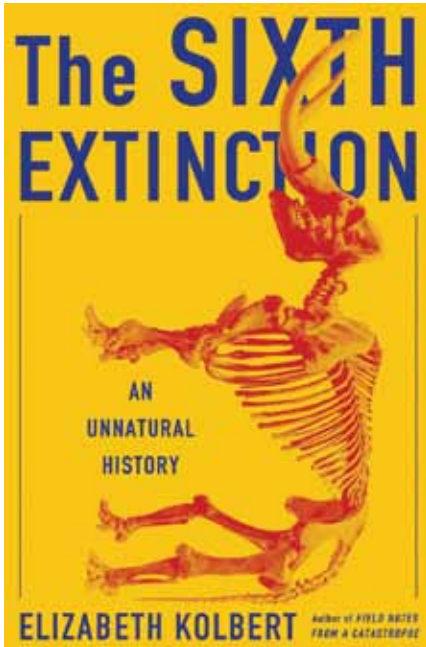


Book Reviews



THE SIXTH EXTINCTION

An Unnatural History

Elizabeth Kolbert

Bloomsbury, 2014, 336 pages

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Amongst reviews of *The Sixth Extinction*¹ Al Gore writes of Elizabeth Kolbert's "timely, meticulously researched and well-written book,"² and Robin McKie comments on this "compelling account of human-inspired devastation".³ What I liked particularly is that complex issues were brought to life through a journey in which Kolbert explores the different aspects of extinction taking place

across the world – and she introduces the individuals who are charting the phenomenon's progress and in some cases trying to halt it. She rightly identifies that the Sixth Extinction is practically ubiquitous and highlights how each of us is in part to blame. I did not know, for example that "one third of the CO₂ that humans have so far pumped into the air has been absorbed by the oceans,"⁴ resulting in increasing acidification, and, the consequent threat to marine life. But while Kolbert succeeds in explaining the five extinction events of ages past, and perhaps in introducing the concept of the Sixth Extinction to new audiences (an invaluable service if she has achieved this), I sensed that the author was writing as if extinction is news, which, of course, it isn't.

I always understood that the Sixth Extinction was a phrase coined by Richard Leakey in his book of the same name written with Roger Lewin in 1995;⁵ Leakey's work has always been my point of reference. As a young man he witnessed the outcome of the severe droughts of 1960 and 1961 in which thousands of animals died, and he clearly loves the wildlife of Kenya where he was brought up. His first career, however, was as a palaeontologist where he identified the patterns of mass extinctions in fossil records. This background enabled Leakey to write a powerful narrative in *The Sixth Extinction; Biodiversity and its Survival*, scaling life's origins and the impact of ancient peoples, together with an analysis of extinction occurring at the time of his writing with a particular focus on elephants owing to the "gruesome compelling reality that they were hurtling toward extinction."⁶ The book has a number of themes, a central one of which is change and in particular

the pattern of change. Another is that human beings are but one species, and that we must distance ourselves from our own experience – only in this way can we understand the ‘larger reality’ and develop sufficient humility to recognise our powerful impact on the ‘flow of life’.⁷

As a general observation, not recognising Leakey’s book – which I suspect was novel in bringing evidence together to present a holistic picture for the first time, linking the ‘big five’ with early and contemporary anthropogenic causes of extinction – seems ungenerous. To my mind Kolbert should in part have been updating what Leakey originally recognised, together with bringing her own focus on what she considers to be the key indicators of the contemporary extinction crisis.

Kolbert’s book partly overlaps with Leakey’s. For example, she refers to Alfred Russel Wallace’s change of mind, originally believing that climate change had caused the demise of ‘Pleistocene bestiary,’ but later said “the extinction of so many large Mammalia is actually due to man’s agency,”⁸ a quote also used by Kolbert.⁹ Both authors also refer to the work of Thomas Lovejoy, exploring the impact of fragmenting the forest in Brazil, which Kolbert addresses in more detail. I am not sure Kolbert misses anything in the extinction story, but if we want a synthesis of how humans are causing extinction we need to refer to Leakey. First he says there is direct exploitation, such as hunting. Second, there is the introduction of alien species. Third and worst, the destruction of habitat.¹⁰ Leakey provides a very good chapter¹¹ which explains how a combination of hunting and habitat erosion (principally forest destruction) eliminated megafauna over

