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Restoring what is broken

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Restoring what is broken:

wildlife law in an era of ecological emergency, eye-opening science,
and maturing morality



Inaugural address, spoken by
Prof. dr. Arie Trouwborst

Prof. dr. Arie Trouwborst (1975) is full professor of nature conservation law at Tilburg University as of 1 March 2023. He studied international and European law at Utrecht University, where he became a PhD candidate and research associate with the Netherlands Institute for the Law of the Sea. He received his PhD, with distinction, in 2006 with a thesis on the precautionary principle. After several years as assistant professor of international law in Utrecht he joined Tilburg Law School in 2009, working there since as assistant and associate professor of environmental law. He is also an extraordinary professor at North-West University in South Africa.

The primary focus of Trouwborst's research and teaching is on the contribution of international, European and national law to the conservation, sustainable use, and restoration of biodiversity. Recurrent themes include protected areas and species, ecosystem restoration, human-wildlife conflict, sustainable use of wildlife, and invasive alien species. Concrete issues featuring in recent work include wolf and bear management, the legal status of rewilded horses and cattle, leopard trophy hunting regulation, and the biodiversity impacts of free-roaming domestic cats.

Trouwborst received various research grants and prizes, including Veni and Vidi grants from the Netherlands Organization for Scientific Research (NWO), for projects on the adaptation of international nature conservation law to climate change, and the conservation and management of large carnivores in Europe. He frequently conducts advisory work for international organizations, national and provincial governments, and NGOs. He is a member of several specialist groups of the International Union for the Conservation of Nature (IUCN), including the Large Carnivore Initiative for Europe and the Human-Wildlife Conflict & Coexistence Specialist Group.

The Tilburg chair of nature conservation law is co-sponsored by the Province of Noord-Brabant, the Dutch Society for Nature Conservation (Natuurmonumenten), and the Brabants Landschap Foundation.

Restoring what is broken:
wildlife law in an era of ecological emergency,
eye-opening science, and maturing morality

Prof.dr. Arie Trouwborst

Inaugural address,
delivered in slightly abbreviated form on the occasion of the public acceptance
of the position of professor of nature conservation law at Tilburg University on
January 26th, 2024.

To Marcos, Jaime, Elvira, Mama, Papa, and the rest of my Dutch and Spanish family (including Lobo), to beauty and truth, and to the greater glory of whales, hippos, elephants, rhinos, bison, buffalo, moose, zebras, kudus, nyalas, ibex, aoudads, roe deer, wild boar, brown bears, lions, leopards, hyenas, wolves, jackals, foxes, hedgehogs, oak trees, tamboti trees, baobabs, birches, hawthorns, rowans, willows, mopane, ivy, columbines, cornflowers, impala lilies, loosestrifes, esparto grass, Neptune grass, cuttlefish, dreamfish, ornate wrasses, jewelled lizards, crocodiles, geckos, red admirables, swallowtails, swallows, swifts, nightjars, eagles, eagle owls, vultures, storks, shearwaters, gannets, long-tailed ducks, widgeons, teals, greenshanks, green sandpipers, ravens, rollers, turacos, paradise flycatchers, emerald-spotted wood doves, bushshrikes, bulbuls, bee-eaters, bluethroats, blackcaps, willow warblers, goldfinches, gold-breasted buntings, white-throated sparrows, linnets, redstarts, robins, and mistle thrushes – and, why not, hadada ibises

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Restoring what is broken:
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“All men are brothers, we like to say, half-wishing sometimes in secret it were not true. But perhaps it is true. And is the evolutionary line from protozoan to Spinoza any less certain? That also may be true. We are obliged, therefore, to spread the news, painful and bitter though it may be for some to hear, that all living things on earth are kindred.”

BY EDWARD ABBEY, *DESERT SOLITAIRE*, 1968

I. Prelude



Singing starling. Photo: Jogchum Vrielink

Mijnheer de Rector Magnificus,

Mijnheer de Decaan,

Dear colleagues, students, family¹ and friends,

Ladies and gentlemen,

Have you already heard the song of the mistle thrush this year?² The mistle thrush is one of the earliest singers, announcing a still faraway spring from a high treetop. Its song sounds a little melancholic, and many people find it beautiful.³ But that may not be why the bird sings. Saint Francis of Assisi would surely have said the thrush is singing to glorify its Creator. There appears to be no hard scientific evidence yet that this is true, but who knows.

There is a growing body of research, however, that suggests birds enjoy singing. For example, when starlings sing together, their brains release the same opioid that makes us feel good when we sing.⁴ That is not surprising, because we are kin under the skin, as ecologist Carl Safina puts it.⁵ We share the basic structure of our brains, as well as our hormones, with many other species. Indeed, there is now mounting scientific evidence concerning the sentience and intelligence of non-human animals, and even plants, which indicates that many differences between us and them are differences of degree, not of kind.⁶ One of the questions raised in this lecture is what these insights might mean for the application and further development of nature conservation law, also known as biodiversity law or, my own favourite term, wildlife law.⁷

But first, let us look at the implications of another key insight from biological science that is illustrated by our mistle thrush, concerning the rules that have been governing the ebb and flow of plants and animals and the ecosystems they compose since ancient times.

¹ I thank Elvira Martínez Camacho for enduring a proofreading of a draft version of this lecture.

² *Turdus viscivorus* (in Dutch: grote lijster).

³ See, e.g., these reflections on the mistle thrush by my birding buddy Maarten Graat, on his website with bird photos and stories (in Dutch, but easily translatable): <https://www.mijnvogelverhalen.nl/index.php/1901/01/01/grote-lijster-turdus-viscivorus/>.

⁴ S.A. Stevenson et al., 'Endogenous opioids facilitate intrinsically-rewarded birdsong', *10 Scientific Reports* 2020, 11083.

⁵ C. Safina, *Beyond words: what animals think and feel*, Picador 2016.

⁶ See below.

⁷ These terms are understood here to be roughly synonymous, and as referring to legal instruments, at levels from local to global, aimed at the conservation, restoration, and/or sustainable use of biodiversity, ecosystems, natural areas, species, and populations of wild fauna and flora. On the continued relevance of the term 'wildlife' in the Anthropocene, see J. Lorimer, *Wildlife in the Anthropocene: conservation after nature*, University of Minnesota Press 2015.

