

# The strangest bird in the forest

Deep in the Australian rainforest, the cassowary challenges all our preconceptions of what it is to be a bird: it can't fly, it plays like a mammal and its sexes have swapped roles. **BIANCA KEELEY** just had to find out more.

**MIDDAY IN** the Australian rainforest has a certain stillness about it. The early morning cacophony of birds and the bustle of small, ground-dwelling animals have died down, and only the constant hum of cicadas remains. Ahead, in a small clearing, I spot her: a blazing, multicoloured neck flashes in the sunlight, and a large, helmet-like casque protrudes from her head. She is taller than me – an imposing creature with a primeval stare – and she is spectacular. She is a southern cassowary.

But we are not alone in this ancient coastal rainforest in north-east Queensland. A slow rhythmic crunching of footsteps gets louder as another of these prehistoric-looking birds emerges. This one is similar in looks to the first but much smaller, and it approaches warily. This is the male of the species. With no warning and lightning speed, the female charges at the newcomer. "Thwack!" The sound echoes through the forest as she slams into him with her breastplate. It's such a powerful blow that he's knocked off his feet. There's a scrum of flying feathers, scaly legs and sharp claws. Then, to my horror, the female repeatedly jumps up and down on top of the male, flexing her lethal, 12cm-long

innermost toes that are more akin to daggers. Stomp, slash, stomp. She continues until the male somehow struggles out from beneath her. Crashing through the trees, he flees.

But within minutes of receiving the hiding of his life, he returns, apparently unscathed, to try his luck again. He is, after all, a male, and it is the breeding season. He's determined to mate with this whirlwind of fury, but he's even more cautious second time around.

Cassowaries are solitary creatures and keep to their own territories, which can cover 0.5–5km<sup>2</sup>. Though their home ranges overlap, the birds manage to keep out of each other's way most of the time. But fights over food and space are inevitable. Local vet Graham Lauridsen recalls, "We once found a dead cassowary with 25 puncture wounds that had been inflicted by another bird!"

#### DID YOU KNOW?

Though cassowaries weigh up to 80kg, they can swim across rivers and run at up to 40kmph. They also forage up to 6km a day.

#### DISTANT RELATIONS

The cassowary breeding season runs from May to October, and this is the only time the larger female will allow a male anywhere near her. My feisty female eventually accepts her brave suitor after he has made several more careful overtures – he's lucky to have avoided serious injury. The pair court and mate over the next month, but spend much of their time foraging for rainforest fruits, as well as a few insects and lizards. Though mainly frugivorous, these opportunists also have a bloodthirsty side and have been known to pick at roadkill kangaroo and even swallow dead bats and spiny echidnas.

The female lays a clutch of four to six giant, bright-green eggs in a scrape on the forest

Cassowary eggs are huge – 16cm long and weighing up to 600g (the equivalent of 10 chicken eggs). Only ostrich and emu eggs are larger.

floor, but then her work is done. Gender roles are reversed in the cassowary kingdom – the female heads off to find another suitor (she can mate with up to four males in one season) – while the male becomes a single parent for the next 9 to 12 months.

**To my horror, the female repeatedly jumps up and down on the male, using her toes like lethal daggers.**

His first job is to incubate the eggs, which takes 50 days. He rarely leaves the nest and will lose a third of his body weight as he protects his clutch from predators. Snakes, monitor lizards and feral pigs are always on the lookout for a high-protein meal of cassowary eggs or hatchlings.

Eventually, four of the eggs hatch into tiny, stripy chicks. They can already forage for themselves, though they do need their dad's guidance on what to eat and what to avoid. He teaches them by clacking his beak together to get their attention. The siblings then make a mad dash for the fruit he is mashing in his beak.

Within weeks, the chick's personalities are starting to emerge. The smallest is the bravest, and the first to take a dip with his father in a muddy pond to keep cool and freshen up his feathers. Another chick is endlessly curious, easily distracted and often scolded by the male for lagging behind.

