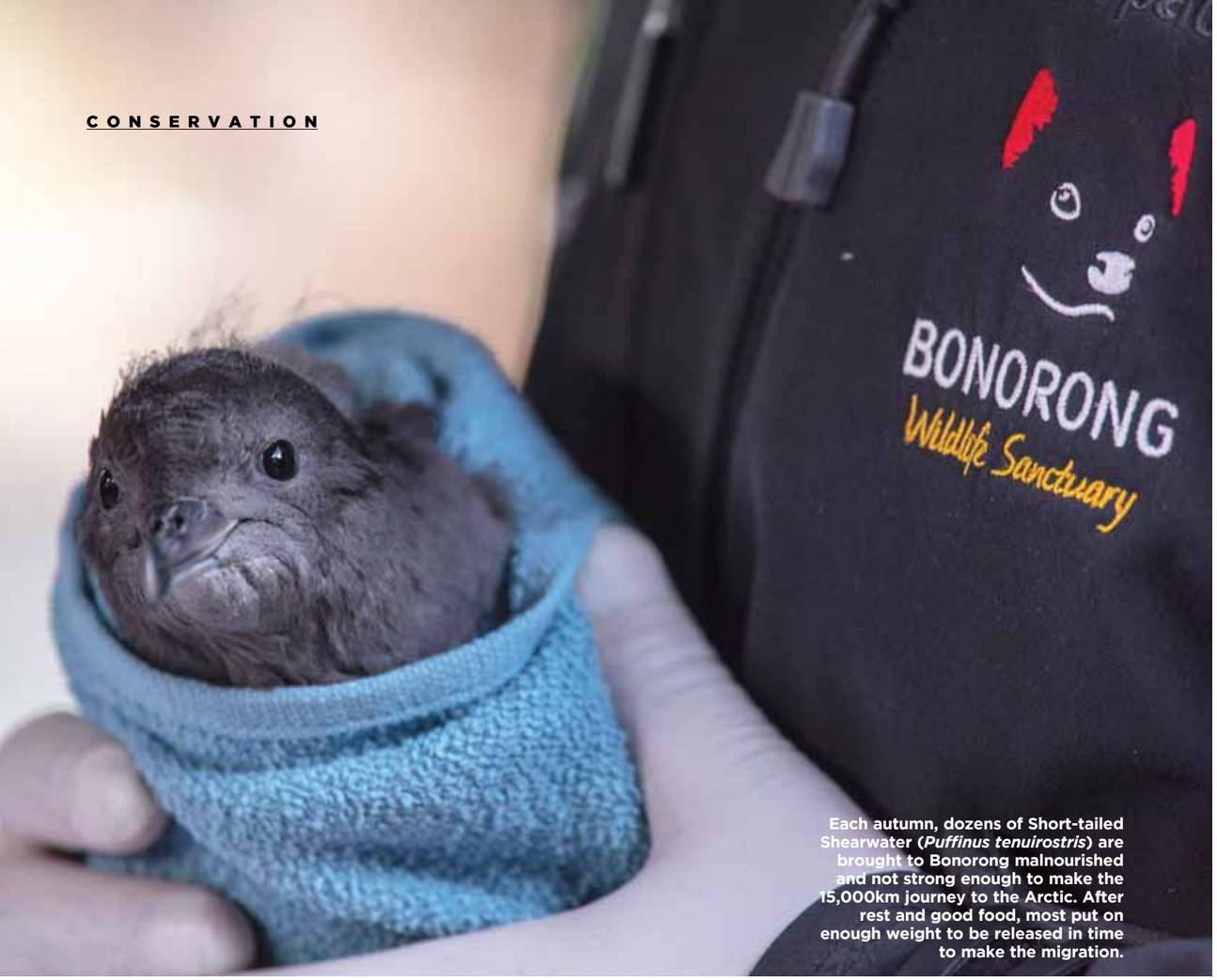


Each autumn, dozens of Short-tailed Shearwater (*Puffinus tenuirostris*) are brought to Bonorong malnourished and not strong enough to make the 15,000km journey to the Arctic. After rest and good food, most put on enough weight to be released in time to make the migration.

