Despite the Tasmanian devil's fierce reputation, in reality it has a cautious disposition. The Bonorong Wildlife Sanctuary, where this photo was taken, is a rehabilitation centre that aims to change perceptions of the world's largest carnivorous marsupial.

Photos by **Suzi Eszterhas**

BETTER THE DEVIL YOU KNOW

The real Tasmanian devil has an extraordinary biology and is surprisingly shy, unlike the popular cartoon character. But as **James Fair** discovers, attitudes are at last changing.

"People are definitely confused by devils," says Greg Irons, owner and manager of Bonorong Wildlife Sanctuary just outside Tasmania's state capital Hobart. "I've been asked: 'Are they related to pigs? Are they rodents?'" He pauses, perhaps not wanting to be too harsh. "Look, we see a lion and we immediately know it's a cat. But trying to suss out a devil – that's hard."

If anything, they remind me of a bull terrier with a slightly ratty face. But, of course, they're none of these things – they're carnivorous marsupials and, as with other members of this group, including the better-known kangaroos and wallabies, some aspects of their biology almost defy belief.

"You start telling people that they started life as something the size of a grain of rice, they grew up in a pouch, they were technically joeys – that really creates conflict in their heads," Greg says. "To most people, a marsupial is something with big feet that goes boing. And then you tell them the pouch faces backwards..."

As with many marsupials, the story of the initial phase of a devil's life history bears repetition. A female devil gives birth to 20–40 'super-foetal' babies, each weighing just 0.2g – that's less than half the mass of a paracetamol tablet. They immediately enter a life-or-death race in which their survival odds are as low as 10 per cent, because there's only room for four in the pouch. The winners fuse themselves to a teat, and there they stay for the next five months or so.

And that backward-facing pouch? Unlike kangaroos and wallabies, devils get about on four legs, and having the pouch rotated by 180° stops the joeys inside getting bombarded with sticks or dirt that their mothers run into on their nocturnal wanderings in search of dinner. Wombats (and other non-hopping marsupials) employ the same system.

Bonorong is a sanctuary for injured or orphaned native species with a recently opened wildlife hospital where it can carry all range of operations that can even be watched by the public from a special viewing deck. Greg started working as a wildlife keeper in 2003, then bought the place in 2009, changing the ethos to one of conservation and wildlife rescue in the process.

It has a team of up to 500 volunteer wildlife rescuers who responded to 7,426 calls for help last year. "They see a lot of animals that have been hit by cars," Greg says. "A lot of animals in distress, a lot of broken bones. Some animals have to be put down, and it can be very emotional. I remember a bandicoot that was brought in that had basically been disabled in its back legs – that wasn't pleasant to deal with."

SYMPATHY FOR THE DEVIL

Devils are especially vulnerable to vehicle collisions, because they are attracted to all the other roadkill. "We've had one that had to have its leg amputated, another with a very bad head injury. Neither of them could have survived in the wild, so we keep them here. It's like a big retirement village for devils, but if they are capable of breeding, we let them."

I still vividly remember the first time I saw a Tasmanian devil in the flesh some two decades ago. I was sitting in a makeshift hide in the remote north-west of the island. Having been inside for two hours in the company of expert Simon Plowright – who today runs a devil breeding centre near Bicheno on Tasmania's east coast, and still organises trips to see wild devils – I was seriously beginning to doubt that 'tonight would be the night'.

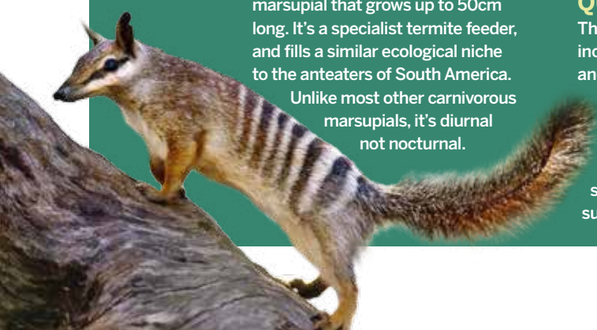
The pegged-out wallaby carcass – the tried and tested method of running a 'devil restaurant' – had been visited by a beautiful tiger, or spotted-tailed, quoll, which is a smaller relative of the devil. But when the first devil turned up there was a tangible change of mood in the tent. This is it, I was thinking – *this* is what I've come to the other side of the world for!