2. The Serengeti rules



2.1. A rule-based world

Indeed, the ecologically literate among you may by now be getting impatient to hear me mention the key functions of birdsong in terms of the species' social organization and reproduction. And indeed, it is scientifically quite well-established that birds sing to attract mates and, very importantly, to claim, mark and defend territories.⁸ Although poets may be sorry to hear this, most ornithologists would translate the song of the mistle thrush as something like this: "I'm a cool and capable bird. All of this area is mine. Pretty girls are welcome. But blokes, stay [the bleep] away, or else..."⁹

Many other species are likewise territorial. This way, they divide space between them, ensuring sufficiency of resources and avoiding overpopulation. Crucially, such territorial competitive behaviour is generally aimed at conspecifics only. The mistle thrush will chase other male thrushes from its turf, but not starlings, goldfinches, mice or bats. In other words, it happily coexists with other species. Such territoriality is just one example of the many intricate mechanisms laid bare by ecological science that ensure that, wherever you go, if nature is allowed to run its course this almost invariably results in rich ecosystems, where a multitude of organisms from many different species are all flourishing in the same area of land or sea.¹⁰

It is intriguing, especially for lawyers, to realize that we live in a fundamentally rule-based world. Not just the laws of physics and chemistry, but also remarkable rules that govern life at all levels. "Every cell contains a society of molecules, every organ a society of cells, every body a society of organs, every habitat a society of organisms."¹¹ And the numbers, diversity and behaviour of all of these molecules, cells, organs and organisms are mysteriously and wonderfully regulated by sets of rules.¹²

⁸ E.g., S. Collins, 'Vocal fighting and flirting: the functions of birdsong', in P.R. Marler & H. Slabbekoorn (eds.), *Nature's music: the science of birdsong*, Academic Press 2004, 39.

⁹ For Dutch readers, a more elaborate interpretation of a blackbird's song is rendered in J. Nouws, 'Vogeltje, wat zing je vroeg', *Metro*, 21 June 2002; reproduced in D. de Vos & L. de Meersman, *Wat zingt daar?*, KNNV Uitgeverij 2005, 10.

¹⁰ E.g., R. Smith & T. Smith, *Elements of ecology*, 9th ed., Pearson Education Limited 2015.

¹¹ S.B. Carroll, *The Serengeti rules: the quest to discover how life works and why it matters*, Princeton University Press 2016, 268.

¹² For a good introduction and further sources see Carroll, id.

At the level of ecosystems, the regulatory framework that determines the kinds and numbers of different plants and animals in a given place, includes territoriality and other forms of competition, plant food supply, predation, disease, and migration. It involves positive, negative, and double-negative regulation as well as feedback mechanisms. Some of it is bottom-up, some of it top-down, and some of it density-dependent. Body size also matters, with smaller animals regulated more strongly by predators, and larger animals by food supply. Some species, so-called keystone species, are more influential than others, and their disappearance or return can cause ripple effects – ‘trophic cascades’ – influencing the ecosystem at multiple levels.¹³ In a celebrated book, biologist Sean Carroll has presented the current state of the science on these regulatory mechanisms, calling them the ‘Serengeti rules’.¹⁴ These are the rules responsible for the diversity and abundance of life that have been the norm on Earth for eons. From the tropics to the poles, for millions upon millions of years, ever-changing casts have been performing in a continuous play based on the same enduring ecological principles.¹⁵

2.2. Heading for the Eremocene

Enter humans. Humans are also territorial, and law of course has a central role there. We organize our use of space through notions such as sovereignty, jurisdiction, private land ownership, and land use rights. However, a fundamental difference with other species like the mistle thrush, is that our territoriality is not just aimed at other humans, and does not just affect them. Instead, it is quite typical for our species to stake exclusive claims to land and sea; to be highly intolerant of other species that we consider harmful; and not to care very much about the fate of creatures that are simply incompatible with our plans.

In fact, using its above-average intellectual and technological capacities, *Homo sapiens* has managed to evade, escape or ignore – for the time being – many of the Serengeti rules. For instance, those rules say that predators do not normally wipe out their prey, but humans did, time and again. Our species, with its superior hunting skills, control of fire, agriculture, and other technologies, has come

¹³ B. Macdonald, *Cornerstones: wild forces that can change our world*, Bloomsbury 2022.

¹⁴ Carroll, *supra*; for lively illustrations see also, e.g., M. Reardon, *Shaping Kruger: animal behaviour, ecology and management in Africa's premier game park*, Struik Nature 2012

¹⁵ For a fascinating rendering of this play, see T. Halliday, *Otherlands: a world in the making*, Penguin 2022.

to dominate, modify, simplify, decimate and outright erase many pre-existing ecosystems.¹⁶ Breaking with a pattern and a set of rules that have been in place for many millions of years appears to be something that should make anyone at least a little nervous, but this is exactly what we have been doing.

To realize how truly extraordinary the situation has by now become, imagine we were to put all terrestrial mammals, including ourselves, on a giant set of scales. According to a recent estimate, humans and their livestock now account for a massive 96% of this total weight.¹⁷ Wild mammals, including all the world's deer, boar, antelope, buffaloes, bears, giraffes, rhinos, hippos and elephants, have dwindled to just 4% of the total biomass.¹⁸

Imagine that our ancestors had behaved differently and paid a little more respect to the spirit if not the letter of the Serengeti rules, and that instead of the winner-takes-all approach they had employed a model of coexistence. Then, the Delta area that today we call the Netherlands, would have been teeming with life. First of all, you would be able to see many animals and plants we can still – or again – come across in parts of the country today, like lapwings and beavers and wolves, and eider ducks and seals in the sea. But in the North Sea you would also find extensive oyster reefs, sharks and huge rays, and astoundingly large shoals of fish. The rivers would be home to pelicans and giant sturgeons; you would run into bison all over the place; there would be big herds of aurochs and wild horses roaming the floodplains; and moose and buffaloes in the marshes. Besides wolves there would be lynx and bears, but also leopards and lions; there would even be rhinoceros and elephants. And at dawn and dusk, the voice of our mistle thrush would every so often have mixed with the song of hyenas.¹⁹

In fact, to get a picture of a non-degraded European ecosystem, imagine a Serengeti with a European touch, with wild horses, wild boar and moose instead

¹⁶ See, e.g., R. Leakey & R. Lewin, *The Sixth Extinction: patterns of life and the future of humankind*, Anchor Books 1996.

¹⁷ Y.M. Bar-On et al., 'The biomass distribution on Earth', 115(25) *PNAS* 2018, 6506.