A DAY IN THE LIFE AT BONORONG

On any given day, Bonorong Wildlife Sanctuary in Tasmania tends to hundreds of orphaned and injured wild animals, with the aim of releasing them back into the wild. **Grace Heathcote**, Bonorong's conservation projects manager, takes us behind the scenes, including a first look at its newly-opened wildlife-only hospital, while **Gemma Koh** gets to know its permanent residents and their stories.

Photos by **Bonorong Wildlife Sanctuary**, **Gemma Koh**, **Poon Wai Nang**, **Mike Calder** and **Tourism Tasmania**

The island state of Tasmania, over 68,000sq km in size and lying off the southern tip of Australia, is home to the cleanest air in the world and famous for its endemic wildlife, not least the embattled Tasmanian Devil (*Sarcophilus harrisii*). Under its Threatened Species Protection Act 1995, the Tasmanian Government lists 190 animals as threatened, of which 66 are endangered and eight already extinct. In a country that possesses the highest rate of mammalian species loss in the world since European colonisation 230 years ago, the focus to protect the species that still remain is strong.

Tasmania is fortunate to have a number of national parks and reserves totalling over 40% of the total land area of the island. These areas provide important refuges for many species now found nowhere else in the world. They include 12 endemic bird species and a number of mammals like the devil, the Eastern Quoll (*Dasyurus viverrinus*), the Tasmanian Pademelon (*Thylogale billardierii*), and the Tasmanian Bettong (*Bettongia gaimardi*). Despite this, threats like habitat destruction, cat and dog attacks, car strike and disease continue to afflict native wildlife. Car strike is a particular problem, with at least half a million native animals killed by vehicles each year in Tasmania, making the state's roads deadlier for wildlife, per capita, than anywhere else in the world.

To ease the impact of some of these threats, Bonorong Wildlife Sanctuary operates with a focus on projects to conserve, rescue, rehabilitate and release wildlife. These include a veterinary hospital, wildlife rescue service, education outreach, breeding programmes, conservation projects and research. On a typical day, the staff at Bonorong care for hundreds of animals – permanent residents unable to be returned to the wild, those in short term rehabilitation, and new arrivals being assessed for injury:

8AM

Sipping cups of coffee, 18 staff file into the outdoor amphitheatre for their morning meeting. While sanctuary manager Petra runs through the daily plan – assigning duties and reading notes from the previous day – a last layer of sunscreen is applied and shoelaces retied. As soon as the meeting is over, the staff speed off in different directions.

8:30AM

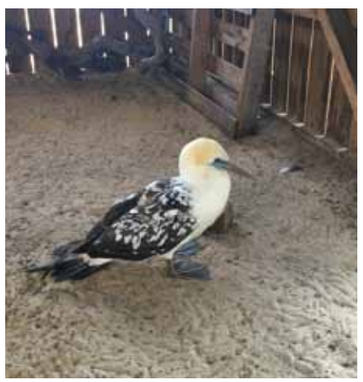
Every morning and afternoon, Petra and the senior keepers do the orphan round, checking on all animals in short term rehabilitation or that have been flagged for particular attention. An endemic Green Rosella (*Platycercus caledonicus*) has arrived after flying into a glass window. Petra handles the bird gently, spreading each wing and checking for fractures, swelling or visible trauma. It is moving well and an X-ray before arrival at Bonorong showed no obvious injuries, but Petra is cautious. She has seen several of these greenies in a similar condition recently and all declined suddenly. She decides to keep this bird under observation for a couple of days.

Meanwhile, head keeper Monique heads towards Bonorong's seabird pool to feed an Australasian Gannet (*Morus serrator*) which was found wrapped in fishing line and embedded with hooks. After initial treatment by a vet to remove the hooks, the gannet was brought to Bonorong where keepers will ensure that it regains body condition before release. Within minutes Monique catches the bird, weighs it and records the figure, slips three large fish in succession into its open beak, releases it again, and heads towards the exit. The bird is nonchalant, giving its tail feathers a quick preen before waddling towards the pool.