#### THE TRIALS OF FATHERHOOD

"Boog, boog, boog." A low call rumbles through the forest. It's an unnerving sound that I feel reverberating in my chest ▶





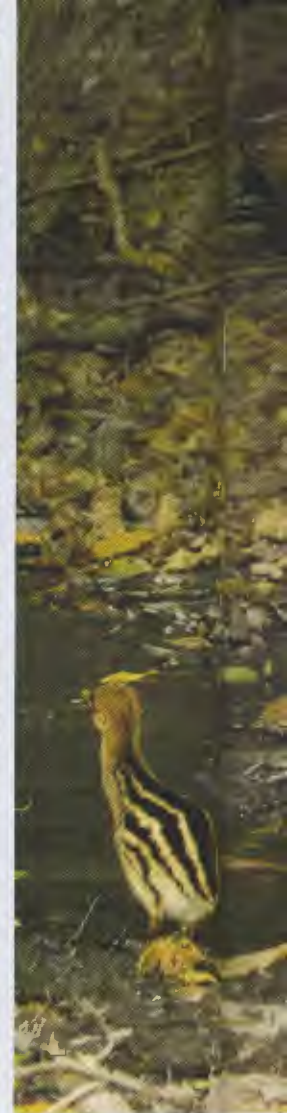
A large, helmet-like casque protrudes from the cassowary's head. She is an imposing creature with a primeval stare.

The startling crest - or casque - on the cassowary's head is formed from a foam-like cellular structure covered in keratin. The naked skin around the bird's neck is bright blue, while the two wattles that dangle from the throat (out of view) are a vivid red.





The multitude of rainforest plants provide rich pickings for the cassowary, as it gleans berries from bushes and picks up fallen fruit from the forest floor



## MEET THE CASSOWARIES

Three species of cassowary are found in Australasia.

### » SOUTHERN CASSOWARY

**Range:** Australia and New Guinea.  
**Height:** 1.5–2m; **weight:** 35–80kg.  
**Key features:** Blade-like casque; featherless face and neck with bright blue skin, red at nape.

### » NORTHERN CASSOWARY

**Range:** northern New Guinea.  
**Height:** 1.5m; **weight:** approx 37kg.  
**Key features:** Casque more flared than that of southern cassowary; blue skin on face; throat skin and wattle either red or golden.

### » DWARF CASSOWARY

**Range:** New Guinea.  
**Height:** 1–1.1m; **weight:** approx 18kg.  
**Key features:** Smallest and most colourful of the cassowaries; the only cassowary without wattles, but with bright pink spots on cheeks.



more than I hear. Cassowary calls are a very low frequency, mostly outside the range of human hearing. It's thought that these sonorous sounds help the birds to communicate over long distances through dense forest. This particular one signals that someone has invaded the family's territory.

A female duly appears, looking threatening. The male sits submissively on the ground, emitting soft mewing calls. The naive chicks, however, run towards the intruder – perhaps all cassowary legs look alike to them – and I hold my breath. The female stretches up to her full height, displeasure obvious. They could even be her chicks, but in her eyes the family is consuming food that she had earmarked for herself.

Instead of charging into battle, the father fluffs his tail feathers high up into the air and the chicks scurry to take refuge underneath. He drops his tail and the youngsters are nowhere to be seen. But the female is far from appeased and continues her antagonistic behaviour. The male has no choice but to beat a hasty retreat with his family.

After 3–4 months,

the chicks begin to lose the stripes that camouflaged them so well against the leaf litter, developing dull brown plumage. As they grow older, they also start to test their independence. When the chicks are nine months old, I watch them sneak away from their father and head for the swamp. It starts to rain and the youngsters chase each other, tearing around their watery playground, engaging in mock fights and jumping high in the air with crazy twists. They seem to be simply enjoying themselves and, amazingly, are behaving more like a group of mammals than big, bizarre birds.

