



Douglas Adams and the world's largest, fattest and least-able-to-fly parrot

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"The system of life on this planet is so astoundingly complex that it was a long time before man even realized that it was a system at all and that it wasn't something that was just there." —Douglas Adams, 1990

Douglas Noel Adams was born on 11 March 1952 in Cambridge, UK, and grew up to become one of geekdom's most revered icons. Adams is the author of... Well, that is pretty obvious and I should not have to write this down, but I will nonetheless, just because I won't be able to sleep well otherwise. So bear with me for a moment – here goes: Adams is the author of the trilogy *The Hitchhiker's Guide to the Galaxy*, the self-proclaimed world's largest trilogy, with five books in total¹.

However, unbeknownst to many of his fans, Adams was also an environmental activist. He spearheaded or participated in several conservation initiatives, such as *Save the Rhino International*. His history with conservation started in 1985, when the *World Wide Fund for Nature* (better known as WWF) and British newspaper *The Observer* partnered up, sending

¹ Or six, if you count *And Another Thing...* by Eoin Colfer (2009).

writers to visit endangered species to raise public awareness (BBC, 2014). Adams travelled to Madagascar in search of a lemur species, the aye-aye (*Daubentonia madagascariensis*). As he put it, "My role, and one for which I was entirely qualified, was to be an extremely ignorant non-zoologist to whom everything that happened would come as a complete surprise" (LCtS: p. 1).

In Madagascar Adams met not only weird lemurs, but also British zoologist Mark Carwardine. They enjoyed the experience and decided to travel the world to see other endangered animals. I mean, Adams and Carwardine travelled the world, not the lemurs; the lemurs stayed in Madagascar as far as anyone can tell. According to Carwardine, "We put a big map of the world on a wall, Douglas stuck a pin in everywhere he fancied going, I stuck a pin in where all the endangered animals were, and we made a journey out of every place that had two pins" (BBC, 2014).

Their travels resulted in *Last Chance to See*, a BBC radio documentary series that aired in the end of 1989. The companion book (by Adams & Carwardine, 1990, henceforth

abbreviated as “LCtS”) was published in the following year² (Fig. 1). As a matter of fact, Adams considered this book as his favorite work (Adams, 2005).

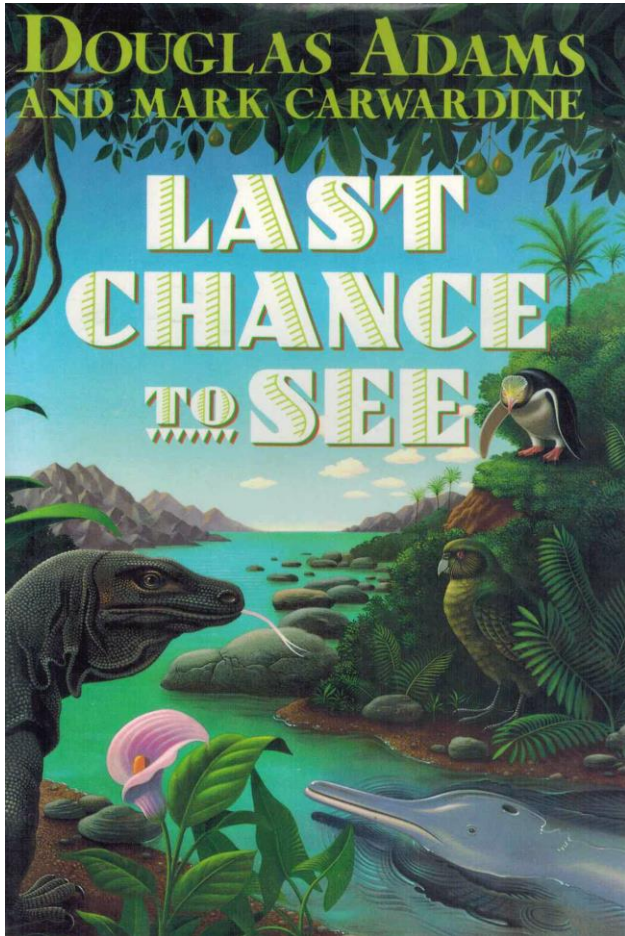


Figure 1. Cover art of the American edition of *Last Chance to See* (Harmony Books, New York, 1991).