¹⁸ *Id.*

¹⁹ For a more complete picture, see, e.g., T. Flannery, *Europe: a natural history*, Atlantic Monthly Press 2019; R. Barnett, *The missing lynx: the past and future of Britain's lost mammals*, Bloomsbury Wildlife 2019; and A. Trouwborst & J.-C. Svenning, 'Megafauna restoration as a legal obligation: international biodiversity law and the rehabilitation of large mammals in Europe', 31 *Review of European, Comparative & International Environmental Law* 2022, 182.

of zebras, warthogs and giraffes, and with wolves and several bear species added to the carnivore mix. Current nature is really “a shadowland, a dim, flattened relic of what there once was,” as one author put it.²⁰ Another likens it to a ruin: “A beautiful ruin, but a ruin all the same.”²¹ For during the last 50,000 years – which is the blink of an eye in geological and evolutionary terms – the European Serengetis have been largely erased, little by little, through human action.²² First this was done through hunting only, later also through habitat loss due to agriculture, and then on top of that the pollution and infrastructure that came with the industrial revolution, the invasive alien species that spread as a result of increased human mobility, and finally also climate change.²³

And here we are today, in an unprecedented global biodiversity crisis. You know the headlines. Of the currently surviving species, about a *million* face extinction unless urgent action is taken.²⁴ Indeed, the scientific evidence indicates that we are on the verge of a mass extinction event, on a scale that has not been seen since the dinosaurs went extinct 65 million years ago. But this time *we* are the meteorite.²⁵ The situation is captured increasingly well by the alternative name for the Anthropocene coined by the late biologist Edward O. Wilson. To describe what he glumly called this “biologically final age in which the planet exists almost exclusively by, for, and of ourselves,” he chose the term *Eremocene*.²⁶ The ‘Age of Loneliness’, where all that is left is “people, our domesticated plants and animals, and our croplands all around the world as far as the eye can see.”²⁷

²⁰ G. Monbiot, *Feral: rewilding the land, sea and human life*, Penguin 2014, 89.

²¹ J.B. MacKinnon, *The once and future world: nature as it was, as it could be*, Vintage Canada 2014, 101.

²² E.g., R.T. Lemoine et al., ‘Megafauna extinctions in the late-Quaternary are linked to human range expansion, not climate change’, 44 *Anthropocene* 2023, 100403.

²³ See, e.g., E. Kolbert, *The Sixth Extinction: an unnatural history*, Bloomsbury 2015.

²⁴ IPBES, *Summary for policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, IPBES/7/10/Add.1, 2019, 4.

²⁵ See, e.g., R. Dirzo et al., ‘Defaunation in the Anthropocene’, 345(6195) *Science* 2014, 401; G. Ceballos et al., ‘Biological annihilation via the ongoing Sixth Mass Extinction signaled by vertebrate population losses and declines’, 114(30) *PNAS* 2017, E6089; Leakey & Lewin, *supra*; and Kolbert, *supra*.

²⁶ E.O. Wilson, *Half-Earth: our planet’s fight for life*, Liveright Publishing 2016, 20.

²⁷ *Id.*

2.3. Self-control

Sean Carroll gives things yet another spin by saying that “[w]e have taken control of biology, but not of ourselves.”²⁸ But if we want to prevent the Sixth Extinction, and move away from the prospect of the Eremocene, then obviously, controlling ourselves is exactly what we must do. According to the scientific consensus as crystallized in the authoritative reports of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES), the issue is not just human population overshoot as such – to stick to ecological science terminology – but especially also the oversized ecological footprint of the average human being.²⁹

To change the tide, further losses of biodiversity must be avoided, and ambitious efforts undertaken to restore the damage done as much as possible. This will require, as the IPBES reports put it, “transformative change” in social, economic and technological structures worldwide, so as to make agriculture, forestry, fisheries, and other human activities truly sustainable.³⁰ As the heads of government of 96 countries, including the Netherlands, put it in the Leaders Pledge for Nature: “We are in a state of planetary emergency. ... A transformative change is needed: we cannot simply carry on as before.”³¹

Two essential components of any strategy to stem the crisis are (1) ‘simply’ to reserve and re-create sufficient space for wild ecosystems to flourish, and (2) to ensure that any exploitation of natural resources or other human activity happens “in a way and at a rate that does not lead to the long-term decline of biological diversity,” as the Convention on Biological Diversity puts it.³² To illustrate the dimensions of the first challenge, various studies indicate that in order to safeguard most species and ecosystems in the long term, at least 40-50% of the planet’s surface should be designated, in a representative way, as areas where nature conservation and restoration have priority.³³ Currently, just about 17% of

²⁸ Carroll, *supra*, 9.

²⁹ IPBES (2019), *supra*.

³⁰ *Id.*, 27.

³¹ 2020 Leaders Pledge for Nature, <https://leaderspledgefornature.org>.

³² 1992 Convention on Biological Diversity (CBD), Art. 1.

³³ E.g., E. Dinerstein et al., ‘An ecoregion-based approach to protecting half the terrestrial realm’, 67 *BioScience* 2017, 67; J.R. Allan et al., ‘The minimum land area requiring conservation attention to safeguard biodiversity’, 376(6597) *Science* 2022, 1094; also Wilson, *supra*.

the land and 8% of the sea has a protected status, and only a fraction of these areas actually receive *effective* protection.³⁴

Of the various regulatory mechanisms available to achieve the required self-control, a role is evidently reserved for law. Ecological rules, and the physical reality of a finite planet, can be translated into binding and enforceable legislation delimiting human activities to sustainable levels.³⁵ An area of law with a special significance in this regard is, of course, wildlife law, a.k.a. nature conservation law. It consists of legal instruments, at international, European, national and local levels, expressly aimed at the conservation, restoration and/or sustainable use of ecosystems, species, or populations of wild fauna and flora.³⁶ Like law in general, wildlife law can require, condition, and outlaw certain human actions. Typical examples are (1) requirements to designate and safeguard protected areas, to take habitat restoration measures, or to reintroduce missing species; (2) regulations to ensure that hunting, fishing, and trading of wildlife is done sustainably; and (3) prohibitions of harmful projects such as road building in sensitive areas, and of the killing, capturing and disturbing of protected species such as wolves, or mistle thrushes.

³⁴ World Database of Protected Areas, <http://www.protectedplanet.net>.

³⁵ G. Chapron et al., 'Bolster legal boundaries to stay within planetary boundaries' 1 *Nature Ecology & Evolution* 2017, 0086, 1.

³⁶ On international wildlife law see, e.g., M. Bowman et al., *Lyster's International Wildlife Law*, 2nd ed., Cambridge University Press 2010; and A. Trouwborst et al., 'International wildlife law: understanding and enhancing its role in conservation', 67 *BioScience* 2017, 784.

3. The reasons for wildlife law



Lion in Kruger National Park. Photo: Elvira Martínez Camacho.

3.1. An old question

So, limiting our ecological footprint by imposing and enforcing legal boundaries is an obvious strategy to address the biodiversity crisis, and one that we already have considerable experience with. But why indeed would we want, or why should we, keep going down this road of self-control? This is a question often asked these days, also in Europe and the Netherlands. Why worry about the nitrogen overload from cattle farms and industry that is squeezing the life out of ecosystems in Natura 2000 sites here in the province of Noord-Brabant and elsewhere in the Netherlands? Why tolerate troublesome beavers, badgers and wolves? Why care about the handful of bats I may be dislodging or killing when I insulate the cavity walls of my house? Why have all this cumbersome and limiting wildlife legislation? Why stop ourselves from wiping out some more nature? Why indeed not every species for itself and the devil take the hindmost?

