



CONSERVATION UPDATE

JUNE TO AUGUST 2021

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CONSERVATION MANAGER



HIGHLIGHT – THREATENED SPECIES

BUSH STONE-CURLEWS

Two juvenile Bush Stone-curlews arrived on Millowl (Phillip Island) in July and have been settling into their new home at the Koala Conservation Reserve (KCR). Although these birds are mostly ground-dwelling, the Conservation and Operation Rangers added some aviary netting over the top of one of the koala rehabilitation pens. These two female birds originated from Moonlit Sanctuary and will form part of a wild release group that will be reintroduced back to the Island pending permits and further introduction of this species within the community.

Staff and volunteers have been developing their skills in Bush Stone-curlew husbandry – feeding the birds twice a day and undertaking a health check every fortnight. In August, construction will begin on the first Threatened Species Aviary in the KCR, where potentially the Nature Parks will participate in a Statewide breeding program that focuses on re-establishing Bush Stone-curlews where they are currently classified as Critically Endangered. These education aviaries at the KCR will be open for visitors by summer school holidays as we aim to build a connection with this iconic species that once called Millowl home.



Above photo: Koala rehabilitation pen for Bush Stone-curlews at the Koala Conservation Reserve

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Above photos: Bush Stone-curlews

FLORA AND FAUNA GUARANTEE PLAN SPECIES PHILLIP ISLAND (MILLOWL) 2021

The Nature Parks Conservation team has summarised the new Flora and Fauna Guarantee Plan (FFG) list for Threatened Flora found on Phillip Island (Millowl).

Crimson Berry is now Critically Endangered (previously Vulnerable under the Advisory List), **Monotoca glauca** is now Endangered (previously considered Rare, but not otherwise threatened, under the Advisory List), **Slender Pink Fingers** and **One-Flower Early Nancy** are now Vulnerable (both previously considered Rare, but not otherwise threatened, under the Advisory List).

Hooded Plovers have remained classified as Vulnerable in Victoria, but that is still under review. **Fairy Terns**, previously considered Vulnerable, are now moved into the Critically Endangered category. **Bush Stone-curlews** have also moved from being Endangered to Critically Endangered.

Scientific name	Common Name	Extinction Risk	Category of threat
<i>Amphibromus fluitans</i>	River swamp wallaby grass	Vic	Endangered
<i>Asplenium decurrans</i> (formerly <i>Asplenium obtusatum</i> subsp. <i>Northlandicum</i>)	Shore spleenwort	Vic	Endangered
<i>Atriplex paludosa</i> ssp. <i>paludosa</i>	Marsh saltbush	Vic	Endangered
<i>Avicennia marina</i> subsp. <i>australasica</i>	Grey mangrove	Vic	Endangered
<i>Caladenia vulgaris</i>	Slender Pink-fingers	Vic	Vulnerable
<i>Eucalyptus globulus</i> ssp. <i>globulus</i>	Southern blue gum	Vic	Endangered
<i>Exocarpos syrticola</i>	Coast ballart	Vic	Endangered
<i>Geranium</i> sp3	Pale-flowered cranesbill	Vic	Endangered
<i>Heterozostera nigricaulis</i>	Australian grass wrack	Vic	Endangered
<i>Juncus revolutus</i>	Creeping Rush	Vic	Endangered
<i>Lachnagrostis punicea</i> subsp. <i>filifolia</i>	Purple Blown-grass	Vic	Endangered
<i>Lawrencina spicata</i>	Salt Lawrencina	Vic	Endangered
<i>Lepidium foliosum</i>	Leafy pepperpress	Vic	Endangered

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Scientific name	Common Name	Extinction Risk	Category of threat
<i>Leptecophylla oxycedrus</i>	Crimson Berry	Vic	Critically Endangered
<i>Limonium austral var. australe</i>	Yellow Sea lavender	Vic	Endangered
<i>Monotoca glauca</i>	Currant-wood	Vic	Endangered
<i>Olearia sp2 aff. lanuginosa</i>	Peninsula Daisy-bush	Aus	Endangered
<i>Oxalis rubens</i>	Dune wood sorrel	Vic	Endangered
<i>Poa halmaturina</i>	Dwarf Coast Poa	Vic	Endangered
<i>Poa poiformis var ramifer</i>	Dune Poa	Vic	Endangered
<i>Salsola tragus ssp. pontica</i>	Coast saltwort	Vic	Endangered
<i>Thelymitra X merraniae</i>	Merran's sun-orchid	Vic	Critically Endangered
<i>Wurmbea uniflora</i>	One-flower Early Nancy	Vic	Vulnerable

Above table: Flora and Fauna Guarantee List



Above photo: Chisholm Centre artwork by Jimmy DVATE that represents our threatened species on the Island.

