

FOOD FOR

THOUGHT

Soaring high above the earth on outstretched wings, the Wedge-tailed Eagle is such an iconic image of the Australian Outback that it is one of few birds to have its own widely recognised nickname—the Wedgie. Yet we actually know remarkably little about the life history of our largest and most familiar raptor. SIMON CHERRIMAN discovers that the Wedge-tailed Eagle diet is flexible, allowing the eagle to persist in changing times.

ARTICLE AND PHOTOS BY SIMON CHERRIMAN

While Wedgies are capable of taking a huge variety of prey, including animals much larger than themselves (they have been known to cooperatively hunt adult kangaroos), their diet generally consists of small to medium-sized mammals, including bandicoots, possums, young kangaroos and wallabies, as well as introduced species like rabbits. They are, however, extremely adaptable predators eating whatever is most readily available, and will feed on a wide range of birds and reptiles as well as carrion, which is probably an important part of eagle food at certain times of the year.

How do we know what Wedgies feed on? To actually witness an eagle capture a live animal is very rare indeed, and there are few people lucky enough to have seen such an event. The most common and effective method used to determine what eagles eat is to collect the remains of prey animals from their nest. In the Perth region of Western Australia, I studied eagle diet from 2004 to 2006. This research involved visiting the nests of several breeding pairs to collect the remains of prey; the bones, fur and feathers that accumulate during each breeding season. The remains were carefully sorted and identified to species by comparing them with reference material, including skeletons from the Western Australian Museum. Using this information, along with data gained from the analysis of regurgitated pellets also collected from eagle nests and observations of feeding events at nests, a list of the different types of prey animals eaten during the three breeding seasons was compiled.

Thirty-seven species of vertebrate were identified as eagle prey in the Perth region. Some of the species listed (for example Magpie-larks and Rainbow Lorikeets) were quite small, and it is interesting that eagles invest the energy to capture something that would appear to bring little reward. Many of the native marsupials were nocturnal, which indicates that eagles are capable of hunting in semi-darkness, or working together to flush prey from its hiding place and capture it during daylight.

One of the most interesting findings was the composition of mammals in eagle diet at Karakamia





Wildlife Sanctuary, a conservation reserve managed by the Australian Wildlife Conservancy at Chidlow, about 30 km east of Perth. Karakamia consists of 250 ha of remnant bushland where a fox- and cat-free environment has created a haven for threatened marsupial species. Within this fenced area, a suite of native marsupials, including the Quenda, Brush-tailed Possum, Woylie (or Brush-tailed Bettong), Tamar Wallaby and Western Brush Wallaby, have become re-established and thrive in this environment. At Karakamia, the diet of the resident pair of Wedgies consisted primarily of these native species (73 per cent of diet biomass). Although local farmland surrounding Karakamia had an abundance of rabbits, as well as some domestic livestock, the eagles here ate almost wholly native food, despite the fact that many of these prey species are nocturnal, and shelter during the day among dense vegetation or in tree hollows. Of course, this may not mean that native mammals are preferred prey, it could be that in the sanctuary's enclosure free of terrestrial predators, native prey are super-abundant or easier to catch for reasons associated with their confinement.

Bernier Island in Shark Bay, Western Australia, is similar to Karakamia, in that native marsupials including the Western Barred Bandicoot, Burrowing Bettong and Banded Hare-wallaby thrive in a setting where feral mammals are absent. Another diet study at this island also found similar results—local Wedge-tailed Eagle diet consisted almost entirely of native species. By contrast, at Whiteman Park on

the Swan Coastal Plain near Perth, the eagle's diet consisted of 74 per cent rabbit (by diet biomass) during a three-year period.

Australia has undergone severe environmental changes since European settlement and large tracts of native vegetation have been cleared. For example, more than 90 per cent of the Wheatbelt region of Western Australia was once woodland. As a consequence of this extensive habitat modification there have been numerous native mammal extinctions and a growing list of species that are declining. For example, the Woylie is now extinct from 99 per cent of its former range. Once widespread across broader southern Australia, the impacts of land clearing, altered fire regimes and feral animals caused its distribution to contract to a few small pockets of vegetation in south-west Western Australia.

Birds of prey like the Wedge-tailed Eagle would have regularly preyed on the Woylie and other native animals, depending on their availability, and would have suffered by their decline. However, to eagles (and some other raptors), the introduced rabbit was a ready substitute for the native animals that were disappearing from their habitat, and most Wedge-tailed Eagle diet studies conducted since the 1960s have indeed confirmed rabbits are the favoured eagle prey where they are available. This switch in diet may therefore have implications on eagle distribution and breeding success. Where ecosystems have been simplified, one introduced mammal (the rabbit) has essentially replaced five or six natives. The abundance of rabbits

Opposite top: An adult Wedge-tailed Eagle in flight.

Opposite bottom: The Wedge-tailed Eagle has an adaptable diet and has been found to feed on both native and introduced prey species.

Above: An eaglet in its nest, with Perth city in the background.

in any given year therefore directly influences the breeding success of a territorial pair of eagles needing a reliable food source. In arid Western Australia, rabbits needed to occur at a minimum density of 60 per km² for Wedgies to even attempt breeding. Fortunately, the Wedge-tailed Eagle's ability to adapt and broaden its diet has allowed it to utilise alternate prey sources (such as birds and reptiles) in years of low mammal abundance, and remain successful in many habitats.

Usually, research poses more questions than it answers. Has the large number of road-killed animals increased carrion availability, and if so, what is the role of carrion in eagle survival and breeding success? How has the post-European increase in abundance of large macropods (Red and Grey Kangaroos) affected eagle breeding success and territory occupancy? Even though the Wedgie can live and hunt in dense forest, can it hunt more successfully in open farmland, and is it therefore more successful in rural landscapes today than it was in these areas pre-European settlement?

These are only some questions that come to mind when one considers the true impact of humans on the diet of the Wedge-tailed Eagle. Importantly, this iconic species is still a relatively common bird, and the fact it breeds on the doorstep of capital cities like Perth is an asset to our beautiful country.

SIMON CHERRIMAN is currently studying Natural History Filmmaking at Otago University in Dunedin, New Zealand. To order a copy of his documentary about Wedge-tailed Eagles in the Perth region, email aquila84@iinet.net.au



An adult Wedge-tailed Eagle at the nest.

Further reading

- Brooker, M.G. and Ridpath, M.G. 1980. The diet of the Wedge-tailed Eagle, *Aquila audax*, in Western Australia. *Australian Wildlife Research* 7: 433–452.
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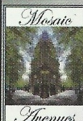
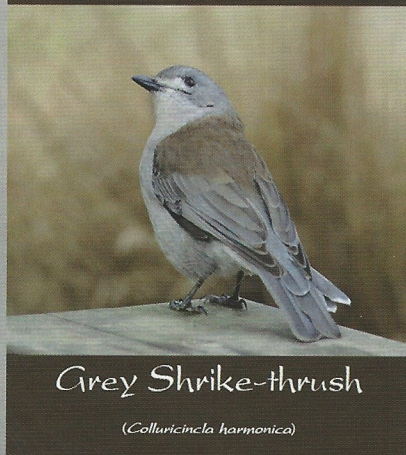
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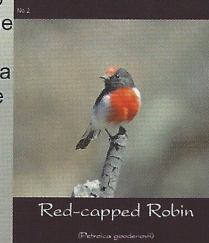
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