Despite Adams’s calling himself an “ignorant non-zoologist”, world-renowned evolutionary biologist Richard Dawkins politely disagreed, writing: “Douglas was not just

² Later, in 1992, a CD-ROM set was published, with photos and audio of Douglas Adams reading the book. In 2009, BBC released a TV series of *Last Chance to See*, in which British comedian Stephen Fry took the place of the late Adams.

knowledgeable about science. He didn’t just make jokes about science. He had the mind of a scientist, he mined science deeply and brought to the surface... humour, and a style of wit that was simultaneously literary and scientific, and uniquely his own” (Dawkins, 2009: p. xiii).

Last Chance to See describes Adam’s and Carwardine’s travels around the globe to see nearly-extinct species, such as the Amazonian manatee (*Trichechus inunguis*) and the northern white rhinoceros (*Ceratotherium simum cottoni*). As one could expect, nearly all the species are mammals, since most of the public are primarily concerned with cuddly and relatable species. I, however, will focus here on the only bird on their list that got an entire chapter for itself. And I’ll do that for various reasons: (1) I am not very normal, so I am not that fond of smelly mammals; (2) it is a success story and people like success stories; and (3) this is a very funny-looking bird, I promise you.

This bird is called kakapo.

THE KAKAPO

Mark Carwardine first described the kakapo to Douglas Adams as “the world’s largest, fattest and least-able-to-fly parrot” (LCtS: p. 7). His description might seem a little disparaging at first, but it was meant in an affectionate way – you cannot help but smile when you see a kakapo. Besides, Carwardine’s description is actually spot-on (Fig. 2).

According to Adams, “[the] kakapo is a bird out of time. If you look one in its large, round, greeny-brown face, it has a look of serenely innocent incomprehension that makes you want to hug it and tell it that everything will be all right” (LCtS: p. 108).



Figure 2. Sirocco, a male kakapo, looking funny as kakapos usually do. Image extracted from New Zealand Birds Online (<http://nzbirdsonline.org.nz/>); credit: Dylan van Winkel.

The kakapo (or kākāpō, in Māori or Te Reo spelling) is a nocturnal flightless bird and its face resemble that of an owl, with the eyes positioned more to the front. For this reason, it is also known as owl-parrot or night parrot. Kakapos have green feathers, speckled with black and yellow (Fig. 3).



Figure 3. A kakapo looking unusually serious. Image extracted from New Zealand Birds Online (<http://nzbirdsonline.org.nz/>); credit: Colin Miskelly (2011).

Furthermore, kakapos are solitary birds, have a polygynous lek mating system (don't panic, I'll explain that later), lack male parental care, and breed in irregular intervals (with gaps of 2 to 7 years; Powlesland et al., 2006). Kakapos are so unique that ornithologists classified the species in its own family: Strigopidae. They are the very first lineage to have branched out of the parrot group (the Order Psittaciformes). Even their closest "relatives", the kaka and the kea (also from New Zealand), are already considered to be very distinct from kakapos.

Being such an ancient lineage of parrots, researchers consider that it could have split off the rest of the parrot groups when New Zealand got separated from the what is now Australia and Antarctica around 80 million years ago (Gibbs, 2016). All the southern landmasses had been previously joined in the supercontinent Gondwana, which was made up of South America, Africa, India, Antarctica, Australia and Zealandia (Fig. 4) and was by that time finishing its separation.