SHORT-TAILED SHEARWATERS

While the Short-tailed Shearwaters (Byadin or mutton birds) were in the Northern Hemisphere during our winter, a small army of Nature Parks staff and volunteers built and replaced 50 of the 180 shearwater nest boxes near the Penguin Parade in June. The boxes are buried to imitate natural burrows and quite a few had rotted after about 10 years in the ground. Monitoring birds using these nest boxes has been vital to our understanding of the year-to-year variation in their breeding success and enables us to fit tracking devices on birds and follow their movements around the world.

The Nature Parks ground services team did an amazing job constructing the boxes, upcycling unused penguin and bird boxes. Our volunteer research partners from the Victorian Ornithological Research Group (VORG) and our staff dug out the old boxes and expertly installed the replacements. Many hands make light work, but it was a huge effort to successfully replace them all in a day!

The shearwater colony within which the nest boxes are located are in an area of Aboriginal Cultural Heritage, so Bunurong Land Council Aboriginal Corporation Cultural Heritage Advisors were on hand to guide activities, and were able to identify more cultural heritage sites in the area. It was a great example of the Nature Parks and the Bunurong Land Council Aboriginal Corporation working together to protect our natural and cultural assets and share knowledge.

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Above photo: - Volunteers, research partners and Bunurong Land Council Aboriginal Corporation working on the shearwater nest boxes

AUSTRALIAN FUR SEALS

The '2021 Seal Spotter Challenge' is complete. We had unprecedented global interest - with people from 93 countries engaging.

The counts provided are vital to our research and the conservation efforts of Phillip Island Nature Parks, so we really appreciate your efforts.

The Newsletter was distributed to participants and posted on the Nature Parks website. It can be found at this link - <https://www.penguins.org.au/conservation/research/seal-research/sealspotter-citizen-science-portal/>

PEST CONTROL

Foxes

A report of a fox at Ventnor was received from a member of the public and investigations with cameras, detection dogs and night time surveillance were undertaken, with no evidence to support the sighting as yet, however the search continues.

Feral Cats

Between June and August a total of 29 cats were removed from seabird habitat on the south coast between Forrest Caves and Sunderland Bay, and the Ramsar Coastline at Rhyll Inlet. Of these 29 cats, 27 were trapped (25 feral and 2 domestic) over 1,930 trap nights, and two feral cats were destroyed on Summerland Peninsula.

Feral Cat Research

Development of a Feral Cat Eradication Strategy for Phillip Island is ongoing with comments from external experts being integrated into the strategy which is now being revised for final comment and adoption. We are working in collaboration with Dr Hugh McGregor, ecologist from the University of Tasmania, who is analysing the camera trap imagery on the Summerland Peninsula to estimate feral cat density using spatially explicit mark resight models.

Trapping at Summerland Peninsula has commenced to catch and collar feral cats for a GPS tracking study. This follows on from similar studies at Cape Woolamai in 2019 and 2020 and will help us learn more about how feral cats use the landscape, and measure the effectiveness of our current camera monitoring programs.

Domestic Cats

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Throughout July and August the Nature Parks has contributed to various working groups and Bass Coast Shire Council (BCSC) in promoting 24-hour containment of domestic cats, and has also contributed to Bass Coast Shire Council's Domestic Animal Management Plan (DAMP) 2021-25. The draft is currently available for community feedback at <https://www.basscoast.vic.gov.au/services/pets-animals/domestic-animal-management-plan>

Rabbits

In collaboration with Bass Coast Landcare Network, rabbit monitoring and control continues in the north-eastern section of Phillip Island in areas around Fishers Wetland. Pre-control spotlight counts were undertaken to serve as a measure of change in the population at sites with follow-up counts planned after control measures have been implemented. Warren fumigation has been completed with post-control spotlight counts occurring to obtain a measure of reduction.

In July, Surf Beach Sunderland Bay Coastcare Group coordinated a Rabbit Workshop to bring together ecologists and land managers to discuss the impacts of rabbits and strategies for managing rabbits in an urban context on Phillip Island and included topics on reducing rabbit harbour on properties, warren destruction and exclusion fencing.

The group is working on a proposal to exclude rabbits from a sensitive coastal heathland at Sunderland Bay.

Detection Dogs

Cat Detection dogs Marbee and Milly have had their first day working in the field in June and indicated on eight different cat scats between them. They will continue to refine their detection skills over the coming months while working in the field and by November-December they will have completed the final stage of their training and will be accomplished cat scat detection/tracking dogs.

Fox Detection dogs continue to carry-out monitoring in historic locations where foxes once were present across the Island and also have followed up reported public sightings. Locations of reported public sightings include the intersection of Rhyll-Newhaven Road and Phillip Island Tourist Road and Newhaven Caravan Park. The Fox Detection dogs haven't detected any fox presence at either of these sites or any of the historic locations.