You may think this is an old question, with predictable answers. And you may be right. But the question is being asked too often to ignore it, certainly for a professor of nature conservation law. And that might be enough to put it center stage in this lecture. But I also think there are dimensions to the answer that are not yet receiving the attention they deserve. By taking this path I am walking in the footsteps of my predecessor, Kees Bastmeijer. At *his* inauguration in 2010, he addressed the same question, in a lecture titled “Every man for himself and nature for us all.”³⁷

3.2. Nature restoration for self-preservation

A good place to start is in the legal instruments themselves. What motivated the drafters of wildlife legislation? A representative example is the global Biodiversity Convention, adopted in 1992. Right at the outset, the Convention’s parties acknowledge that they are: “[c]onscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components,” and also of “the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere.”³⁸ Most of the values listed here – economic, recreational, aesthetic, and so forth – express the many values that biodiversity can have for humans. How great these values are is hard to say with

³⁷ C.J. Bastmeijer, *Ieder voor zich en de natuur voor ons allen: over de relatie tussen mens en natuur en de toekomst van het natuurbeschermingsrecht*, Boom Juridische Uitgevers 2011.

³⁸ CBD, Preamble.

precision, but scientific estimates are getting better, and indicate that the direct and indirect value of wildlife and ecosystems to humans – whether expressed qualitatively or in euros – is inconceivably big.³⁹

In his inaugural lecture in 2001, the late Peter van Wijmen, who was the first professor of nature conservation law here in Tilburg, spoke eloquently about the value of nature: “Nature as source and foundation; as buffer and as balance; as reservoir and refugium; she is the condition for human existence and is, as such, the most basic value.”⁴⁰ Indeed, as indicated in the last part of the Biodiversity Convention’s statement, the value of nature for people is literally existential. Ecology is the basis of everything else, and the most cardinal Serengeti rule of them all says that there is only one planet Earth.

To maintain stable and safe living conditions for our own species, there are ‘planetary boundaries’ in terms of ecosystem degradation and biodiversity loss, that simply should not be crossed.⁴¹ But the evidence strongly suggests we are no longer on the safe side of those boundaries.⁴² In short, a failure to take swift and effective biodiversity conservation and restoration measures could ultimately send humanity back to the caves,⁴³ or worse. Without the services provided by ecosystems, there are no functioning soils, no food, no clean water, no livable climate, no breathable air. Nature does not need people, but people definitely need nature.⁴⁴

3.3. The necessity of unyielding legal limits

The deterioration of ecosystems is, however, a gradual process. Each new generation of humans tends not to realize that the nature they grow up with is in a worse state than when their parents were young. And then they witness, and ultimately accept, a creeping further deterioration of nature in their lifetime.

³⁹ IPBES, *Methodological assessment report on the diverse values and valuation of nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, IPBES 2022

⁴⁰ P. van Wijmen, *Recht doen aan de natuur*, Katholieke Universiteit Brabant 2001 (translation from Dutch by present author).

⁴¹ J. Rockström et al., ‘A safe operating space for humanity’, 461 *Nature* 2009, 472

⁴² J. Richardson et al., ‘Earth beyond six of nine Planetary Boundaries’, 9 *Science Advances* 2023, 37.

⁴³ J. Bridle, *Ways of being – animals, plants, machines: the search for a planetary intelligence*, Penguin 2022, 15.

⁴⁴ For various cinematic illustrations of this point, see <https://www.conservation.org/nature-is-speaking/>.

Or in their political career. Due to this so-called ‘shifting baseline syndrome’,⁴⁵ we have almost completely forgotten that “the state of nature is a state of almost inconceivable abundance.”⁴⁶ Who still knows that having “clouds of butterflies” is the normal state of a woodland edge on a summer’s day;⁴⁷ that European rivers should literally be running thick with salmon and other migratory fish; let alone, that we should have had Natura 2000 sites for giant deer and rhinoceros?

And thus, over many human generations, the biodiversity crisis has grown to the astonishing proportions that it has, while many people, including decision-makers, still fail to grasp its dimensions and implications. We are witnessing the biggest catastrophe to unfold on Earth in many millions of years, but do not realize it because from our limited individual vantage points it is unfolding in slow-motion. Which perhaps helps to explain statements like this one by former British prime minister Margaret Thatcher. When the Falklands War broke out, she said: “It’s exciting to have a real crisis on your hands, when you have spent half your political life dealing with humdrum things like the environment.”⁴⁸

Given these dynamics and the strong drive in human societies to continue business as usual, there is an apparent need for clear, unyielding and enforceable legal limits and obligations to conserve and restore biodiversity.⁴⁹ That is to say, there is seemingly every reason to prioritize wildlife law and its effective implementation, and recognize it as the core of our own human version of the Serengeti rules.

In addition to improved implementation of existing nature conservation law, it may also be time for transformative changes in the law and indeed in legal orders. I am thinking, for instance, of scholarly work taking place in Tilburg and elsewhere on ways to better incorporate what we now know about the biosphere and the consequences of its degradation, into the constitutional architecture of

⁴⁵ E.g., F. Vera, ‘The shifting baseline syndrome in restoration ecology’, in M. Hall (ed.), *Restoration and history*, Routledge 2010, 98; M. Soga & K.J. Gaston, ‘Shifting baseline syndrome: causes, consequences, and implications’, 16 *Frontiers in Ecology and the Environment* 2018, 222; M. Argeloo, *Natuuramnesie*, Atlas Contact 2022.

⁴⁶ Monbiot, *supra*, 231.

⁴⁷ B. Macdonald, *Rebirthing: restoring Britain’s wildlife*, Pelagic Publishing 2019, 77.

⁴⁸ Cited in S. Barnes, *How to be a bad birdwatcher*, Short Books 2004, 189.