Tasmania's coastlines host a rich variety of seabirds. However, threats such as entanglement in fishing lines, swallowing of marine debris, and attacks by dogs and cats mean that large

Tasmania's endemic Green Rosella, with a possible concussion, being tube fed.

The Tasmanian Pademelon is common in the state but is now extinct on mainland Australia due to predation by foxes and large scale land clearance.
Photo: Mike Calder & Tourism Tasmania



Small backwards-pointing serrations in the bill of the Australasian Gannet assist to keep hold of slippery prey of fish and squid, but they also make getting rid of debris like fishing line and hooks difficult.

numbers of injured seabirds are found each year. Access to a pool is often crucial to their successful rehabilitation, by strengthening muscles through "aqua-aerobics" and by stimulating preening and re-waterproofing. Only two seabird pools exist in Tasmania, with one hosted by Bonorong and the other at the home of a veteran wildlife carer.

Zig-zagging across the Sanctuary, Monique must assess a pademelon brought in late the night before after being reported as looking lethargic. Contrary to the report, the marsupial moves quickly and proves difficult to catch. But it is soon in a hessian sack and Monique begins her assessment – weigh, check body condition, feel feet and limbs for injury, look inside the mouth for wounds that might prevent feeding. Everything looks normal and as Monique opens the sack again, the pademelon bounds out into the enclosure, heading towards a corner far from us. This animal is evidently healthy and Monique will recommend that it be released.

Unusually hot weather resulted in three Little Penguins being treated for dehydration.

Echidnas often arrive with injuries from dog attacks and require surgery, antibiotics and ongoing care in order to recover.

10AM

On my way around the Sanctuary, I pop in to say hello to Paul who is rostered to answer the rescue phone for the morning. For the thousands of people who find an injured or orphaned animal in Tasmania each year, the Bonorong Wildlife Rescue Service offers a 24/7 source of advice and support. The Rescue Service manages a state-wide network of volunteers to provide transport for animals to veterinarians, sanctuaries and wildlife carers. This has been an enormous success, with tens of thousands of animals, including a number of endemic and endangered species, being given a chance at treatment and re-release. Paul is on the phone when I find him, receiving a report of an unwell pademelon in the middle of the state. He enters the information into a database and then sends a bulk text to the hundreds of registered rescuers who might offer to catch and transport the animal.

This is one of the most stressful roles at Bonorong with staff required to manage sometimes distressing calls, such as a pademelon shot with an arrow and left on a beach, or a majestic Wedge-tailed Eagle (*Aquila audax fleayi*) riddled with shotgun pellets. Rescues in remote regions may require staff to organise more than one volunteer to transport the animal over multiple stages, setting up carefully-coordinated rendezvous points. Busy days might see 40 rescues between 9am and 5pm, with another staff member rostered to answer the phone overnight. It is emotionally draining, but a commitment to improving conditions for wildlife drives the staff on.

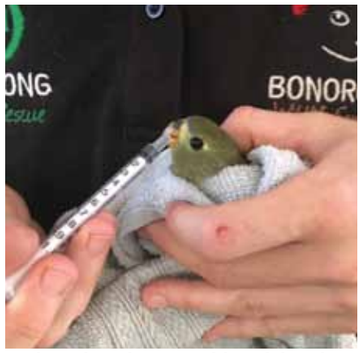
12PM

In January 2018, Bonorong opened Tasmania's first wildlife hospital, which now operates two days per week to provide free veterinary services to wildlife and their carers. While many traditional veterinary clinics donate their time to treat wildlife, they cannot make them their sole focus and most do not have the facilities to house or test the health of wildlife appropriately. Native wildlife become highly stressed by the sight, smell and sound of domestic animals like cats and dogs in the same clinic, and succumb to this stress very easily – an extra obstacle to their recovery.

In the couple of weeks since it opened, the hospital has not been short of patients, including a Spotted-tail Quoll (*Dasyurus maculatus*) found covered in engine oil after breaking into a backyard shed. The feisty animal required sedation before it could be thoroughly bathed and examined.