Above photo: Marbee and Milly performing their cat detection roles in the field, June 2021.

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COASTAL AND WOODLAND MANAGEMENT

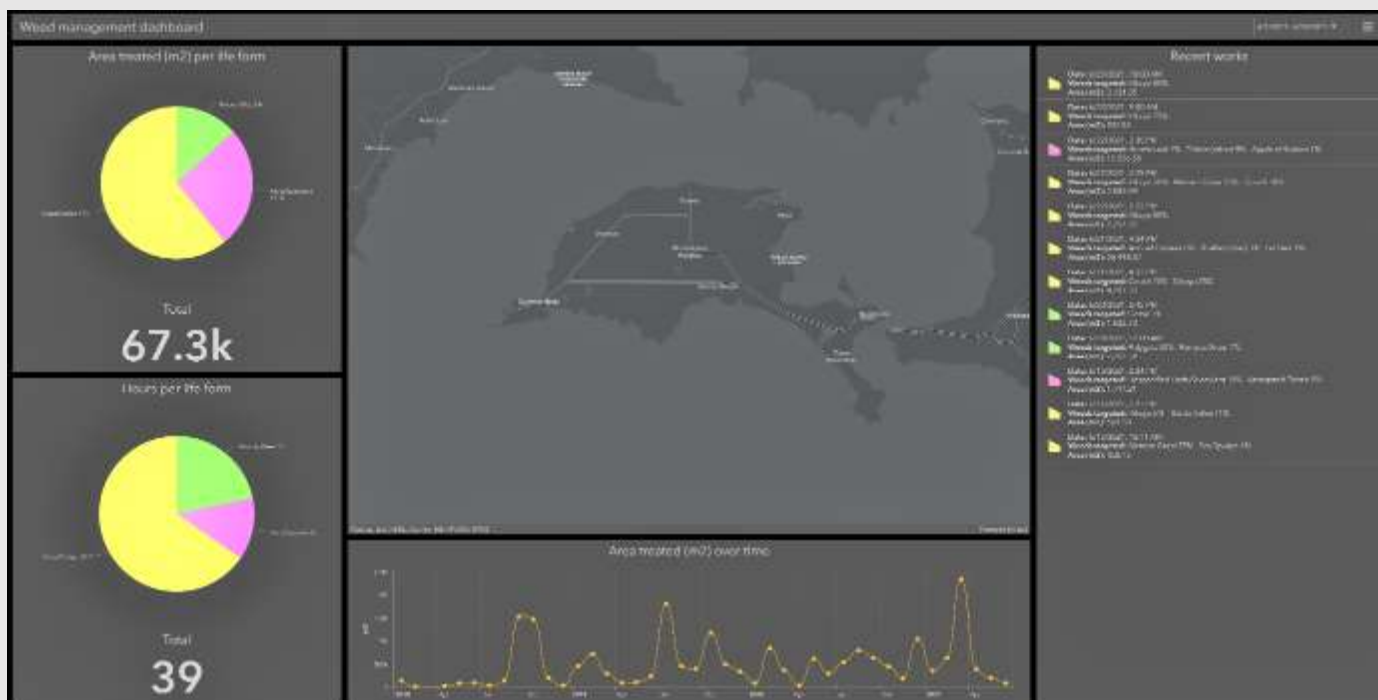
Over two days during NAIDOC Week (4 July to 11 July) the Nature Parks Conservation team completed Stage 2 of the 6.7 hectares of rehabilitation at the Penguin Parade with works including:

- Planting one hectare with 15 species (grasses, sedges and creepers) and 3,700 individual plants to outcompete the smothering grasses, and work was undertaken within the creek line with semiaquatic plant species.
- Completing a total of 180 hours planting.
- Undertaking weed control.

In August 23.6 hectares (62.5 hrs) of weed control was completed across the Nature Parks.

Works included Thistle control at Summerlands, Kikuyu control at Devon Avenue, and Woody Weed control at the site of the old Rhyll Transfer Station, Cape Woolamai, and Observation Point. Contractors were also involved in our weed control on Cape Woolamai which included Apple of Sodom, Thistles, Horehound and Kikuyu. We have completed the first spray run of the Bridal Creeper monitoring project and 1,970 native plants were planted in August at the old Rhyll Transfer Station site, Penguin Parade visitor centre and Ventnor.

Our revegetation program is 85% complete for 2021.