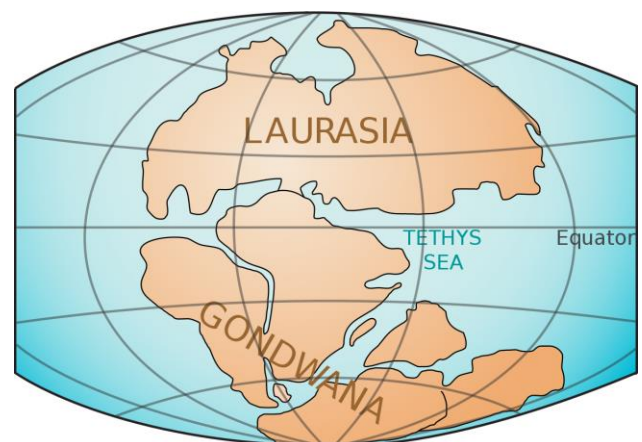


Figure 4. The supercontinent Gondwana during the Triassic (circa 200 million years ago). Image modified from Wikimedia Commons; credit: LennyWikidata (2008).

This break up left Zealandia with no mammals and a bird “paradise” island started to take shape. It is considered that the kakapo followed the trend of oceanic island bird lineages (where nasty mammals are not present) to evolve larger and flightless forms (Powlesland et al., 2006). For instance, that happened with the lineages of the dodo, moa, and elephant bird.

BIOLOGY

I cannot overstate how weird kakapos are for a parrot – or for a bird, actually. Adams considered the kakapo the strangest and most intriguing of all the creatures he saw during his travels with Carwardine (LCtS: p. 105). So I’ll illustrate that by highlighting some aspects of its biology that are of broader interest or peculiar weirdness. If you, however, are looking for a complete guide to the species’ biology, do take a look at the work of Powlesland et al. (2006).

We already covered that kakapos are nocturnal and flightless, and thus have good hearing and sense of smell, alongside massive legs and feet to walk around and climb trees. Yes, they do not fly, but do climb trees to feed. Evolution works in mysterious ways, it seems. Elliot (2017) wrote: *“They often leap from trees and flap their wings, but at best manage a controlled plummet.”* I prefer, however, the way Douglas Adams put it: *“it seems that not only has the kakapo forgotten how to fly, but it has forgotten that it has forgotten how to fly. Apparently a seriously worried kakapo will sometimes run up a tree and jump out of it,*

whereupon it flies like a brick and lands in a graceless heap on the ground” (LCtS: p. 109)³.

It seems kakapos are not able to follow the suggestion of the Hitchhiker’s Guide: *“There is an art, it says, or rather, a knack to flying. The knack lies in learning how to throw yourself at the ground and miss. (...) Clearly, it is this second part, the missing, which presents the difficulties”* (Adams, 1982). Kakapos just constantly fail to miss the ground.

Overall, kakapos are quite large birds, weighing around 2 kg, but males may weigh up to 4 kg and be 40% larger than females (Eason et al., 2006; Elliot, 2017). Their life span is unknown, but is estimated at 60 to 90 years (Department of Conservation, 2018a, 2018b).

Kakapos are vegetarian and eat almost every possible parts of plants. In fact, they only breed in years with a good abundance of fruit (Cockrem, 2006; Elliot, 2017). In their current habitat, kakapo reproduction is tied with that of the rimu (*Dacrydium cupressinum*), an evergreen coniferous tree of the podocarp family (Fig. 5). These plants bloom together every 2 to 4 years (sometimes it takes more); the kakapos must wait for the rimu because they depend on its “fruits” (Fig. 6) to feed the chicks (Cockrem, 2006; Ballance, 2010).

Unlike any other parrot, kakapos are lek breeders. This behavior is common for other groups of birds and even other animals, though. It consists in males gathering relatively

³ However, he soon changed the tone to blame flying birds instead: *“There is something gripping about the idea that this creature has actually given up doing something that virtually every human being has yearned to do since the very first of us looked upwards. I think I find other birds rather irritating for the cocky ease with which they flit through the air as if it was nothing”* (LCtS: p. 120).



Figure 5. A rimu tree is really tall for a flightless bird to climb. Image retrieved from Wikimedia Commons; credit: Kahuroa (2008).