⁴⁹ Bastmeijer, *supra*, 80.

our human societies.⁵⁰ For example, I look forward to further discussions with my colleague Han Somsen regarding his ideas on a geo-constitutional legal order that gives avoidance of ecological Armageddon the priority that it seems to deserve.⁵¹ This would be a legal order reflecting the ultimate supremacy of the planetary Serengeti rules over any man-made rules, and employing regulatory regimes that simply do not allow for non-compliance with essential tenets of biodiversity law.⁵²

3.4. A higher right to exist

Averting the Eremocene for our own sakes, however, is only part of what makes wildlife conservation and wildlife law important. There is a very different type of reason for nature conservation, which is indeed the first one mentioned by the drafters of the Biodiversity Convention, namely, the “intrinsic value” of biodiversity.⁵³ That is, the inherent value that wildlife has, in and of itself, regardless whether humans find it useful, harmful, or even repulsive.⁵⁴ This intrinsic value can, by definition, not be expressed in euros. The Convention’s parties recently re-emphasized that biodiversity loss must be reversed “for the benefit of all living beings.”⁵⁵

The intrinsic value of nature has been recognized on many other occasions. The Bern Convention on European Wildlife Conservation acknowledges the intrinsic value of “wild flora and fauna”;⁵⁶ the new Agreement on Biodiversity in the High Seas also highlights the “inherent value” of biodiversity;⁵⁷ and the

⁵⁰ See, e.g., L. Kotzé, *Global environmental constitutionalism in the Anthropocene*, Hart Publishing 2016; M. Petersmann, ‘Response-abilities of care in more-than-human worlds’, 12 *Journal of Human Rights and the Environment* 2021, 102; and Tilburg Law School’s collaborative research project ‘Constitutionalizing in the Anthropocene’ (CitA), <https://constitutionalizing-anthropocene.org/>.

⁵¹ J. Somsen, ‘De geo-constitutionele rechtsstaat: een hervormingsagenda’, *Tijdschrift voor Omgevingsrecht* 2023, 33

⁵² Id.

⁵³ CBD, Preamble.

⁵⁴ M. Fosci & T. West, ‘In whose interest? Instrumental and intrinsic value in biodiversity law’, in M. Bowman et al. (eds.), *Research handbook on biodiversity and law*, Edward Elgar 2016, 55; C. Batavia & M.P. Nelson, ‘For goodness sake! What is intrinsic value and why should we care?’, 209 *Biological Conservation* 2017, 366

⁵⁵ CBD COP Decision 15/4, 2022, par. 7(k).

⁵⁶ 1979 Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), Preamble.

⁵⁷ 2023 Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (not yet in force), Preamble.

Antarctic Environment Protocol recognizes the “intrinsic value of Antarctica.”⁵⁸ Biodiversity’s intrinsic value is furthermore recognized in many national laws, including Dutch environmental legislation.⁵⁹ An especially striking formulation of intrinsic value can be found in the World Charter for Nature, adopted by the UN General Assembly in 1982.⁶⁰ It states that “[e]very form of life is unique, warranting respect regardless of its worth to man.”⁶¹ US president Nixon also grappled with the intrinsic value of wildlife, and its source, when in 1972 he stated his intuition that “wild places and wild things” have “a higher right to exist – not granted them by man, and not his to take away.”⁶²

The intrinsic value of wildlife as such has thus been recognized in policy and law for quite some time. But over the years, there has been a significant increase in the dimensions, the depth, the weight, of this intrinsic value – or at least in our understanding thereof. A major cause of this is the growing scientific understanding of intelligence, sentience and agency in non-human creatures – of their ways of being.

3.5. Everything is really everyone

For a long time, the dominant paradigm was that animals (I will use this word as a shorthand for non-human animals) lack conscious thought, and lack the awareness of sensations and feelings. In other words, animals can be hungry, but not feel hungry; they can find themselves in desperate situations, but not actually feel desperate. They don’t think, they don’t remember, they don’t plan, they certainly don’t love. All these capacities, and many others, were thought of as exclusively human. Animals were essentially considered mindless biological machines, responding to internal and external impulses in a fundamentally automatic and pre-programmed way.⁶³

⁵⁸ 1991 Protocol on Environmental Protection to the Antarctic Treaty, Art. 3(1).

⁵⁹ 2016 Environment and Planning Act (Omgevingswet), Art. 1.3.

⁶⁰ UNGA Resolution 37/7, 1982.

⁶¹ Id., Preamble.

⁶² R. Nixon, Special message to the Congress outlining the 1972 Environmental Program, 8 February 1972.

⁶³ See, e.g., C. Safina, *supra*; F. de Waal, *Are we smart enough to know how smart animals are?*, Granta 2017; F. de Waal, *Mama’s last hug: animal emotions and what they teach us about ourselves*, Granta 2020.

That has changed under influence of a steady flow of scientific research, and current understanding is far removed from this mechanistic paradigm. Many of you will know this, thanks perhaps to popular science books by Frans de Waal and others.⁶⁴ According to mainstream science nowadays, animals and humans have quite a lot in common. It turns out that birds, bats, and badgers can love, hate, and suffer; play and argue; scheme, choose, and remember; and have individual personalities.⁶⁵ A recent study added proof to the long-standing hunch that at least some animals can imagine things that are not in the here and now.⁶⁶ And animals as diverse as buffaloes and honeybees engage in democratic decision-making.⁶⁷

Animals have moods, too. They can be surprisingly tolerant when feeling good, but don't get too close when they are stressed and cranky; that goes for anything from wild boar to wasps. We easily recognize in other beings the bonds of family connections and friendships, affectionate and aggressive behaviour, curiosity, and so on. Whether it's humans, wolves, orcas or albatrosses, play is play, envy is envy, courtship is courtship.⁶⁸

And mischief is mischief. One of the persistent vices that others – especially my brothers, my wife and, I shamefully admit, my kids – have had to suffer from me throughout my life is a quite irrepressible urge to scare people. Patiently waiting in a dark bathroom or under a bed, or just silently creeping up on someone, and then making a sound, or putting a hand on their shoulder. I know they won't be amused, but the effect is just too gratifying. Now if you think this is a typical human thing to do, one of those things that sets us apart from other species, think again. The internet has quite a few videos showing that people like me are

⁶⁴ Id.

⁶⁵ Emma Marris captures much of this nicely, when she writes: “Far from being creatures of pure instinct, carrying out a limited number of behavioral routines like a non-player character in a video game, individual animals live in a massively complex interspecific social world, constantly observing the goings-on around them, making choices, solving problems, finding food, raising young – and even pursuing joy. When you see a bat briefly illuminated in the moonlight, it isn't just ‘a bat,’ it is a particular bat, with particular personality traits, memories of its life, a family it cares about, and a plan for at least the immediate future.” E. Marris, *Wild souls: freedom and flourishing in the non-human world*, Bloomsbury 2021, 27.

⁶⁶ C. Lai et al., ‘Volitional activation of remote place representations with a hippocampal brain-machine interface’, 382 *Science* 2023, 566.

⁶⁷ E.g., H.H.T. Prins, *Ecology and behaviour of the African buffalo: social inequality and decision making*, Chapman & Hall 1996, 218-236.