Above map: Targeted weeds June to August 2021

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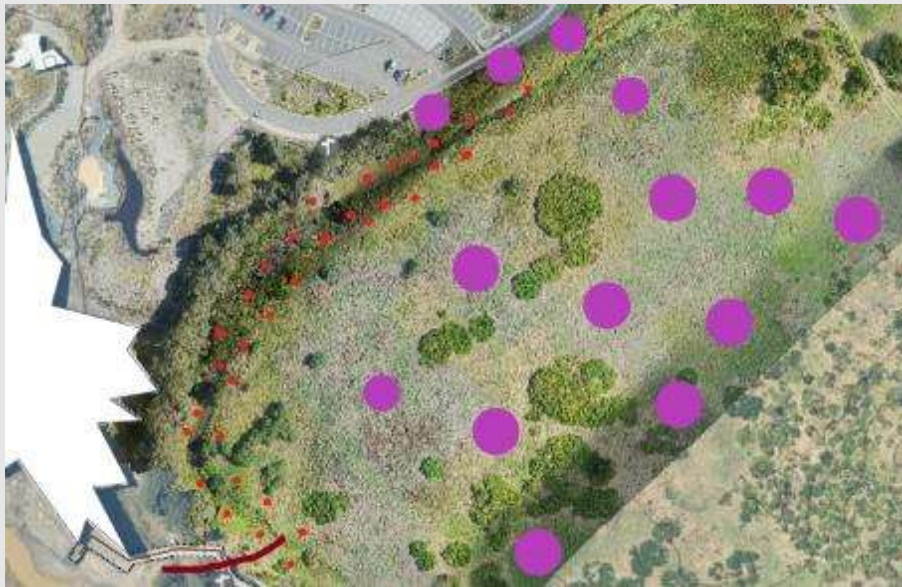
Above map: Yellow shows the targeted weeds work in Ventnor (Kikuyu, Marram Grass, Couch and other weeds)



Above map: Targeted weed work in the Summerland Peninsula (Kikuyu, Marram Grass, Couch and other. Pink represents Horehound, Apple of Sodom and other weeds).

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Above map: Stage 2 of the 6.7 hectares of rehabilitated land – Summerland Peninsula
Purple dots day 1 (trees and shrubs)
Red dots and bare areas day 2 (grasses and sedges)

DUNE RESTORATION AT SUMMERLAND BEACH

Evidence from detailed local studies have shown increased storm surges in the past 10 years, causing rapid dune erosion and habitat loss around the Penguin Parade viewing stands. The risk of erosion brings challenges with significant economic and environmental priorities. With this risk in mind, the Nature Parks applied for and received funding from the DELWP Coastal Public Access and Risk Grants 2020-21 to mitigate current erosion and strengthen the dunes' resilience around existing infrastructure at the Penguin Parade. This grant enabled contractors to move 2,000 m³ of sand to replace lost sand, restore penguin access to the colony, remove coastal weed, create new penguin access, notches along the beach, and plant 770 native plants on the foredune.



Above photos: The extensive five-day sand nourishment carried out in winter 2021 has restored the historical beach profile at the Summerland Beach.

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CAPE WOOLAMAI

Local Traditional Custodian, Steven Ulula Parker, was commissioned by the Nature Parks to develop artworks for the entrance of Cape Woolamai and Anzacs Beach as part of an interpretive project in 2020. The artwork at the entrance represents the spiritual significance of the *Warreeny* (ocean) around the Cape, Pinnacles and Pyramid Rock, and the tidal movements between the Cape and San Remo. The surfboard represents Anzacs as part of the *Phillip Island National Surfing Reserve* dedicated on Saturday 16 March 2013 for surfers of yesterday, today and tomorrow. The motto for the Reserve is share, respect, and preserve and it is Victoria's only National Surfing Reserve and covers four sites including Cape Woolamai, Smiths, Cat Bay and Summerland.



Above photo: Artwork by Steven Ulula Parker

WALLABY EXCLUSION FENCE

During July, Nature Parks Environment Rangers constructed a wallaby exclusion fence for the protection of the critically endangered Crimson Berry on the cliff between YCW and the Grand Prix Circuit. It was a great team effort and the Rangers who were trained in ropes access completed this priority work. The fence was installed all the way down to the beach and aims to promote natural recruitment of this threatened species without any browsing pressure from native wildlife. This activity was funded by the Penguin Foundation.



Above photo: New Wallaby exclusion fence

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Above photos: New wallaby exclusion fencing which goes all the way down to the beach

SUMMERLAND PENINSULA PLANTING AND MAINTENANCE DAY

During August, the Nature Parks staff hosted a planting and maintenance day at Summerland Peninsula. Activities included planting over 700 native plants around penguin burrows and the Penguin Parade mini wetland. There was also maintenance conducted around penguin burrows that included shading them with branches and spinach to ensure insulation for Little Penguins on the hot summer days.



Above photos: Staff planting day at Summerland Peninsula

BARB MARTIN BUSH BANK NURSERY

The Bushbank nursery has seen production of 2,850 plants from seed or cuttings in the last three months and completion and delivery of stock to Landcare and ongoing supply of stock for revegetation for Bass Coast Shire Council.

Planting of Bushbank stock has commenced at Rhyll as part of the habitat restoration plan.

