathland.

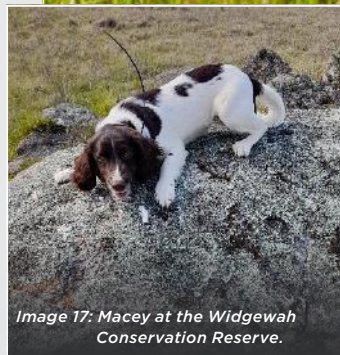


Image 17: Macey at the Widgawah Conservation Reserve.

Image 18: Conservation dog team from left to right: Macey, Milly, Marbee and Flash.

COLLABORATOR



Threatened Flora Reintroductions

RESTORING FUTURE RESILIENCE

A thriving floral community is essential to creating an island haven for threatened fauna.

The Nature Parks has identified several flagship threatened flora species for recovery, aiming to safeguard the diverse ecological communities they represent long term. The priority species that have been the focus include crimson berry (*Leptocophylla oxycedrus*) and currant wood (*Monotoca glauca*).

To reduce competition pressures from herbivores and weed infestations on threatened flora species, several strategies have been deployed, including exclusion fencing and weed removal. Additionally, seed germination trials and plant production at the Barb Martin Bushbank Nursery are showing promising results. Crimson berry populations on Phillip Island (Millowl) face the greatest threat from lack of natural recruitment. Adding genetic diversity from other populations may be the only solution for the future.

The Nature Parks staff was excited to work with rangers from Parks Victoria on a crimson berry study in 2023. By travelling by boat to the remote east coast of Wilsons Promontory, where ten seedlings were in danger of being trampled, the team collaborated to understand and trial different ways to save this critically endangered species.

To minimise root disturbance crimson berry suffers from, plants were meticulously wrapped in peat moss to transport them back to the Barb Martin Bushbank Nursery. These plants are now developing new growth and will be translocated into the newly established colony at Cape Woolamai in 2024. The colony

was established with 23 plants, propagated from cuttings at the Barb Martin Bushbank Nursery and Friends of the Prom Nursery.

The addition of the naturally germinated salvaged specimens will boost the chances of future natural recruitment occurring. This population is in a sheltered area away from the cliffs and enclosed with herbivore exclusion fencing for protection against browsing.

Enrichment planting has been successfully conducted in plant communities adjacent to the Cape Woolamai populations and at another site on Phillip Island (Millowl), involving the addition of 250 indigenous shrubs to enhance the habitat. Seed germination trials and plant production will continue to support future works with the overall aim of improving habitat health.



Images 19-23 clockwise: A tray of crimson berry plants, Parks Victoria and the Nature Parks staff extracting plants, tube stock of a crimson berry plant, crimson berries, boat transfer.

Threatened Flora Reintroductions

CURRENT WOOD *Monotoca glauca*

In 2022, the Nature Parks established a 680m² herbivore exclusion coop in Rhyll wetlands to protect young currant wood plants. Over the 18-month period since its installation, we've seen great success with the population increasing from 40 to 713 plants. The enclosure has benefited many other rare local species, leading to substantial recruitment of, in some cases, species that are seen nowhere else on Phillip Island (Millowl).

With successful propagation of currant wood in the Barb Martin Bushbank Nursery, rangers were able to reintroduce 23 currant wood plants into Cape Woolamai and 18 plants into the Rhyll wetland population, further building the stronghold for these species' survival. Ongoing monitoring and security of these plants will continue as the team re-establishes this species' survival on Phillip Island (Millowl).

The Nature Parks staff made a significant discovery of a small population along the Ramsar coastline with several mature plants with flower spikes surrounded by approximately 50 immature plants. This is the first observation of this species naturally occurring on Phillip Island (Millowl) since 2017. During 2022, supplementary planting of salt lawrencia at Fishers Wetland was carried out, and all plants survived which enabled rangers to further supplement an additional 96 plants in 2023.

The Barb Martin Bushbank Nursery is a native plant nursery operated by the Nature Parks located at the Koala Conservation Reserve. The nursery utilises the green thumbs of local volunteers to propagate and plant seed stock. During 2023, the Barb Martin Bushbank Nursery has produced large numbers of rare and threatened flora listed in the *Flora and Fauna Guarantee Act 1988*. The efforts of the Barb Martin Bushbank Nursery team exemplifies our ongoing commitment to safeguarding endangered plant species by not only propagating from diminishing wild specimens but also actively reintroducing them into our local ecosystems, ensuring their ongoing survival and recovery.

Production records from the Barb Martin Bushbank Nursery.

Common name	Botanical name	Production numbers
Peninsula daisy bush	<i>Olearia species</i>	400+
Salt lawrencia	<i>Lawrencia spicata</i>	300+
Currant wood	<i>Monotoca glauca</i>	110
Yellow sea-lavender	<i>Limonium australe</i>	200+
Marsh saltbush	<i>Atriplex paludosa</i>	300+
Southern blue gum	<i>Eucalyptus globulus subsp globulus</i>	350
Crimson berry	<i>Leptocophylla oxycedrus</i>	35
Dune poa	<i>Poa poiiformis var. ramifer</i>	100
Nodding green hood	<i>Pterostylis nutans</i>	50
Common onion orchid	<i>Microtis uniflora</i>	15



Image 25: Salt lawrencia (*Lawrencia spicata*).



Image 26: Volunteer working in exclusion coop.



Image 24: Planting in exclusion coop.

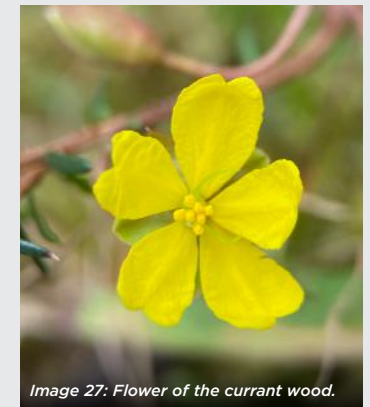


Image 27: Flower of the currant wood.

PARTNERS



Energy, Environment and Climate Action

COLLABORATORS



Enhancing Life and Liveability



Phillip Island
**NATURE
PARKS**

Phillip Island Nature Parks
PO Box 97 Cowes, Victoria 3922 Australia
Tel: +61 3 5951 2800
Email: info@penguins.org.au

**For further information
on our threatened species
program, please contact:**

Jess McKelson, General Manager Conservation
jmckelson@penguins.org.au