Two 10-month old Tasmanian Devils surprise vet Alex by displaying what he suspects are cataracts in their eyes – a rare condition in such young animals. The devils are admitted to Bonorong for further investigation. A Tiger Snake (*Notechis scutatus*) carrying a large wound on its back was brought in by a reptile carer who, after securing its head in a protective sheath, held the snake with steady hands so that Alex could clean and dress the injury. Several days of unusually hot weather in January resulted in three Little Penguins (*Eudyptula minor*) being treated for dehydration before they could be rereleased. A Short-beaked Echidna (*Tachyglossus aculeatus*) found after a dog attack needed antibiotics and surgery to clean and close the multiple puncture wounds. Fishing hooks and line swallowed by a hungry Little Pied Cormorant (*Phalacrocorax melanoleucos*) had embedded deep into its stomach, preventing it from feeding and requiring delicate surgery to remove them. For most of these animals, veterinary treatment and a place to recuperate in peace offers them a chance of survival.

The highly venomous Tiger Snakes have a fearsome reputation, but are more likely to retreat than attack. Tiger Snakes that come through Bonorong have often been attacked by dogs and require surgery and ongoing care.



A Blue-winged Parrot with an injured wing sips pain relief through a syringe.

Like many raptors, the Brown Falcon will swoop feet first and use its talons to grasp prey, but it lacks a strong clutching ability and instead uses specialised teeth on the beak to sever the spine of its prey. This means that keepers working with this species must be careful of sharp claws as well as strong beaks!

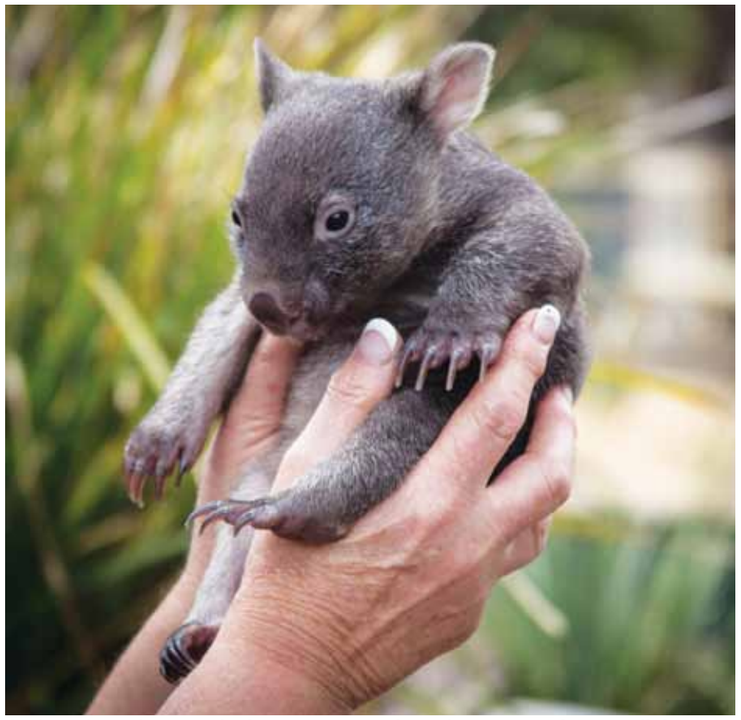
2PM

On the afternoon orphan round, I join Monique and senior keeper Melissa in the "nursery" as they treat the animals there. Often, one holds the animal while the other feeds and medicates. The Green Rosella assessed this morning is not eating well and requires crop feeding through a tube. A tiny Blue-winged Parrot (*Neophema chrysostoma*) with an injured wing cooperatively sips pain

relief through a syringe, but an even tinier Silvereye (*Zosterops lateralis*) is too small for the crop feeder brought for it and Melissa must run and find a thinner tube. Once she returns, Melissa holds a Brown Falcon (*Falco berigora*) brought in with a possible head injury, while Monique opens its sharp snapping beak to offer medication. These women are powerhouses of energy and fly through the treatments quickly, before packing up and heading off to their next tasks.