Seed collection has commenced of winter flowering varieties and installation of spring seed and cuttings in bulk with consolidation of stock with weeding and cleaning in preparation for large scale production in the coming months.

This work was only possible because of all the dedicated work from 11 redeployed staff, 2 work experience students and 38 volunteers.

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Above photos: Threatened Flora – Limonium and Olearia

LITTLE PENGUINS

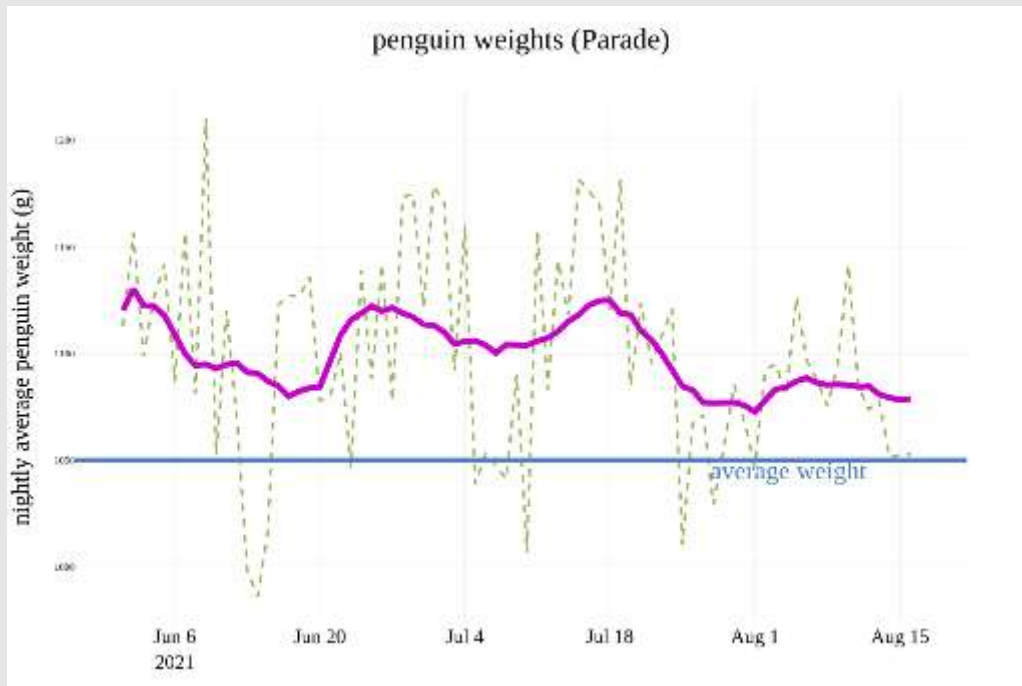
The average number of Little Penguins crossing the beach at the Penguin Parade in July 2021 was 785, a decrease of 15% from 923 penguins recorded in July 2020. Due to lockdown restrictions, there were a few days where rangers were unable to count and record the penguin numbers, which explains this drop. While penguin numbers were slightly below average, penguin weights were still above the long-term average. There were a few nests with eggs and small chicks recorded which were the result of the autumn breeding attempt. However, the weather and oceanographic conditions changed in winter, so this breeding attempt ended.

The average number of penguins crossing the beach at the Penguin Parade in August 2021 was 992, a 55% increase from 551 in the same month in 2020.

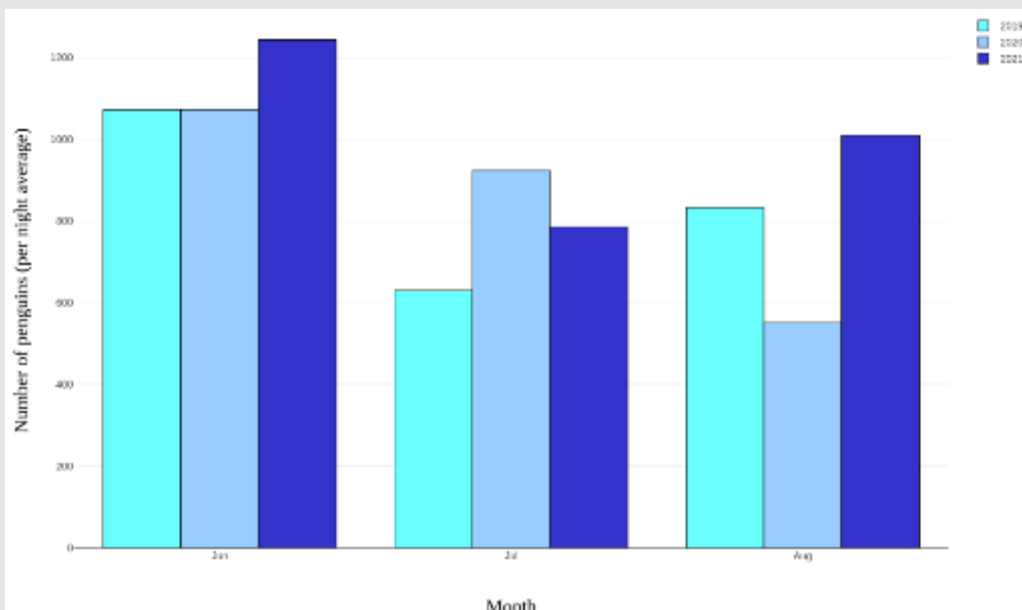
Previously hatched chicks (<5% of monitored burrows) failed, but breeding activity ramped up again with an increase in pairs found in burrows, lots of nesting material being collected and one new egg recorded at a Penguin Parade study site. The Penguin Parade colony is currently quiet, and the team is waiting to see if the penguins are on their pre-laying exodus, or as we like to call it, “honeymoon” (when penguins go out to sea to feed prior to egg laying). This pre-laying exodus can last on average 10 days, before both penguins return for egg laying.

