

Ornithology from the Lakeshore

Author: Kempenaers, Bart

Source: Ardea, 112(1) : 1-3

Published By: Netherlands Ornithologists' Union

URL: <https://doi.org/10.5253/arde.2024.a1>

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Ornithology from the Lakeshore

LIFE'S MASS MURDERERS

Homo sapiens is not prone to be benevolent to the rest of life

E.O. Wilson

In palaeontology, the term 'Big Five' refers to five mass extinctions that have occurred since the origin of life on Earth (Raup & Sepkoski 1982, Marshall 2023). In psychology, the 'Big Five' denotes the five primary human personality traits. These two fives are unrelated: the mass extinctions happened long before humans walked the planet. Yet, human personality traits may well be involved in causing the sixth mass extinction, also referred to as the Holocene or Anthropocene extinction.

A mass extinction is defined as an event leading to the loss of a substantial proportion of species – often specified as at least 75% – across a broad geographic area and within a relatively short geological period (typically a few million years). The sixth mass extinction is therefore a *potential* event, one that has not yet occurred (Cowie *et al.* 2022), but is in good destructive hands. The current rate of extinction (the number of species lost per unit of time) is estimated to be 100 to 1000 times higher than the 'background' rate observed before human impact. Given the current rate of biodiversity loss, and us being at a loss about changing course, we are on a clear path towards number six. A clear and present danger.

Extinctions befall most branches of the tree of life – including trees – and alas, birds feature prominently in this regard. Over the last c. 500 years, 44 genera (of which 11 contain more than one species), 4 families and 2 entire orders (out of a total of 23) of the class Aves have disappeared to never return (Ceballos & Ehrlich 2023). Many of the extinction stories are well-known, and many unfold on islands. In New Zealand, the moas (order Dinornithiformes) were hunted to extinction about 500 years ago, and other endemic species fell prey to mammals that weren't supposed to be there (I suggest reading about the Lyall's Wren *Traversia lyalli* and a cat named Tibbles). In Madagascar, the elephant birds (order Aepyornithiformes) possibly already disappeared 3000 years ago due to early agricultural practices that led to habitat destruction.

The cards are clearly stacked against species that are large and flightless, and have small populations, but the Passenger Pigeon *Ectopistes migratorius* – "flockes in the aire, so thicke that even they have shadowed the skie from us", see Scherber (2017) – also fell

victim to our proclivity for perniciousness (Avery 2014 tells the story most grippingly). And so other pigeons, and parrots, and a smorgasbord of Passeriformes disappeared, including inconspicuous and little-known species such as the Alagoas Foliage-gleaner *Philydor novaesi*, a member of the ovenbird family (Furnariidae) that was endemic to Brazil. The list is long and every story is painful to the ornithologist's ear.

Painful is also that the true dimension of our impact is even larger. A recent study estimated that 55% of bird extinctions left no trace or have not yet been discovered, implying that about 12% of all species have gone extinct since the Late Pleistocene (Cooke *et al.* 2023). According to the IUCN Red List, a similar proportion of bird species are threatened with extinction (critically endangered), and many more are endangered, vulnerable, and near threatened (see Shaw *et al.* 2024 for a recent example).

Humans cause havoc. Not necessarily as individuals – although one could think of some names to highlight (or is it lowlight?) – but simply because we are here, in numbers, and with lower or higher aspirations. *Homo sapiens* is the only species that can celebrate the fragile state of biodiversity. Some of these reflections are profound and alarming. A book published in 2005 described instances of societal collapse due to environmental changes, among other issues (Diamond 2005). Since then, so much news and information have accumulated – alas also fake news and mis- and disinformation – that we can no longer plead ignorance about the human-induced environmental changes that are causing a crisis. Diamond's book's subtitle reads "How Societies Choose to Fail or Succeed", suggesting we have a choice, we can change our behaviour. However, considering the complexity of society, the (short-term) interests of local and global players, and our multifarious and Machiavellian projects makes me highly sceptical.

So, how to respond to the reality of the crisis? Conservation efforts and organizations with charismatic leaders and dedicated members abound, and stories of success have been told (see e.g. Butler & Merton 1992, Balmford 2012, Mittermeier *et al.* 2017). But when a recent authoritative review (Cowie *et al.* 2022) concludes "we are pessimistic about the fate of

most of the Earth's biodiversity", should we be surprised that eco-anxiety is on the rise? Many people feel helpless or hopeless, angry and frustrated – enough so to glue themselves onto a busy street or an airport's tarmac, to hurl food or paint at famous paintings, and even to promote and use violent action (Büscher 2018, Malm 2021, see also Abbey's (1975) classic novel). Others are – or may well be – in denial (Thomas 2017, Ritchie 2024) or appear astonishingly indifferent to what is going on, including some of my fellow scientists. A "Don't Look Up" movement does exist. Some people even seem to embrace the destruction of the natural world, as long as the project benefits humanity, a view I find ignominious, and ignorant.