Figure 6. A ripe rimu "fruit", or better put, a seed sitting on a fleshy cup. Image retrieved from Wikimedia Commons; credit: Department of Conservation (2002).

close to each other and starting a competition to show off to females. Birds can do this mainly by song or dance (or both), but might also include somersaults and flying maneuvers. Each female will choose the best performer (in their opinion at least) and successful males typically mate with more than one female during a single season.

Male kakapos sing to attract females. Or rather, they do something akin to "Pink Floyd studio out-takes" (LCtS: p. 111). The most common type of call produced by kakapos is called booming. This is a low-frequency (<100 Hz) resonant call, which can be heard up to 5 km away (Merton et al., 1984; Higgins, 1999). To produce this sound, male kakapos fill up internal air sacs; they can inflate until they look like a fluffy watermelon (Figs. 7, 8). Adams described the sound as a heartbeat, a powerful throb you felt before actually hearing it; and this gave the title to the kakapo's own chapter in LCtS: "Heartbeats in the Night".



Figure 7. A male kakapo booming – and looking like a watermelon. Image extracted from New Zealand Birds Online (<http://nzbirdsonline.org.nz/>); credit: Department of Conservation (image ref 10027966, photo by Ralph Powlesland).

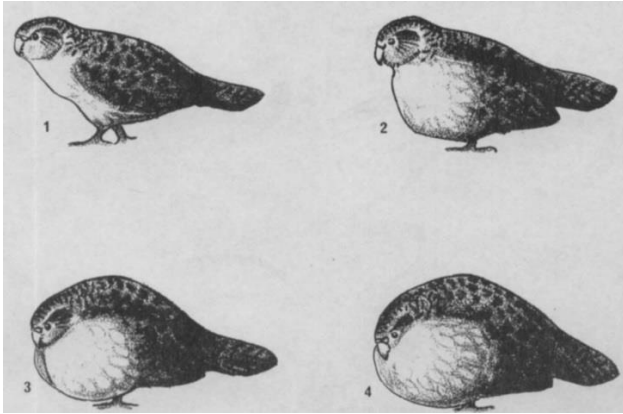


Figure 8. How to camouflage as a watermelon in four easy steps. OK, now serious caption: postures of a male kakapo booming. Figure reproduced from Merton et al. (1984: fig. 4). The original caption reads: “(1) Normal stance; (2) Alert static pose between booming sequences; (3) Commencement of booming: inflation of thorax while giving preliminary ‘grunts’; (4) Maximum thoracic inflation during loud booming.”

Booming also serves to indicate the male’s overall location to the female. Once they are close by, males can produce a sharp metallic “ching” call to enable females to pinpoint their exact location (Powlesland et al., 2006). A good place to hear kakapo booming and chinging is New Zealand Birds Online (<http://nzbirdsonline.org.nz/>).

The female nests on the ground, either on a spot covered by dense vegetation or in natural cavities (Elliot, 2017). Kakapos usually lay 2 to 4 eggs and the female raise the chicks alone (Fig. 9; Cockrem, 2006; Powlesland et al., 2006). Young birds leave the nest within 2 to 3 months, but remain close to their mother’s home range until they are 6.5 to 8.5 months old (Farrimond et al, 2006; Powlesland et al., 2006).

So how do we summarize kakapos? Adams gives us a nice idea: “*The kakapo (...) pursues its own eccentricities rather industriously and*

modestly. If you ask anybody who has worked with kakapos to describe them, they tend to use words like ‘innocent’ and ‘solemn’, even when it’s leaping helplessly out of a tree. This I find immensely appealing” (LCtS: p. 121).



Figure 9. Alice, a female kakapo, on her nest with her two chicks (circa 45 days old). Image extracted from New Zealand Birds Online (<http://nzbirdsonline.org.nz/>); credit: Department of Conservation (image ref 10048384, photo by Don Merton, 2002).