⁶⁸ Based on Safina, *supra*.

not alone in the animal kingdom.⁶⁹ My favourite is a male lion silently sneaking up on a sleeping lioness.⁷⁰ I bet I know exactly what's going on in that big furry head: 'I'm going to scare the daylight out of this one; she'll be mad, but it will be so worth it.'

Moreover, research is revealing much about the unique ways of being and experiencing the world of many creatures that are not like us at all. It appears that even plants are conscious in their own ways, and can cooperate, recall past events, and plan for the future.⁷¹ In any case, in light of current scientific understanding, it appears quite accurate when indigenous peoples speak of the Beaver people, the Raven people, and even the Birch or Willow people.⁷² "Everything is really everyone," is how James Bridle puts it in a recent book on intelligence.⁷³ He calls the developing scientific insights in this area a "trick of the light."⁷⁴ Because "these other minds have always been here, all around us, but Western science and popular imagination, after centuries of inattention and denial, are only just starting to take them seriously."⁷⁵ And quite inevitably, these insights give new meaning, and further weight, to law and policy commitments in the area of biodiversity conservation, which are meant to ensure that the ecosystems composed of all these sentient creatures are given the space to thrive.

⁶⁹ E.g., <https://www.youtube.com/watch?v=8-r0aoLFltg> (black-backed jackal biting tail of sleeping lion); <https://www.youtube.com/shorts/Ttqs25lMNdg> (raven scaring wolf); a notable book on raven intelligence and playfulness is B. Heinrich, *Mind of the raven: investigations and adventures with wolf-birds*, Ecco 2002.

⁷⁰ <https://www.youtube.com/watch?v=kyJUQuaECrg>.

⁷¹ See, e.g., P. Calvo & N. Lawrence, *Planta sapiens: unmasking plant intelligence*, Little, Brown 2022; on legal implications of this knowledge, see, e.g., J. van Laarhoven & R. Claerhoudt, 'A new leaf: is it time to de-objectify plants in private law?', under review with *Transnational Environmental Law*.

⁷² E.g., R.W. Kimmerer, *Braiding sweetgrass: indigenous wisdom, scientific knowledge and the teachings of plants*, Penguin 2020, 58.

⁷³ Bridle, *supra*, 18.

⁷⁴ *Id.*, 10-11.

⁷⁵ *Id.*

4. The future of wildlife law



European bison in the Dutch dunes. Photo: Jaime M. Trouwborst Martínez.

4.1. Shedding anthropocentrism

In the first part of this lecture, we looked at the intricacy and complexity of ecological dynamics and relationships as regulated by the Serengeti rules. We faced the fact that humanity's attempts to escape these rules are ultimately doomed to fail. Employing an anthropocentric approach, whereby human interests are considered to trump those of ecosystems, just will not produce a happy end. A more holistic approach is called for, aimed at human-wildlife coexistence. This requires human self-restraint, and wildlife law appears to have a crucial role in this regard.

These conclusions seem to be reinforced by the insights we just considered, regarding the ways of being and inner lives of animals and plants. These insights underline that anthropocentrism, as in the belief that only humans have intrinsic value, is an immature worldview, as Sander Turnhout put it in a recent book.⁷⁶ Only as infants and toddlers we believe ourselves to be the center of the universe. But then you grow up, and realize that you are not alone. There are others, and their interests matter too. In the past, maturing insights about our fellow humans compelled societies to mark Eurocentrism, androcentrism, and racism as morally unacceptable. In the same way, to do justice to what we have come to know about *non*-human fellow creatures, it seems that anthropocentrism too must be left behind for moral reasons. We are not alone as a person, as a community, and as a country, but we are also not alone as a species.

This calls for a matching moral compass, and perhaps dusting off some old ethical proposals, such as Albert Schweitzer's all-inclusive 'reverence for life',⁷⁷ or Aldo Leopold's 'land ethic', according to which "a thing is right when it tends to preserve the integrity, stability and beauty of the biotic community," and "wrong when it tends otherwise."⁷⁸ Ethics and law now face the challenge of figuring out how to reflect that other species are not our "underlings" but "other nations",⁷⁹ and working out models that safeguard the autonomy and flourishing of ecological communities in ways that are meaningful but also workable – for

⁷⁶ S. Turnhout, *Dan staat het gras als liefde: een toekomst voor natuur in Nederland*, Noordboek 2023, 84.

⁷⁷ A. Schweitzer (H.E. Robles, ed.), *Reverence for life: the words of Albert Schweitzer*, Maurice Bassett 2017.

⁷⁸ A. Leopold, *A Sand County almanac: with essays on conservation from Round River*, Ballantine Books 1970, 262.

⁷⁹ H. Beston, *The outermost house*, Holt 2003, 25.

instance, by exploring parallels with public international law concepts such as sovereignty, self-determination, conquest and colonization.⁸⁰

Whichever way, because it is not uncommon for people, individually or collectively, to relapse into toddler mode, a key role is reserved for law to keep selfishness in check. In particular, it is for nature conservation law to push back against anthropocentric urges when they arise, and to make sure the interests of voiceless non-human individuals and collectives are taken seriously.⁸¹ In this sense, when wildlife legislation forces us to coexist with wolves, and forces a transition away from animal farming because of unsustainable nitrogen emissions, then it is doing precisely what it is supposed to do.

4.2. Global goals and rights of nature

Indeed, one fitting way to take the interests of wildlife seriously, and to respect the Serengeti rules, is the wholehearted implementation of existing nature conservation law and policy. Of special significance in this regard is the Global Biodiversity Framework (GBF) adopted in Montreal in 2022, with its long-term vision of “a world of living in harmony with nature.”⁸² Agreed actions include generously giving ecosystems the space they need to flourish, by meeting the 30% protected area target by 2030,⁸³ and through biodiversity-inclusive spatial planning everywhere else;⁸⁴ restoring degraded ecosystems, again with a 30x30

⁸⁰ For a notable attempt, see S. Donaldson & W. Kymlicka, *Zoopolis: a political theory of animal rights*, Oxford University Press 2011.

⁸¹ “Of course, the phase one looks toward is a time in which such sentiments need not be prescribed by law”: C.D. Stone, ‘Should trees have standing? Towards legal rights for natural objects’, 45 *Southern California Law Review* 1972, 450, 497 (emphasis in original).

⁸² CBD COP Decision 15/4, 2022, par. 10.

⁸³ Id., Target 3: “Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.”