In the Sanctuary I come across wildlife carer Linda bottle feeding one of the young Common Wombats (*Vombatus ursinus*). Linda specialises in raising this endearing species and regularly has very young wombats living in her home where they sleep in playpens next to her bed and enjoy chewing on her wooden furniture.

Once older, the wombats are transitioned to an outside enclosure at Bonorong. But if they are still on bottled formula, Linda makes the short trip to Bonorong several times a day. While her commitment to the work is unwavering, Linda likens it to having a newborn and readily admits that the sleep deprivation, social restrictions and financial toll can be difficult to manage. Nonetheless, she has been looking after wombat joeys consistently for 10 years and shows no sign of retiring.



Orphaned wombats require between 18 months and two years of care until they are able to live independently in the wild.

3PM

Back in the office, I have time to focus on my own work. Bonorong hosts a captive breeding facility for the Tasmanian Tree Frog (*Litoria burrowsae*), a species thought to be highly susceptible to the fungal infection chytridiomycosis which has caused the decline of hundreds of amphibian populations worldwide. These facilities are in the process of being expanded, with plans for a large aquarium of post-breeding frogs to be on public display alongside information about the programme. I liaise with the three companies responsible for construction, crating and transport of the new aquarium, a task made difficult by its sheer size.

Bonorong is increasingly communicating its messages outside the Sanctuary and there are several projects underway. We are about to launch a state-wide roadkill-prevention social media campaign and the final images and text must be proofed. Collisions with cars account for over 30% of the injured animals that come to Bonorong and this campaign is an important tool to educate drivers on ways they can help reduce this.

6PM

Some animals are in care for an extended period, of months or even years, before they are ready to be released. A Snares Penguin (*Eudyptes robustus*) found after a dog attack in southern Tasmania in 2014 remained at Bonorong for nine months until she underwent her moulting cycle and was able to regrow a layer of waterproof feathers over the wound site. Orphaned wombats require between 18 months and two years of care until they are able to live independently in the wild. The sustained effort involved in caring for these animals is offset by the magical moments when they can be released.

So it is a welcome end to the day when I place the energetic pademelon from this morning, safely contained in a sack and ventilated tub, into my car for the short drive to freedom. At bushland on the outskirts of Hobart, I open the hessian sack and expect her to disappear immediately but she stops a few metres away and turns towards me, nodding her head for a minute before bounding away into the undergrowth.

***Grace Heathcote** has worked for Bonorong since 2012 In her spare time, she is a freelance writer. She has been published by the likes of* The Guardian, Journeys *magazine and peer-reviewed journal* Conservation Biology.

"If we don't have it here, it's a good thing. Unfortunately, we are never short of animals.