the last 12,000 years. Both authors refer to human travel, which Kolbert attributes to a ‘madness gene,’¹² though I think Leakey’s representation – referring to ‘invasion’¹³ – is more apt. The Polynesians were amongst the first to create a wave of extinctions,¹⁴ though megafauna extirpation in the Americas and Australia also followed human conquest; “*Homo sapiens* holds claim to a long history as an agent of extinction”.¹⁵ Bringing us more up to date Rodolfo Dirzo advises that since 1500 more than 320 land vertebrates have become extinct, and those remaining show a 25 per cent decline in abundance; the situation is the same for invertebrate life. This he dubs as ‘Anthropocene defaunation.’ Large animals, such as elephants, rhinos and carnivores like polar bears are particularly vulnerable.¹⁶ The outcome of removing, for example, forest elephants, which have declined by 50 per cent in the last decade alone, is an increase in rodents – giant rats even¹⁷ – and a reduction in the distribution of soil fertility.¹⁸ Clive Hamblin and colleagues have documented extinctions since 1800 (the Great Auk became extinct ca 1812)¹⁹ and have pointed out that in the UK we continue to lose one species a fortnight.²⁰ None of these latter researchers, incidentally, are mentioned by Kolbert.

What are the factors behind the Sixth Extinction? Kolbert talks about what has happened and what is happening, but why is extinction being allowed to continue and accelerate? Her explanation includes climate change, ocean acidification, the spread of disease across continents; additional dimensions to the problem less obvious when Leakey wrote his book 20 years ago. Surprisingly Kolbert does not talk about economic drivers, and soy and palm oil production must be two of the

biggest causes of extinction; palm oil plantations across the world now cover an area the size of Brazil. There is also, of course, growing consumer demand from China, leading, *inter alia*, to elephant poaching, something Leakey hoped was being overcome.²¹

I would have liked Kolbert to have considered measures of extinction which provide new perspectives. Recently I came across the work of Bernie Krause – the man who reintroduced the xylophone in the 60s and worked with the Byrds! He argues that while a picture may be worth a thousand words a ‘soundscape’ is worth a thousand pictures and soundscapes provide a little-recognised measurement of an ecosystem’s health. He uses the example of Lincoln Meadow in California. In 1988 he recorded its ‘biophony’ which was replete with the birdsong of numerous species. After selective logging, and having returned 15 times, the difference was shocking and Lincoln Meadows has not recovered since. Local residents were assured that selective logging would not cause any harm, and indeed the woodland looked intact afterwards – but listening told the real story and belied residents’ impressions.²² Listening to biophony, is, according to Krause, “to hear the voice of the divine”.²³ Being able to hear and record biophony is a prerequisite to applying this measure of extinction. In the 1960s there were 40 areas in Britain where it was possible to escape man-made noise; now there are just two.²⁴

Kolbert concludes that the ‘rate of change’ is the main problem, as when species cannot adapt ‘many fall out.’

To argue that the current extinction event could be averted if people just cared more... is not wrong, exactly;

*still it misses the point. It doesn’t much matter whether people care or don’t care. What matters is that people change the world.*²⁵

Compare this to what Leakey opines:

The loss of species reduces us in some ineffable way²⁶... I take this responsibility very seriously²⁷

*The recognition that we are rooted in life itself and its well-being demands that we respect other species, not trample them in a blind pursuit of our own ends... when we understand this intimate connection... an ethical imperative follows: it is our duty to protect, not harm.*²⁸

Kolbert leaves me feeling helpless, detached and not responsible, whereas Leakey makes me want to take responsibility and to do something. I also think Kolbert is wrong. By caring little we are not likely to want to know more; caring a lot leads to empathy and curiosity, and these qualities influence choices – choices which either contribute to or militate against extinction. Some people care, some don’t, and there is a spectrum in between; “the tree which moves some to tears of joy is in the eyes of others only a green thing that stands in the way... some scarcely see nature at all. But to the eyes of the man of imagination, nature is imagination itself”.²⁹ In short, people who do not recognise nature are more likely to destroy it than those who are moved by nature. And unfortunately the former are more numerous and in their midst some are powerful. Not caring for nature must be a factor behind its diminution whatever Kolbert says.

Kolbert’s *Sixth Extinction* should galvanise us to live differently, to

make different choices, but her book – fascinating though it is – leaves me feeling I cannot make a difference. Leakey, in contrast, radiates love and a palpable sense of moral outrage. The actions of our ancestors have certainly erased ‘endless forms most beautiful and most wonderful’ in the flesh and in our imaginings.³⁰ But love for what remains, and outrage for its plight at the hand of my own kind, means I have not given up quite yet. I remain convinced that ‘it is our duty to protect, not harm.’