Box 1. Kakapo names

Since there are so few kakapo left and the whole population is managed, each bird has its own name. When Adams and Carwardine visited Codfish Island, they met a kakapo named Ralph. Later on, Adams himself got to name a kakapo Jane, after his then-girlfriend (Balance, 2010). You can check this amazing infographic (by DeMartini et al.) with all the names and family trees of known kakapos: https://public.tableau.com/views/TheKakapo/Dashboard1?:embed=y&:display_count=yes&:tooltips=no&:showVizHome=no.

Presently, the most famous kakapo is Sirocco, who became a YouTube star after he tried to mate with Carwardine’s head during the filming of the *Last Chance to See* TV series (Carwardine, 2010). Today, Sirocco is 21 years old and is the official “spokesbird” for conservation in New Zealand (Department of Conservation, 2018b), a title given to him by then Prime Minister John Key.

HISTORY

Kakapos were present in New Zealand long before humans arrived there: some subfossil bones have been dated from 2500 years ago (Wood, 2006). They were very common and lived throughout both the North and South Islands (Tipa, 2006), with few natural enemies. They were successful in their pre-human environment, but that was soon to change.

Polynesian settlers arrived in Aotearoa⁴ between 1200 and 1300 CE (Wilmshurst et al., 2010) and became known as the Māori. As typical of all humans, they brought domestic/pest species with them: dogs and rats.

As many island species, kakapos were only concerned with their known immediate predators; these mostly harmless birds were thus unprepared for a wave of invaders. Kakapos have the strategy of staying perfectly still when facing danger, which works fine against predators that rely on sight. However, this had little effect against dogs, which hunt by scent. The parrots were hunted for food and ornamentation (for instance, the Māori used the feathers in cloaks; Tipa, 2006) and the population declined. Polynesian rats also played a major role, preying upon defenseless kakapo eggs and chicks.

European settlers arrived on the 19th century and, as one might expect, colonization (and new mammalian predators, such as cats and mustelids) accelerated the species' decline. The Europeans also brought naturalists, who collected specimens for study at museums (Fig. 10). British zoologist George Robert Gray officially named the kakapo *Strigops*

*habroptilus*⁵ in 1845. Later naturalists (some already born in New Zealand) went further, observing live parrots in the wild and studying their natural history.



Figure 10. Museum drawer full of preserved kakapo specimens, from the collection of the Museum of New Zealand Te Papa Tongarewa. Photo by the author (©Te Papa, all rights reserved).

Already in the 1890's, naturalists became aware that the species was heading towards extinction, so the first efforts in conservation (transferring animals to islands in Fiordland; Fig. 11) were undertaken (Hill & Hill, 1987). They failed and eventually the species fade out from the thoughts of New Zealanders, being considered extinct or nearly so (Ballance, 2010).

BUT DON'T PANIC

That lasted until the work of Williams (1956), which summarized all knowledge about the kakapo and brought it back to the spotlight. With this renewed interest, expeditions were

⁴ The Māori name for New Zealand.

⁵ *Strigops* means "owl-faced", while *habroptilus* means "soft feather".

formed to find the species in the southernmost reaches of New Zealand.

A serious take on conservation efforts started again in the 1970's, when a population of around 200 kakapos was found on Stewart Island (Fig. 11; Powlesland et al., 2006). A new process of translocation and monitoring then began. During the 1980s and 1990s, the animals were all moved to predator-free islands: Codfish, Maud and Little Barrier (Fig. 11; Elliot, 2017). When Adams and Carwardine visited Codfish Island in 1992, there were only around 40 kakapos left (Ballance, 2010; Carwardine, 2010).