—GREG IRONS
Owner, Bonorong Wildlife Sanctuary

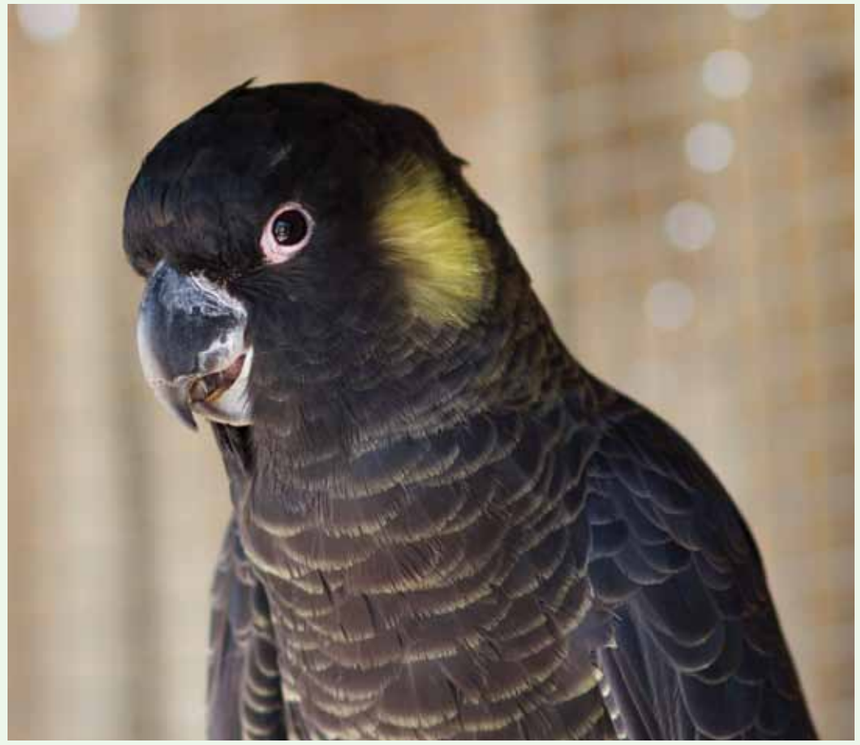
Text by **Gemma Koh**

UNLIKE zoos, Bonorong does not aim to be a showcase of animal diversity. Its permanent residents make up less than 1% of the animals that the social enterprise helps. They are the ones that have injuries or feeding issues that mean they would not survive on their own, so they cannot be released like the others back into the wild.

Small group or private tours – available during the day or at night – are led by Greg or a senior keeper and give visitors the opportunity to enter the enclosures and interact with the animals, but at their instigation and on their terms. Being up close with the wildlife is a unique learning experience, enhanced by the quirky personalities of many of the animals and the chemistry and affection between their human carers and them. Amid the cheer and laughter, Greg and the keepers slip in messages on animal conservation and welfare. Or things the public could do to help, like driving slower at night to minimise the risk of hitting an animal.

"We are very lucky in Tassie. We haven't got to a point where we can't fix things. When people understand the reasons, they are generally good at wanting to help," says Greg, but not without delivering his typical punch of humour. "Otherwise I threaten them with a Tasmanian Devil."

Visitor fees go towards Bonorong's 24-hour wildlife rescue service and its hospital for wildlife. **bonorong.com.au**



Buzzard the Yellow-tailed Black Cockatoo (right, *Calyptorhynchus funereus*) was found at Mt Field National Park, abandoned by his parents. These parrots need to be taught by their parents to feed. And in their absence, it took Greg and team 1.5 years to teach Buzzard. At one stage, it involved tube feeding four times a day, with one person holding him down, and another inserting the tube down him. As he's not with a flock, he will have less than 5% chance of survival in the wild. We witnessed the 3.5-year-old Buzzard attempting to mate with a female estimated to be in her 30s or 40s.