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Above graph: Penguin weights from June to August 2021



Above graph: Penguin numbers from June - August 2021 with comparison weights from 2019

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Above photos: July and August – two burrows at the Penguin Parade have recently hatched chicks, a penguin with chicks and five week old penguin chicks on the right hand side were found outside the Penguin Parade study sites (when a box lid was being repaired!)

HOODED PLOVER AND GULL COUNT

Staff, volunteers, interns and Bass Coast Shire Council (BCSC) conducted a Hooded Plover and Gull count in August. Recordings included 39 Hooded Plovers (38 adults, one juvenile). The juvenile *Yellow 92* was seen at Kitty Miller Bay where it hatched with parents (*Yellow 21* and *unbanded*). The average July/August recorded sighting total for the past 20 years is 38.

There was a total of 93 Pacific Gulls: four first year plumage, 15 second year plumage, five third year plumage, one fourth year plumage and 68 adults. Over the last 20 years the number of Pacific Gull has ranged from 36-166.

There was a total of seven Kelp Gulls recorded. Over the last 20 years the number of Kelp Gulls has ranged from 2-63.

It was interesting to note that there were six species of raptor observed. A Wedge-tailed Eagle, Sea Eagle, Brown Goshawk, Swamp Harrier, Brown Falcon and a Peregrine Falcon. There were also 97 Little Ravens on the Summerland Peninsula.

KOALAS AND CONSERVATION RESERVE

Planting works at the Koala Conservation Reserve (KCR) included 200 Manna gums in the South plantation and a mixture of 300 Blue gums and Swamp gums planted into existing gaps in the North and East Plantations. These are the primary food species for the koalas, and Environment Rangers had 21 Nature Parks volunteers assisting them with planting and guarding works. Thank you - we can't do it without you!

Vegetation was trimmed along new sections of the KCR perimeter fence to ensure the effectiveness of this koala-proof-fence. The Phillip Island Tourist Road fence and the Harbison Road fence were replaced as the existing fences had deteriorated. This was generously funded by WWF Australia.

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Above photos: WWF-Australia funded Koala fence

Arborist contractors, *Arborcraft*, have nearly completed the tree works required from a 2020 tree audit throughout the KCR. These works ensure the safety to visitors using the tracks and boardwalks whilst maintaining the integrity of the trees.

Heavy storm damage occurred throughout the KCR in June and a massive cleanup was undertaken to make the site safe and presentable to the public.

The Nature Play area is now complete and finishing touches to the sculptures were made with conservation-based messaging and an eye-catching mural, featuring KCR animal species, on part of the south side of the Visitor Centre. This greets visitors as they make their way up to the building entrance.



Above photo: Koala Conservation Reserve sculptures

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Above photos: Two murals featuring KCR animal species next to the KCR Visitor Centre

WILDLIFE REHABILITATION & MANAGEMENT

In the months June to August 2021 the Nature Parks' Wildlife Rehabilitation clinic responded to over 210 calls ranging across 39 different species.

June saw the last of the Little Penguins that had been affected by rough weather released back into the ocean, ending almost two months of intensive care and rehabilitation for these birds, most of which were juveniles.

A malnourished female juvenile Northern Giant Petrel, was rescued from Mount Eliza beach by swimmers in June. She was checked at the Melbourne Zoo Vet Clinic who then transferred her to the Nature Parks for rehabilitation. After almost three weeks in care, the bird regained condition and fitness, and was released from the cliffs along the Summerland Peninsula in early July, taking off quickly and flying beautifully.



Above photo: Female Northern Giant Petrel in rehabilitation pool

An Echidna found on the road in Ventnor, ended up with a nasty graze on its bottom (cloaca) after being hit by a car. This lucky Echidna was picked up by Wildlife Victoria volunteers and taken to the Newhaven Vet Clinic for a check up before spending a few days on medication at the Nature Parks' wildlife shelter and being released in a nice patch of habitat close to where rescued from.