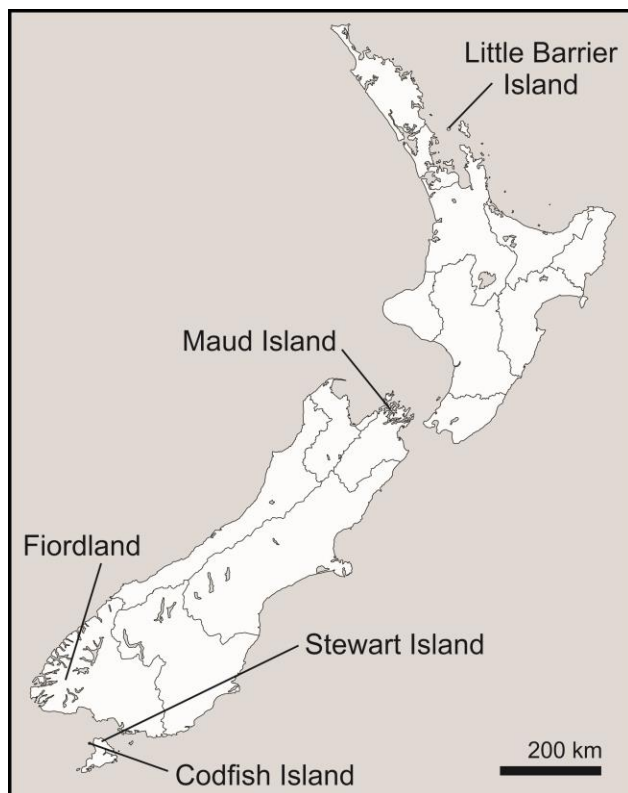


Figure 11. Map of New Zealand showing the locations mentioned on the text. Image modified from Wikimedia Commons; credit: NordNordWest (2009).

However, things started to look brighter after a review in the management of the species (Elliot et al., 2001). A strong and focused policy and full support of the government were essential during the decades since (Jansen, 2006). The kakapo population started to recover and can now be considered one of the greatest successes among global conservation programs – and a good example of how our species can, in fact, clean up after its own mess.

The last report, from June 2017, counted a total of 154 birds (Elliot, 2017), a number exceeding previous population simulations (Elliot, 2005). Recovering the kakapo from the brink of extinction was a feat, but more challenges remain. Presently, the species is considered as “critically endangered” according to the IUCN’s Red List (BirdLife International, 2016). Although this seems better, it is good to remember that this is just one step away from the “extinct in the wild” status in this classification scheme (which the kakapo held during two issues of the Red List in the mid-1990s). Presently, kakapos only survives on offshore islands and there is still lot of work to be done until we have a viable, and self-sustaining population that does not need human management.

Maybe just panic a little bit...

The kakapo is not the only endangered species in the New Zealand – everyone has heard about kiwis, at least. So what about all the other threatened species, birds and otherwise, in the country? Jansen (2006: 190) ominously wrote: “*While extinction of kakapo is now less likely than 10 years ago, the future of*

the 600+ New Zealand species listed as acutely and chronically threatened (...) and that presently do not receive any management is by no means secure." So yes, there is still a lot of work to be done.

But why should we care if some species go extinct? Why should we strive so much to save them? Carwardine (LCtS: p. 205) gave what Dawkins (2009) considered to be the typical explanations for business-minded humans: (1) we mess with the environment, everything goes haywire, and that ultimately affects our survival, and (2) living beings have their uses as food, drugs, etc. However, Carwardine then presented his preferred explanation, one more typical of scientists and that we say to each other over coffee: we try to save them because they are cool. Or, as Carwardine put it: "*There is one last reason for caring, and I believe no other is necessary. It is certainly the reason why so many people have devoted their lives to protecting the likes of rhinos, parakeets, kakapos and dolphins. And it is simply this: the world would be a poorer, darker, lonelier place without them*" (LCtS: p. 206).

"Up until that point it hadn't really clicked with man that an animal could just cease to exist. It was as if we hadn't realised that if we kill something, it simply won't be there anymore. Ever. As a result of the extinction of the dodo we are sadder and wiser."

—Douglas Adams, 1990

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Dr. **Rodrigo Salvador** is a biologist specializing in the classification and evolution of land snails. Yes, you might say, that has nothing to do with kakapos. But it so happens that the universe conspires to keep him entangled with bird work. As a scientist, he learned with Douglas Adams that knowing the right question is sometimes more important than knowing the answer.