It probably comes across that I consider insouciance, a lack of empathy, and thoughtlessness, as much the drivers of the Sixth Extinction as economic forces; after all, if we all thought about how cheap meat was produced, where ivory came from, or whatever it might be, the market for these products and the dire consequences from how they are sourced would not exist or occur. In a much truncated form I have tried to express below what I think is the main driver of extinction – a preoccupation with ourselves, or ‘me’ for short.

Me

Long gone, I remember now
The Auk and Moa, Steller’s Sea Cow

But I forget myself

It was never my wont to lament
For lives whose end was ever my intent

The intimations of my birth
Can be found in ancient travel first
The Maori’s sacred kiore untied
And two thousand island species died

Refugees of a woodland race
The ubiquitous oil has displaced
Those cloned palms would as well be

of granite
For all that now therein inhabits

Frighted from southern latitudes
A bean; for unconscionable food
Crossing Bentham’s insuperable line
Upon Amazonia I dine

This; everywhere, becomes nowhere left
For imagination itself, for rest

But I forget myself

My mission is almost done
All for me, alone, this world is won.

Simon Leadbeater

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NATURE IN TOWNS AND CITIES

David Goode

Collins, The New Naturalist Library

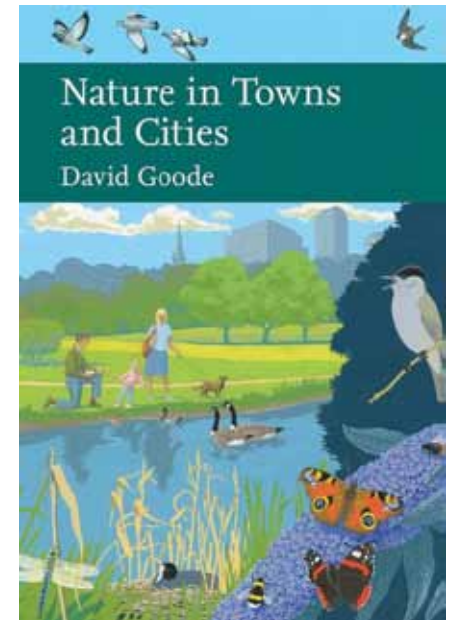
2014, 418 pages

Hbk ISBN 978-0-00-724239-9 £55

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The wildlife of towns and cities remains an enigma: despite all the evidence to the contrary, the media, the Government and the general public still nurture a belief that wildlife belongs in the countryside, and its urban manifestations are odd, even extraordinary. This excellent book dispels this myth and should be required reading for the doubters. It is the latest in the long series of New Naturalist volumes, and is long overdue. One of the first New Naturalists was *London’s*



Natural History by Richard Fitter, published in 1945, but this series has not tackled the subject since.

Few people are as qualified as David Goode to write this book. He combines a passion for nature with a sound academic background, a lifetime as a practising ecologist (mainly in London) and an easy and fluent writing style. He was one of a key group of people who understood the importance of nature in the places where people live. They were able to both persuade politicians and others of the need for action to conserve it, and to devise and deliver that action. The book reflects this two pronged approach: Parts One and Two deal with the ecology, habitats and species; the shorter Part Three deals with the urban nature conservation movement, its philosophy, personalities and organisations.

If the doubters mentioned above read no other part of this book they should

look at Chapter One – 'Nature in a Small City'. It is a narrative of a walk around Bath, now David's home, and is a brilliant piece of descriptive and informative writing. It covers the habitats, general and specialised, the vegetation, and the animals, birds and insects. David explains what is where and why it is present there.

Following this are more general accounts of habitats in towns and cities, such as encapsulated countryside, canals, cemeteries and railways, 'urban commons' and parks, squares and gardens. The species chapters cover typical urban opportunists, badgers and foxes, and especially birds. I particularly enjoyed the detailed description of plant succession on the disused Feltham Marshalling Yard near to Heathrow Airport.

Nothing is perfect, and I do have a few minor quibbles. For instance the book seems to finish rather abruptly, with no concluding thoughts or reflections. Then there is a hobby-horse of mine: working in towns and cities means inter-acting with people from many backgrounds and many parts of the world. Continually referring to non-native plants as 'aliens' does not sit comfortably in these circumstances. Exotic means the same and is much more acceptable. Strangely, introduced birds and animals are rarely described as alien; ecologists just can't get out of the habit with plants.