Hence, repeating the question: what can we do? Doom, despair and despondency are not helpful, but rather self-destructive. We need answers, at least our personal ones, and my firsts are study and education. I have become a biologist because I am fascinated by how life emerged and evolved, by the many intriguing ways in which life forms from viruses and bacteria to plants and animals have 'found' ways to exist and co-exist in all corners of our planet. For each species a story unfolds in front of the inquisitive eye, about how individuals wander through life, with whom they interact, how they respond to what life throws at them, how and how long they survive, if and how much they reproduce. Soooo many life histories. Pick your favourite branch of the tree. Birds. Go out and study them in their natural habitat, watch them with your own eyes or with the help of modern-day devices, photograph or film them, and describe what you learned (and send the manuscript to Ardea, if you wish). So much to be discovered, so little time! Studying a few of those life histories and writing and talking about them, to fellow scientists and to the general public, gives purpose to (my) life. Perhaps even more importantly, it helps instil among all of us feelings of wonder and love for what is behind the voracious, but soulless term 'biodiversity'. Isn't it true that we care about (and hence want to protect) only what we know and love and value?

My second answer is doing what you can in your circle of influence. If you happen to be a billionaire, you can buy land, ensure its protection and create a national park, or several parks, as the Tompkins did in southern Chile and Argentina (in total more than 60,000 km², according to their website www.tompkinsconservation.org). If – as is more likely – you are Jane or John Doe or their equivalent in a country with a different language, you can plant trees, become active in a local conservation organization, teach children

about the wonders of biology, convince billionaires to buy land or politicians to protect it, or whatever else it is that befits your passion and pleasure.

A paper in this issue of Ardea reports on the local removal of mammalian predators and its effects on the breeding success of Black-tailed Godwits *Limosa limosa* (Loonstra *et al.* 2024). This and similar studies leave me with a palpable sense of ambiguity. I read a sinister account of killing, of humans (micro-)managing nature, deciding who lives and who dies. I also see an example of what a biologist can accomplish. Heinrich Belting works for the Office for Water Management, and Coastal and Nature Conservation of the federal state of Lower Saxony in Germany (in German: Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz). The name suggests he could be a bureaucrat, but I can assure you: he is not. Based at a nature conservation station near a shallow lake (Lake Dümmer) not far from the city of Osnabrück, Heinrich and his team have restored an area of peatland and marshy grassland that had been drained for agriculture. Starting in the late 1980s, the team relocated some farmers – with governmental support – and changed the water management of the area. Although rewetting may not (quickly) return drained peatland to its original state (Kreyling *et al.* 2021), what Heinrich and his colleagues achieved at Lake Dümmer is delightful nevertheless. The number of grassland-breeding waders such as the Black-tailed Godwit and the Common Redshank *Tringa totanus* have increased spectacularly, and the area is now an important stop-over site for the Ruff *Calidris pugnax*, with some individuals again staying to breed.

The moorland around Lake Dümmer is a wonderful area to go birding (and to study birds), but what I find most remarkable is something else. When I visited the Ochsenmoor on a sunny weekend in spring, I noticed many cars parked along the narrow road that passes by an observation tower which affords a more expansive view of the reedbeds along the southern edge of the lake. I expected to see birders and photographers, but what I saw were people in lawn chairs, just being there (as in the German verb 'verweilen') or having a picnic. They appeared to simply enjoy being part of this land- and soundscape, surrounded by a gull colony, ducks and geese, waders and songbirds. They did not carry binoculars, nor did they seem particularly interested in birds, but I felt that I understood why they were there. The wide-open landscape full of emerging springtime life reminded me of Tim Dee's 'greenery' (Dee 2020) and of a field trip to Tanzania many years ago. One can be there with a sense of peace, at home in the world,

far from the ruckus. I think – pitifully naively, I'm sure – that large-scale habitat protection, and the creation of natural parks and greener cities are better ways to reduce our society's anger issues and support democracy than investing in economic growth and technological innovations.

As I'm sure you've noticed by now, my 'suggestions from the Lakeshore' are no solutions either. They are denial too; an attempt to avoid despair by focusing on nature's beauty and on a wave of success stories in an ocean of disaster. Will we go down in history as life's mass murderers? And will anyone still be there to record that history? Time to go birding.

Bart Kempenaers

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