⁸⁴ Id., Target 1: “Ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes addressing land- and sea-use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.”

target;⁸⁵ taking effective species conservation and restoration measures, and aiming for human-wildlife coexistence while minimizing human-wildlife conflict.⁸⁶ Just as the internationally agreed 1.5 and 2 degree global warming thresholds⁸⁷ guide climate law and policy at regional and national levels, so the Montreal biodiversity targets provide an authoritative benchmark for the application and development of wildlife law and policy – in Noord-Brabant, in the Netherlands, in Europe, and around the world. And there is nothing impossible about meeting these targets, especially in the First World.⁸⁸

In addition to implementing current wildlife law commitments, a potentially transformative change in the law is the growing wave of recognitions of ‘rights of nature’.⁸⁹ If we believe that humans have inherent rights,⁹⁰ and we know that the differences between us and the rest of nature are only gradual, and we have acknowledged the intrinsic value of wildlife, then the question whether animals, plants, and their living communities also have, as Nixon put it, “a higher *right* to exist,”⁹¹ is not a strange one at all.⁹² Which is why, for instance, the town council of Eijsden-Margraten, in the southern tip of the Netherlands, recently adopted a motion to seriously explore whether nature in the municipality could be recognized as a legal person.⁹³

⁸⁵ Id., Target 2: “Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.”

⁸⁶ Id., Target 4: “Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.”

⁸⁷ 2015 Paris Agreement, Art. 2(1)(a).

⁸⁸ Indeed, in the words of Andrew Balmford, “in well-fed countries, the fundamental constraints may not be money or space, but imagination and aspiration.” A. Balmford, *Wild hope: on the front lines of conservation success*, University of Chicago Press 2012, 110.

⁸⁹ See, e.g., G. Chapron et al., ‘A rights revolution for nature’, 363 *Science* 2019, 1392; J. den Outer, *Rechten voor de natuur*, Lemniscaat 2023.

⁹⁰ E.g., the Preamble to the 1948 Universal Declaration of Human Rights speaks of the “inherent dignity” and “inalienable rights of all members of the human family.”

⁹¹ Nixon, *supra* (emphasis added).

⁹² See, e.g., M. Challenger (ed.), *Animal dignity: philosophical reflections on non-human existence*, Bloomsbury 2023.

⁹³ Raad van de gemeente Eijsden-Margraten, Motie Rechten voor de Natuur, submitted by PRO Eijsden, adopted 7 November 2023.

In many jurisdictions around the globe, from New Zealand to India and from Uganda to Spain, governments or courts or both have already been declaring that forests, mountains, rivers or nature as a whole, are legal persons and possess certain rights.⁹⁴ They are no longer seen as mere legal objects but as subjects. For instance, the Constitution of Ecuador states that nature “has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.”⁹⁵ And when damaged, nature indeed has “the right to be restored.”⁹⁶ Depending on the legal frameworks involved, rights of nature can be invoked and defended on nature’s behalf by any person or by specially appointed bodies.

Of course, such legal models come with questions. Which rights to recognize and of what entities; how to resolve clashes with conflicting rights and interests; and how to align the rights of nature with existing legislation, including wildlife law?⁹⁷ All the same, rights of nature approaches pack a powerful symbolic message. Moreover, they seem to have real potential to enhance the representation of wildlife and ecosystems in decisions affecting them, the weight given to their interests, and indeed the more effective application of current wildlife law.⁹⁸ Altogether, recognizing rights of nature, building on the realization that nature is not only of public interest but has private interests of its own,⁹⁹ may well be another promising way to more firmly anchor the Serengeti rules and the intrinsic value of wildlife in human legal frameworks.

4.3. Focus on flourishing ecosystems

It is important to note that none of the insights we have touched on this afternoon necessarily imply that the killing of animals and plants by humans as such ought to be off-limits. There are conceptual and pragmatic reasons for

⁹⁴ Chapron et al., *supra*; Den Outer, *supra*.

⁹⁵ 2008 Constitution of Ecuador, Art. 71.

⁹⁶ *Id.*, Art. 72

⁹⁷ E.g., Stone, *supra*.

⁹⁸ *Id.*; Chapron, *supra*; Den Outer, *supra*.

⁹⁹ L. Burgers, ‘Private rights of nature’, 11 *Transnational Environmental Law* 2022, 463.

this.¹⁰⁰ For instance, as many policies, laws and practices illustrate, recognition of the intrinsic value of wildlife can and often does go hand in hand with the sustainable use of that same wildlife by humans, including through hunting.¹⁰¹ Moreover, given the scale of the biodiversity crisis, wildlife laws and policies, and rights of nature approaches, logically tend to aim for thriving collectives like populations, species and ecosystems, rather than fixating on individual creatures. Meeting this aim will of course then serve the interest of the countless animals, plants and fungi composing those collectives.

Conversely, when public and political attention, no matter how well-intended, shift to the specific interests of particular individual wild animals, this can have unintended negative consequences for the long-term perspectives of associated ecosystems. For instance, such attention could interfere with efforts to control alien species threatening native wildlife, especially when the aliens are cute, such as raccoons and free-ranging domestic cats.¹⁰² Another case in point is legislation banning the import of hunting trophies. Contrary to what many people assume, such bans are actually bad news from a biodiversity conservation perspective, because in huge parts of Africa and elsewhere, hunting is providing crucial economic incentives to preserve wildlife habitat and to tolerate the presence of dangerous animals.¹⁰³ The killing of wildlife is a nuanced subject-matter and unpacking it further would take another lecture. Likewise, many of the other issues addressed today merit further research, and together with my colleagues

¹⁰⁰ For a more elaborate discussion (in Dutch), see A. Trouwborst, “‘Human-wildlife conflict’ en ‘human-wildlife coexistence’: de rol van het recht op weg naar duurzaam samenleven van mensen en wilde dieren”, *Tijdschrift Natuurbeschermingsrecht* 2023, nr. 5, 7. An English version is in the works, building on a lecture entitled ‘The growing (recognition of the) intrinsic value of wild animals and what it means for law and policy on human-wildlife coexistence – a global perspective’, delivered by the present author at the Symposium ‘Animal welfare, human rights, rights of nature, and human-wildlife coexistence’, 18-20 September 2023, Potchefstroom, South Africa.

¹⁰¹ E.g., H.H.T. Prins et al. (eds.), *Wildlife conservation by sustainable use*, Springer 2000; IPBES, *Thematic assessment report on the sustainable use of wild species*, IPBES Secretariat 2022. Concerning the law, the drafters of the CBD saw no contradiction between recognizing the intrinsic value of biodiversity and adopting the sustainable use of biodiversity as one of the Convention’s ultimate objectives; likewise, the aforementioned World Charter for Nature readily condones the use of wildlife as long as it is sustainable in the long term, stating the following main rule in this regard (par. 10(a)): “Living resources shall not be utilized in excess of their natural capacity for regeneration.”

¹⁰² See, e.g., A. Trouwborst et al., ‘Domestic cats and their impacts on biodiversity: a blind spot in the application of nature conservation law’, 2 *People & Nature* 2020, 235.