The young female devil didn't tear into the offering like a hungry hyena on steroids, or snarl as if possessed by the Prince of Darkness (which is where the species' get its common name). Instead, she sniffed the cold night air and looked around nervously, and only when she was completely happy that there was no one else about did she tuck in. Some time later, another devil showed up and there was a ▶

Left to right: Frans Lanting/Mint Images/Getty; Martin Willis/Minden/FLPA; Chris Mattison/FLPA; Dave Watts/NPL; Auscape/ardea.com; Dave Watts/NPL

MEAT-EATING MARSUPIALS

There are plenty of other predatory marsupials in Australia, besides the devil.



NUMBAT *MYRMECOBIUS FASCIATUS*
The sole member of its genus, the numbat is a medium-sized, stripy marsupial that grows up to 50cm long. It's a specialist termite feeder, and fills a similar ecological niche to the anteaters of South America. Unlike most other carnivorous marsupials, it's diurnal not nocturnal.

QUOLLS *DASYURUS*
There are six species of quoll, including two found in Tasmania and two unique to New Guinea. The spotted-tailed quoll is the largest of the six, with males weighing up to 7kg and measuring up to 1m long (including the tail). Quolls fill a similar niche to European mustelids such as martens and stoats.

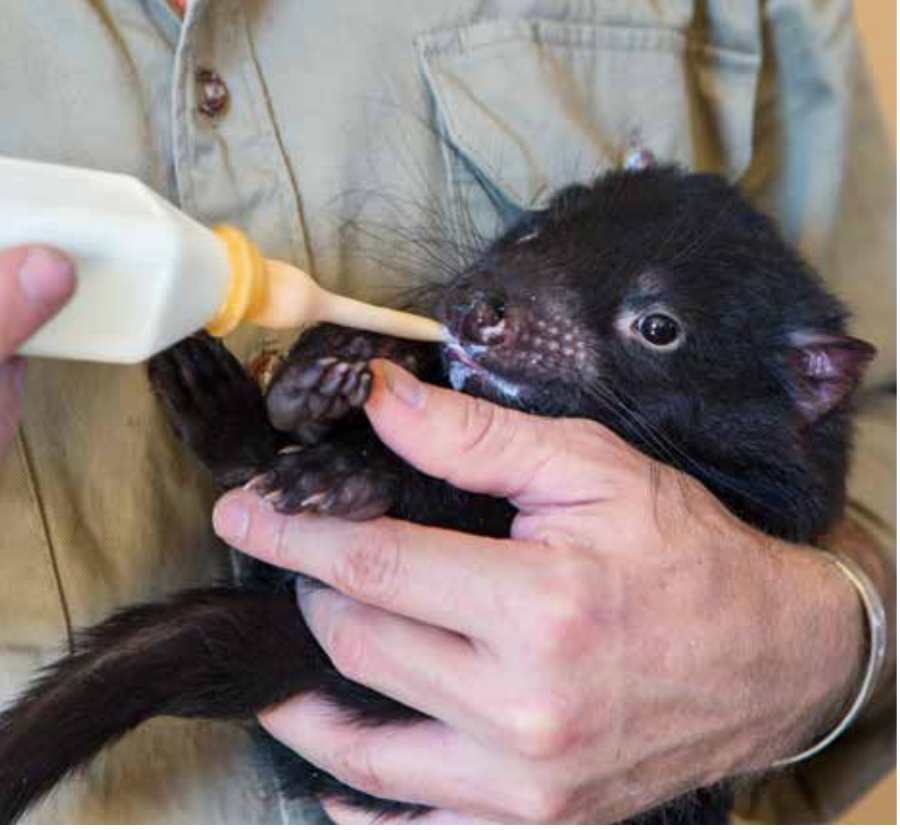
ANTECHINUSES *ANTECHINUS*
These small, long-tailed insectivorous marsupials are renowned for a strange biological trait in which the (mainly) males starve themselves to death in order to breed. There are at least 10 species. They feed mostly on small invertebrates, and fill a niche similar to European insectivores such as shrews and hedgehogs.

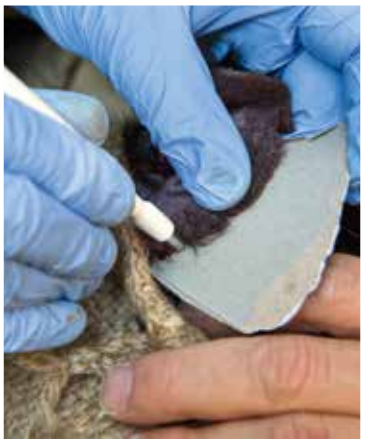
DUNNARTS *SMINTHOPSIS*
There are 21 species of dunnart, which tend to be similar in appearance and behaviour to the antechinuses, but with larger ears and eyes and slightly pointier noses. They too prey largely on invertebrates. The white-footed dunnart is confined to Tasmania and the extreme south-east coast of mainland Australia.