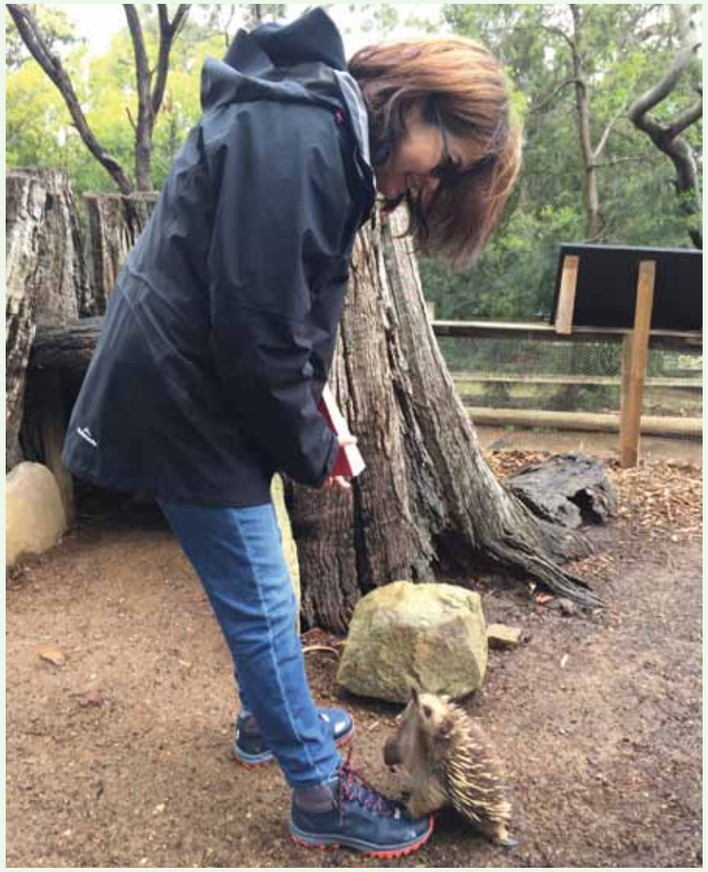


Photo: Gemma Koh

Randall the Short-beaked Echidna (*Tachyglossus aculeatus*) with three legs (the result of a dog attack) bounds over to Greg's foot and looks up at him. "They do not usually like to look up at you because that's when they are vulnerable," Greg explains of the monotreme. Soon Randall comes over and gives me the same look (above), and allows me to feel his spines which are modified hair (they are hard, but not thorny like durians).

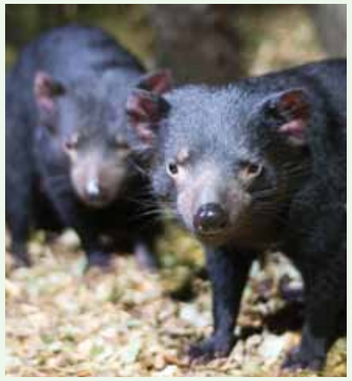
"I have never met an echidna like him," says Greg. "People often forget that animals have different personalities."

Randall would not be able to survive in the wild with three legs. "When they are threatened, they have to quickly burrow, digging straight down. So if a dog were after him, he'd never be able to dig. He'd just flip on one side."

Photo: Gemma Koh

Kangaroos live and travel as a group, and so they are released back into the wild in a troop of about 10 at a time. The mob of Forester Kangaroos (*Macropus giganteus*) is about 115 strong when I visit. The star is Oolah. She was thought to have been separated from her mum in a storm one night. None of the female roos at Bonorong would accept her, so she was handraised by the keeper who found her cold and wet at the Sanctuary. From being at death's door, she has grown into a lively creature whose exploits include stealing a mouthful of teabags.

As the kangaroos eat out of our hands, Greg demonstrates how to scratch them on their chests as they lean back in pleasure. Patting them on their backs is saying "go away".



Betty is a 7-year-old Tasmanian Devil who is near the tail end of the life span of a captive devil. In the wild, they live to about five years of age. Signs of her age include white whiskers and a mange-y looking tail (where devils store their extra fat).

Tasmanian Devils (the largest extant carnivorous marsupials) are often misunderstood; they are often shown in the media with mouths open, screaming like a banshee, devouring bones and all from a carcass, giving the impression of a dangerous animal who hunts in packs. Truth is, when you get over how vicious the scene appears, devils are extremely shy scavengers, and there are no confirmed reports of attacks on a person in the wild.

"Two devils fighting do open their mouths very wide and yell, hiss and bark," says Greg. "But when they get to the point of contact, they hit with an open mouth, like two drunk blokes in a pub pushing each other around without any intention of throwing a punch." It is a dominance thing and it is the females who are the bosses even though they are smaller.

If they were biting each other, they would be killing each other, given their jaw strength. A devil is able to polish off every single bit (including bones) of a fully-grown wombat or wallaby except for the top of the skulls which they are unable to get their mouths around.

As is well-known, in recent years their numbers have been decimated by the contagious Devil Facial Tumour Disease. Bonorong supports the national programme to save the devils by breeding them, rescuing the injured, providing blood samples or bone marrow for research, and through education.

Bonorong's retirement village for devils who were used to breed the insurance population is in the process of winding down. The national devil programme has recently changed its focus to releasing healthy, immunised devils into various parts of the state.

Because the devils are so elusive, it is unknown if there are 2,000 or 10,000 left in the wild.