### INTO THE UNKNOWN

But is there something more serious behind their games? Would a female cassowary really harm young chicks? And why do so few juvenile cassowaries reach adulthood?

There are many questions still to be answered about these mysterious birds, and time is running out. In Australia, there could be as few as 1,500

Roads bisect the cassowary's forest home – with sad but predictable results.







Four young chicks gather in the protective shadow of their father. When these birds get too close to suburbia, cars and dogs pose the greatest threats to their survival.

Bianca Keeley/BK Films

southern cassowaries left in the wild, and scientists urgently need to learn more about their ecology and biology if they're going to be able to protect them.

An ambitious new study analysing cassowary DNA may provide valuable insights. Rainforest ecologist Dr David Westcott from the Commonwealth Scientific and Research Organisation studies the vital role these birds play in the dispersal of plants throughout the rainforest, and has recorded more than 250 different fruits in their droppings.

But it's only recently that scientists have been able to analyse dung to identify an individual cassowary's DNA. Dr Westcott and his team are piloting a study in rainforests near the town of Mission Beach, Queensland, where they're enlisting the help of the local community as poo collectors – arming them with gloves, plastic bags and GPSs.

"We're trying to find out where individual cassowaries are going, the habitats that they're using, who is related to whom and what their survival rates are," explains Dr Westcott. He plans to expand the study to cover the cassowary's entire range in the future, so that experts can better understand and estimate their populations.

#### DID YOU KNOW?

Cassowaries are members of the Struthioniform order of giant flightless birds, which also includes ostriches, emus and rheas.

#### ABANDONING THE KIDS

Back in the forest, I realise that I haven't seen my cassowary family for several days. But when I finally come across the male all on his own, I know that something has drastically changed: the chicks are nowhere to be seen. They would be 10 months old by now, so it's likely that their father has abandoned them. It's high time for them to begin their own solitary wanderings and become adult cassowaries. As I walk through the forest, I can hear their piercing calls. It's a gut-wrenching sound that gets ever closer. Suddenly, the distressed chicks appear and rush over, circling me and crying. There is nothing I can do; I am not their father.

As they walk away, I realise that this will be the last time I see the siblings together. They now face the biggest challenge of their lives – finding territories of their own. But will there be enough rainforest left?



Cassowaries star in a film by Bianca Keeley for the *Natural World* series. Check *Radio Times* for details.



**BIANCA KEELEY** is an avid naturalist and wildlife film-maker. She's spent the past 10 years having cassowary encounters of the close kind.

## CASSOWARY CRISIS

When a massive cyclone destroyed an important forest refuge for cassowaries, the birds were forced into a nearby town in search of food.

Knock, knock. Who's there?



Jürgen Brandt/epi.com

In Australia, the southern cassowary is found only in pockets of rainforest along the north-east coast, and the species is under constant pressure from habitat loss and fragmentation. Many cassowary populations now find themselves living next door to towns, such as Mission Beach.

On 20 March 2006, things got a lot worse for the birds here. A severe cyclone hit, devastating their forest home. The birds soon had nothing to eat and were forced onto the streets and into people's backyards to raid dog bowls and fruit gardens for food.

But suburbia is a dangerous place for flightless giants, and many were killed by cars and dogs. The hungry birds were also becoming desperate. "If a bird managed to jump up at a person and rake down with its feet, those inner claws could literally unzip them," warns Queensland Parks and Wildlife biologist Scott Sullivan.

In a bid to save the birds and protect the residents, park rangers captured the invading cassowaries and relocated them to forests that had been largely undamaged by the cyclone. But cassowary relocations are difficult – even after a bird is tranquilised, it can take three men to restrain it.

It has taken almost two years for the forest to recover enough to support the birds. Scientists are predicting more severe cyclones due to climate change, a shift that could have a serious impact on an endangered species that is already isolated.