MARSUPIAL MOLES *NOTORYCTES*
As their common name suggests, marsupial moles spend most of their lives underground. There are two species (northern and southern), but unlike the moles found in Europe, they inhabit sand dunes. Ants, termites and beetle larvae make up most of their diet, but they will also tackle lizards.

THYLACINE *THYLACINUS*
There are six known species of the *Thylacinus* genus, but only the one known as the Tasmanian tiger still survived by the time humans had evolved. Though they are similar in appearance to dogs, there is no suggestion they lived in packs, and some evidence they were more similar in behaviour to ambush hunters.

Tasmania's Bonorong Wildlife Sanctuary has been rescuing injured and orphaned native species for many years. Here, director Greg Irons feeds kangaroo meat to two devils.





brief confrontation. But on that showing, they might just as well have been called angels as devils.

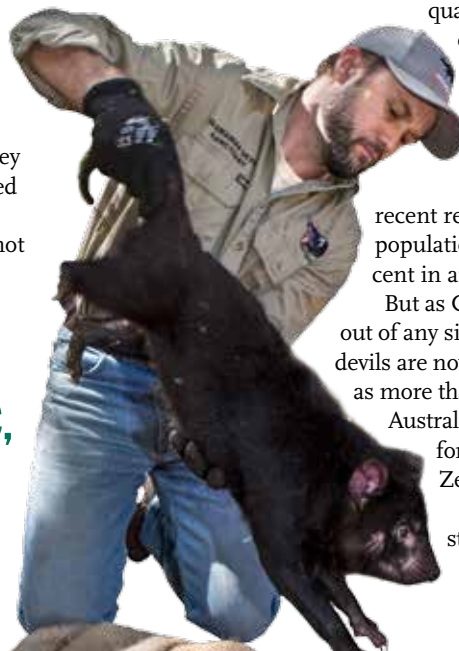
"Their reputation is not what they are," confirms Wade Anthony, who owns Devils@Cradle, a breeding centre for native Tasmanian carnivorous marsupials in the north of Tasmania. "That comes from the cartoon character Taz, which has got a lot to answer for." Taz was created by Warner Bros in the 1960s, though later found fame in the 1990s.

TERRIBLE TABLE MANNERS

Having said that, devil feedings can be famously noisy, especially if you get more than two or three trying to feed on a single carcass. Geoff King, who used to run a Michelin-starred devil restaurant on his coastal property near Marrawah, also in Tasmania's north-west, until his untimely death in 2013, once told me he'd seen 13 on a single carcass. His 'feedings' were enlivened by a live audio feed to the hide that relayed not just their edgy vocalisations, but the sound of bones crunching and sinews tearing as they chowed down dinner.

"The quiet side of devils is very interesting," says Wade. "They're all individuals, you can't pigeon-hole them. Some are very confident, some aggressive, some can be curious, some can be shy. The problem is their gruff voice, which makes them all sound antagonistic, but they don't have any other way to talk." He's also noticed that sibling devils at his centre maintain a close relationship throughout their lives, so they may not be purely solitary as usually depicted.

Above left: Wade Anthony, managing director of Devils@Cradle breeding centre, feeds a four-month-old devil. Above right: a devil undergoes a pre-release health check. Below: Wade releases a devil into the wild.



"THEIR GRUFF VOICE MAKES THEM SOUND ANTAGONISTIC, BUT THEY DON'T HAVE ANY OTHER WAY TO TALK."

Since opening for business in 2006, Devils@Cradle has become one of the 30 or so centres involved in breeding devils as an insurance population to safeguard against extinction. It has about 50 devils, including nine pairs – when I speak to Wade in mid-February, it's the middle of the breeding season, and once the females are pregnant, they give birth to their tiny babies just three weeks later.

ISLAND REFUGE

Though devils were once widespread across mainland Australia (there's even fossil evidence for them in New Guinea), they disappeared from everywhere but Tasmania long before European settlers arrived. This was probably down to increasing aridity on the mainland and competition from non-native dingos, scientists say.

On the 'island off the island', however, they thrived, at least until the first half of the 20th century when conflict with livestock and poultry farmers turned them into pests. But, of course, most persecution was concentrated on the larger Tasmanian tiger, which was hunted to extinction.