Then there is geography: the Black Country is not part of Birmingham. The citizens of Dudley, for example, will not thank David for placing them there, and there are several other examples of the same thing. Birmingham and the Black Country together form the West Midlands Conurbation but they are very different places.

Finally I think that there is an imbalance in the treatment of some subjects. For example rivers get only two pages to themselves. Curiously this is in the 'Meadows, Marshes, Heaths and Hills' section, not with other wetlands. London's reservoirs on the other hand merit five pages, and peregrine falcons seven.

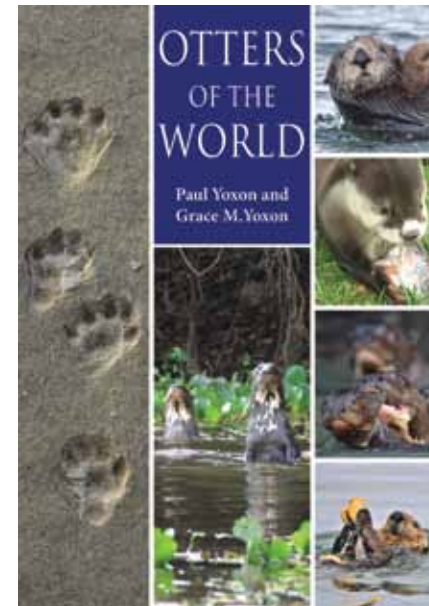
Such things do not greatly detract from this first class book. I was lucky to be reading it on a train journey to Glasgow, passing by and through a number of the places mentioned. The book also took me to other places I know, like Camley Street Nature Park and the Jupiter Project in Grangemouth. I also learned that there was once a crane with a wooden leg in London, swifts probably eat a greater variety of species than any other creature, and Fairbairn Ings in West Yorkshire has the highest recorded variety of birds (274) of any inland site in the UK.

Peter Shirley

OTTERS OF THE WORLD

Paul and Grace Yoxon
Whittles Publishing, 2014, 160 pages
Pbk £18.99 ISBN 978-184995-129-6

Grace and Paul Yoxon are well established otter experts. As well as creating the Skye Environmental Centre in 1984 and founding the International Otter Survival Fund in 1993, they have undertaken detailed studies of the ecology of common otters (*Lutra lutra*) in coastal habitats and established a wild animal hospital which has rehabilitated many orphaned or injured otters back into the wild. It is therefore unsurprising that their book *Otters of the World* contains a wealth of information regarding the status of all 13 species of otters worldwide. As well as providing a



simple standard analysis of each species' range, length, weight, conservation status, diet or hunting technique the text contains an abundance of much more detailed information regarding otter ecology.

The threats to otters are both generally and specifically defined with some interesting case studies of unusual situations. For example in Lake Naivasha in Kenya, Louisiana red swamp crayfish (*Procambarus clarkii*) were introduced to give the introduced population of large mouth bass (*Micropterus salmoides*) something to feed on after they almost completely consumed the native prey base. The crayfish predated the native freshwater crabs causing their numbers to decline but do provide the African clawless otters (*Aonyx capensis*) which are adapted to eating crustaceans with an additional, abundant food resource. The problem with this is that the abundance or scarcity of crayfish is dictated by the water levels. When the

levels are low they are consumed by many other native predators. When they are high the otters prosper. During the low cycles crayfish scarcity is exacerbated by a paucity of native fresh water crabs which cope better with this natural phenomenon and this results in the otters having to switch to feeding on fish which being clawless they are poorly adapted to do. In addition to this example of unintentional pressure the wider threats to the existence of otters worldwide make depressing reading. As well as pesticide accumulations, prey decline, oil spills, road accidents, hunting for their fur, fisheries conflicts, the pet trade and forest loss throughout their range, the ever increasing drainage of wetlands complicates their future survival.

The book has some excellent photographs of some of the more unusual otter species and contains a range of 'trivial pursuit' type facts which are variously enlightening or amusing. For instance spotted necked otters (*Lutra maculicollis*) can be caught using an alcoholic mixture made from bananas which makes them drunk and easy to catch while sea otters (*Enhydra lutris*) conceal their favourite crushing stone for urchins in a specially developed fold in their armpit!

The Yoxon's and their colleagues from the International Otter Survival Fund are committed to both a better understanding and the long-term conservation of these fascinating creatures. Their passion comes across strongly. While it is clearly a personal work it is I would suggest a real treat. A gem of a book written with great affection by authors who have a deep understand of their subject.

Derek Gow