More information on Devil Facial Tumour Disease at tassiedevil.com.au

Photo: Poon Wai Nang & Tourism Tasmania

Bonorong's Tawny Frogmouths (*Podargus strigoides*), with their mottled grey feathers blending into the foliage, may seem to be asleep during the day, but they are keeping an eye on things, literally and figuratively: they only have one functioning eye. Tawnies are susceptible to injuries from a knock on the head. When they swoop to grab insects and moths out of the air with their mouths, often it's into the headlights of a car.

With only one seeing eye, depth perception becomes an issue. They cannot fly – an important skill for their quality of life. The tawnies are handfed everyday as they are not capable of eating from a bowl on the ground.

Their diets comprise meatballs of mice, rabbit or chicken, and occasionally fish, with a bit of egg, enhanced with an insectivore mix (to make up for the nutrients from insects and dirt).

The birds are obviously comfortable at Bonorong, for two pairs have bred there. Their babies were released into the wild. According to Greg, tawnies build flimsy nests. "They pick up some sticks and put them in a pile, usually where a branch meets the trunk, or sometimes in a shallow hollow."

Schedule a night tour to see the tawnies and fellow nocturnals like Tasmanian Devils, Eastern Quolls and Tasmanian Bettongs.

"I thought it would be hard for me seeing animals go back into the wild when you've looked after them for so long. But it is the best part."

Judy the Common Wombat (*Vombatus ursinus*; pictured with Greg) was "the size of an orange" when she was brought in to Bonorong after her mum was hit by a car. It is hard to believe that the gentle 17kg 2-year-old that Greg cuddles is showing signs of turning – like a teenager asserting her independence. "What she will do with her mum in the wild is to attack her. And we're her mum so she'll do the same to us," says Greg. That means head butting, biting, clawing. "Most of our scars are from wombats," he shares. The keepers are not seeing so much of her during the day as she becomes more nocturnal.

There are wombats who have turned overnight, but Greg predicts that Judy would take about two months to fully turn. She still alternates between attacking her keepers, and wanting a cuddle.

"Suddenly one day she'll start going [makes tsk tsk snorting noises]. When she fully turns, your strongest, toughest wildlife keeper will be running. When she starts treating us like a predator, that's when we know she's good to go." Wombats are the most successful marsupials that Bonorong raises and releases. And they do well in the wild.

"I thought it would be hard for me seeing animals go back into the wild when you've looked after them for so long. But it is the best part. You can see 20 animals in the cage, but when they are in the wild, they are certainly more beautiful. It validates what we are trying to do. You don't know how they're going to go when they are released, but they have their chance. That's what they were born to do."

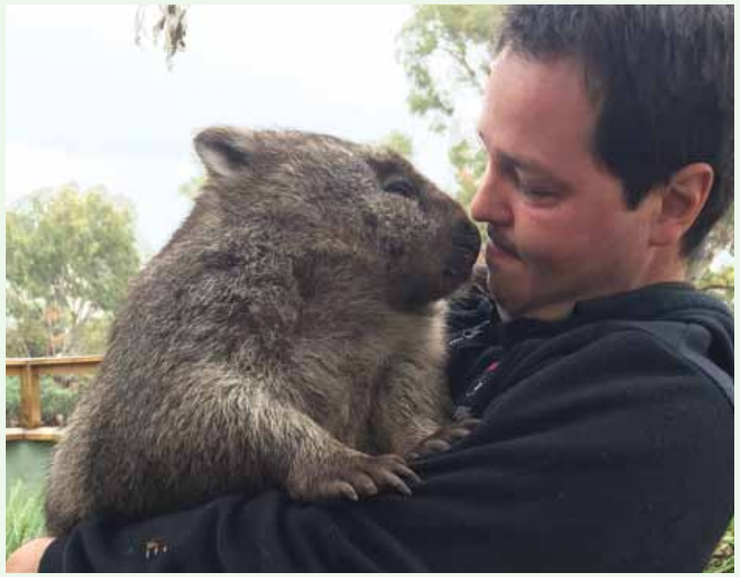


Photo: Gemma Koh