Nevertheless, the Tasmanian devil was a largely unknown quantity until 1996, when a contagious cancer called Devil Facial Tumour Disease (DFTD) was first discovered. Where it came from nobody knows, but it spread through the population like a bushfire – numbers dropped from an estimated 250,000 to fewer than 50,000 in 2009. The most recent research, published in February, shows populations have declined by an average of 77 per cent in areas affected by DFTD.

But as Greg Irons points out, you can "take a positive out of any situation – thanks to the disease, Tasmanian devils are now known all over the world." Indeed, as well as more than 30 captive-breeding centres throughout Australia – there's at least one in every state except for Northern Territory – there are three in New Zealand and two in the USA.

But it's been the response in their home state that Greg has found most hopeful. ▶

The Tasmanian devil is robustly built, with a thick tail, broad head and powerful jaws capable of crushing large bones.

THE DEVIL IS IN THE DETAIL

Tasmania is a haven for wildlife, including some species that died out on mainland Australia.

2 The number of endemic mammals found in Tasmania – the Tasmanian devil is one, of course, and the other is the Tasmanian pademelon, a species of wallaby that went extinct on mainland Australia in the 1920s.

12 The island's haul of endemic bird species, including a parrot, the green rosella, and a relative of Eurasia's moorhen, the Tasmanian native hen.

33 The total number of terrestrial mammals native to Tasmania. One is the probably extinct thylacine. The rest include eight carnivorous marsupials, five species of macropod, eight species of bat and five rodents.

Though some people still care little for this iconic Tasmanian species, many others have become aware of the risks it faces and what they can do to help. "People go, 'That's a pretty special animal, I want to make sure I'm not making the situation worse,'" he says. "That's where our role at Bonorong is so important. We get 110,000 people coming through our gates every year, and we are teaching them how to be rangers in their own back yard."

ROADKILL DANGERS

The state-run Save the Tasmanian Devil programme receives government money, but it is also reliant on public donations. Some of the most exciting research is going into finding a vaccine that would immunise devils against the cancer, though that is still a long way off.

The public can help in other ways, Greg points out. "It's about how we can live alongside devils," he says. "Cars are the big issue, because of that fact that devils scavenge roadkill." Research published in 2008 showed that at least 160,000 mammals are killed on Tasmania's roads every year. The total death toll – including birds – was 300,000, which is double the mortality rate in the rest of Australia.

The scientist behind the research, Alistair Hobday, even calculated the safe speed for drivers in order to give themselves time to brake. "For our really valuable species like Tasmanian devils, it's actually a speed of 50kph at night that's really appropriate," he told a Tasmanian TV programme in 2011.

Despite their fierce reputation, devils are also vulnerable to attack from domestic dogs, which are more naturally aggressive and can run rings around the relatively slow-moving marsupials. Finally, devils can suffer the unintentional consequences of poisons put out for rats or other pests. "It's about awareness," says Greg. "In our view, every life counts, and we try to get this message through to both locals and tourists."

EDUCATING THE PUBLIC

Wade Anthony also believes attitudes have changed. "There used to be quite a bit of persecution here," he says. "When numbers were at their highest, you might have had three or four devils coming through your farm at night and harassing poultry. But they're really more of a scavenger, and people are beginning to understand that."

And that importance isn't just about cleaning up the corpses of wallabies and wombats that would otherwise litter the landscape – they are also an effective line of defence against non-native feral cats and red foxes, in turn benefiting small native marsupials such as bandicoots, bettongs and potoroos. Encouragingly, foxes have not been detected in Tasmania since 2011, but it will probably require the continued presence of the devils to keep things that way.

"At least this has happened to devils at a time when some people care about wildlife," points out Greg Irons. "When Tasmanian tigers were under threat, no one cared, and they went extinct." But he acknowledges that there's still a lot to do.

"We've got all these amazing animals here, but most of us couldn't identify them," says Greg. "Every kid in Tasmania knows what a tiger or a dinosaur is, but not cherished species such as devils." But thanks to his and Wade Anthony's tireless efforts, that picture is changing. Children might even be able to tell you about a baby the size of a grain of rice and that backward-facing pouch.

FIND OUT MORE

Learn more at **www.bonorong.com.au** and **www.tassiedevil.com.au**

JAMES FAIR is *BBC Wildlife*'s environment editor. This month he also writes about following the arrival of spring on a bike (see p32).