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With the Cape Barren Goose breeding season in full swing it's not uncommon to get calls for orphaned goslings. One was found on its own in Ventnor, and was fostered out to one of the goose families at the Penguin Parade and was seen again a few days later still happily foraging with his/her new family.



Above photo: Cape Barren Gosling fostered to new family (the large chick in the middle)

RESEARCH PUBLICATIONS

Two studies completed and published in this period, showing the foraging flexibility of Little Penguins along the breeding season and how penguins respond to extreme storm events. The recent Intergovernmental Panel on Climate Change (IPCC, read more below) predicts extreme weather to become more frequent with global climate change, affecting the foraging efficiency of penguins. It is crucial for conservation management to evaluate the capacity of our penguins to respond to these events.

Little Penguins Incredible Plasticity When Hunting For Food

The ultimate success of a seabird breeding season is determined by how well parents feed their chicks. While most studies follow penguins for one feeding trip, this study followed individual penguins for the whole breeding season. Penguins showed remarkable flexibility when searching for food. They varied their feeding strategy at short notice to get the best food and chose different foods depending on where they were in their breeding stage. The results highlighted the limitations of relying on information based on a single feeding trip.

Read more here:

<https://doi.org/10.1007/s00227-021-03867-2>



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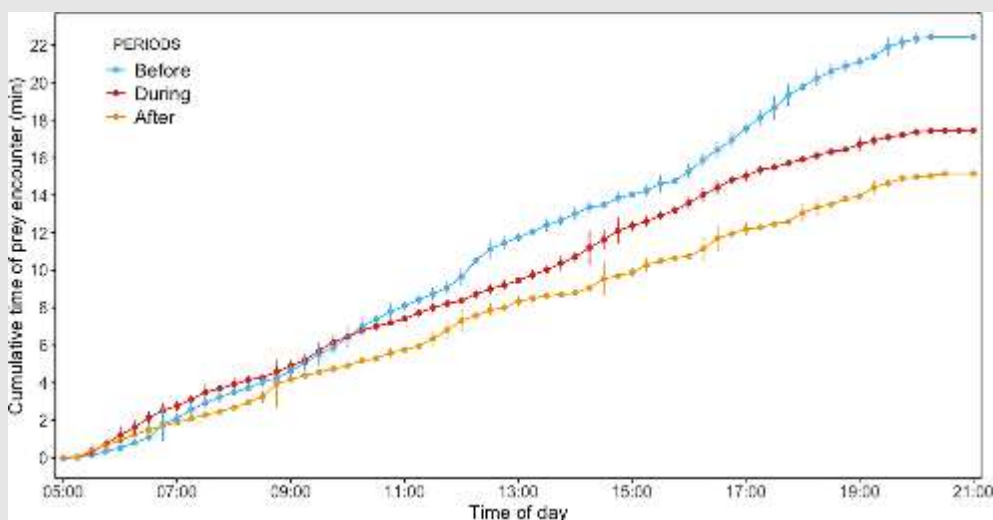
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The Consequences Of Chaos: Foraging Activity Of A Marine Predator Remains Impacted Several Days After The End Of A Storm.

As extreme weather is becoming more frequent with global climate change, we examined how a three-day storm affected the foraging behaviour of Little Penguins. The adverse effects on the foraging efficiency of Little Penguins continued several days after the storm ceased, suggesting an extended impact on the foraging efficiency of Little Penguins. Short-term extreme events can have an extended impact on the foraging efficiency of Little Penguins. When occurring at a crucial stage of breeding, this may affect breeding success.

Read more here:

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0254269>



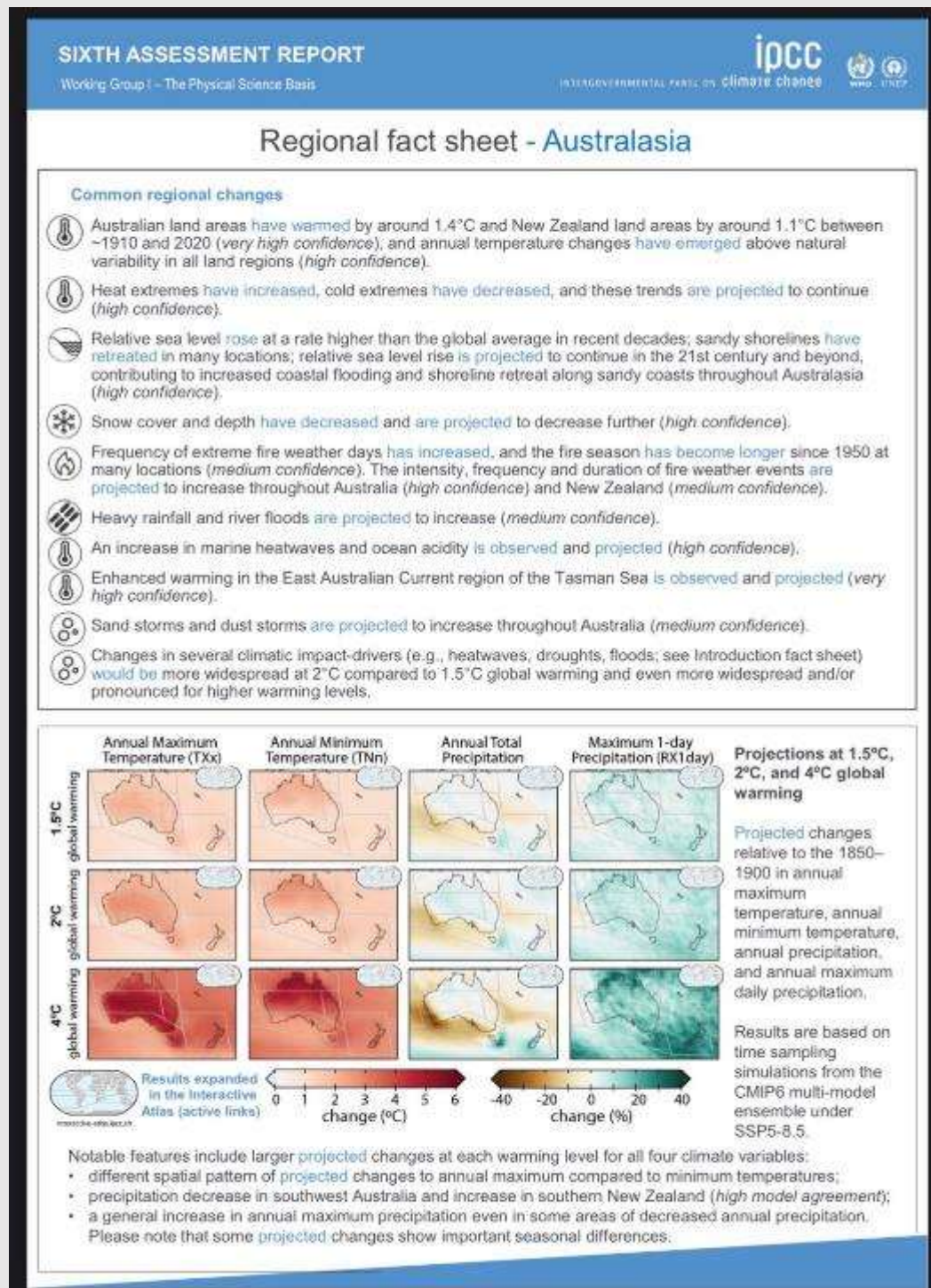
Above graph: The cumulative time finding prey of Little Penguins as a function of the time of day for the three stages. "Before", Blue, "During" Red and "After" Yellow curves, showing the slow recovery after the storm event.

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Regional Fact Sheet

A Regional Fact Sheet below published by the Intergovernmental Panel on Climate Change (IPCC) for Australia which is relevant to Phillip Island (Millow) and shows common regional changes and global warming graphs.



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WORLD RANGER DAY – 31 JULY 2021

The Nature Parks held a virtual event on 31 July with staff to commemorate Rangers killed or injured in the line of duty and to celebrate the work Rangers do to protect the planet's natural treasures and cultural heritage. On World Ranger Day we remembered we are part of a global Ranger family, we are guardians of the world's life support system and we give heartfelt thanks to Rangers worldwide for their passion, hard-work and sadly some ultimate sacrifices to protect our planet.

NATIONAL SCIENCE WEEK 14 - 22 AUGUST

The land we live on, the air we breathe, and the food we eat is all sustained by science. Science also has the power to contribute to solutions for major challenges such as the climate crisis. We are committed to using science, technology and our long-term research to understand and tackle the current climate crisis head on.

In Science Week, the Nature Parks celebrated the achievements of our passionate team of scientists and conservation partners, who use evidence-based knowledge and innovative technologies to protect valuable natural assets into the future. A live-streamed panel discussion on the impacts of climate change on Phillip Island's wildlife took place on Thursday 19 August 2021 with some of our Nature Parks Research team. A sure highlight of the week was a presentation by Dr Andre Chiaradia and Dr Rebecca McIntosh on how the current climate crisis will affect two iconic species; Little Penguins and Australian Fur Seals if urgent action is not taken.

Please find link to the climate crisis – How is Phillip Island's iconic wildlife impacted by climate change
<https://storymaps.arcgis.com/stories/d69b9ed912d24822848e75aba498af78>



Above photo: Several of Nature Parks Research staff members



Above photo: Nature Parks Data Analyst preparing a drone for research purposes