¹⁰³ See, e.g., IUCN, *Informing decisions on trophy hunting: a briefing paper for European Union decision-makers regarding potential plans for restriction of imports of hunting trophies*, IUCN 2016; A. Dickman et al., ‘Trophy hunting bans imperil biodiversity’, 365 *Science* 2019, 874; N. Bichel & A. Hart, *Trophy hunting*, Springer 2023.

and PhD and graduate students I hope to help take the scholarly dialogue forward in the years to come.

In this lecture, I have emphasized the instrumental and intrinsic values of wildlife; the tremendous necessity of giving nature more space; and the importance of human-wildlife coexistence. All of these are things my predecessors highlighted before me. I am old enough to realize that there are not many new things left to say, and that is alright. As the next professor of nature conservation law, I am just immensely proud to carry the torch that Kees Bastmeijer took over from Peter van Wijmen. I do not pretend to invent a different, let alone a better one. My task will quite simply be to continue paying close attention, by the light of its flame, to the dynamic landscape of changing circumstances and advancing scientific insights, and to ponder what these changes might mean for the law.

4.4. Restoring what is broken

The final, and possibly the most important thing I wish to highlight is reflected in the title of this lecture. Given the degraded state of biodiversity around the world, the scientific insights we have considered call for ambitious and effective ecosystem restoration efforts. This is why the current decade was declared the UN Decade on Ecosystem Restoration;¹⁰⁴ why there is a 2030 restoration target in the Global Biodiversity Framework;¹⁰⁵ why the European Commission came up with a Nature Restoration Regulation;¹⁰⁶ and why various restoration obligations already exist under international and European biodiversity law.¹⁰⁷ In fact, in a joint analysis with macro-ecologist Jens-Christian Svenning, we found that existing international law, interpreted in light of the state of the science, requires efforts to recompose the lost European Serengetis, or modern versions thereof, as far as possible – which turns out to be quite far.¹⁰⁸

¹⁰⁴ UN General Assembly Resolution 73/284 on the United Nations Decade on Ecosystem Restoration, A/RES/73/284, 2019; also <https://www.decadeonrestoration.org/>.

¹⁰⁵ CBD COP Decision 15/4, 2022, Target 2.

¹⁰⁶ Proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, COM/2022/304, 22 June 2022; at the time of writing, adoption of the heavily amended final version of the Regulation was expected in February 2024.

¹⁰⁷ On international obligations to restore, see, e.g., K. Bastmeijer, 'Ecological restoration in international biodiversity law: a promising strategy to address our failure to prevent?', in M.J.S. Bowman et al. (eds.), *Research handbook on biodiversity and law*, Edward Elgar 2016, 387; A. Telesetsky et al., *Ecological restoration in international environmental law*, Routledge 2017.

¹⁰⁸ Trouwborst & Svenning, *supra*.

A strong additional reason for restoration is solidarity. First, solidarity with wildlife, given the harm inflicted by our species. Second, solidarity with those in our human societies who will need to make the biggest changes and sacrifices for ecosystem recovery to succeed, such as farmers. And third, there are significant demands in terms of North-South solidarity, in line with the Rio Declaration's commitment to "cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem," and the associated principle of common but differentiated responsibilities.¹⁰⁹ That is to say, if we expect poor people in the Global South to keep coexisting with elephants, hippos and lions, then in Europe and elsewhere in the Global North we must definitely do what we can to fix the extensive damage done to our own ecosystems, including by restoring our diminished megafauna.¹¹⁰

And what we can do is more than you may realize. Perhaps surprisingly, I am going to end on a positive note. For nature has a tremendous regenerative capacity, and when given new opportunities, tends to grasp them with both hands. It turns out that whenever as humans we manage to take a step back and return space to nature, and perhaps give a little push in the right direction, we can basically sit back, watch the rewilding of the landscape unfold, and reap the benefits.¹¹¹ Apart from rebounding biodiversity, those benefits include an improved quality of life for humans, and nature-based solutions for climate mitigation and adaptation, as the recovering ecosystems draw carbon out of the atmosphere and buffer the impacts of floods, droughts, and fires.¹¹²

With its rewilded floodplains, reintroduced otters, spontaneously returned white-tailed eagles, cranes, and wildcats, and a current tally of nine wolf packs, the Netherlands is a notable testing ground in this regard.¹¹³ And as I recall from the inaugural address of rewilding ecology professor Liesbeth Bakker in Wageningen

¹⁰⁹ 1992 Declaration on Environment and Development, Principle 7.

¹¹⁰ S. Monsarrat & J.-C. Svenning, 'Using recent baselines as benchmark for megafauna restoration places an unfair burden on the Global South', *Ecography* 2022, e05795; Trouwborst & Svenning, *supra*, 198; Flannery, *supra*, 310: "I think the moral case is unassailable: it is unacceptable to ask the people of Africa, whose population may reach around four billion by 2100, to live alongside lions and elephants while Europeans refuse to do so."

¹¹¹ See, e.g., P. Jepson & C. Blythe, *Rewilding: the radical new science of ecological recovery*, Icon Books 2020.

¹¹² *Id.*

¹¹³ See, e.g. (in Dutch), K. Arts et al. (eds.), *Rewilding in Nederland: essays over een offensieve natuurstrategie*, KNNV Uitgeverij 2022.

last year, when nature is given free rein, we can expect surprises.¹¹⁴ To illustrate, the newly created islands of the Marker Wadden quickly attracted many species of breeding birds, including uncommon ones such as long-tailed ducks and little gulls, and even a couple of rare gull-billed terns.¹¹⁵ And here in the province of Noord-Brabant, previously straightened and impoverished brooks are meandering once more, and host reintroduced, dam-building beavers. The province is also home again to grazing and browsing bison, as well as horses, cattle and water buffaloes in a process of de-domestication, replacing extinct wild horses, aurochs and European water buffalo.

I sum up and conclude. By flouting the Serengeti rules and denying the value of fellow creatures belonging to other species, humans have come to “normalize the abnormal, and accept the unacceptable,” to borrow words from a recent book on animal senses by Ed Yong.¹¹⁶ Science, ethics, and law all seem to indicate that it is time to correct this, and to restore what is broken. There is clearly a lot of work to do in the discipline of wildlife law in this regard, and I look forward to playing my part.

¹¹⁴ NIOO-KNAW, ‘Rewilding professor Liesbeth Bakker: “Let nature surprise you” – special chair in Rewilding Ecology inaugurated in Wageningen’, 5 October 2022, <https://nioo.knaw.nl/en/news/rewilding-professor-liesbeth-bakker-let-nature-surprise-you>.

¹¹⁵ Id.

¹¹⁶ E. Yong, *An immense world: how animal senses reveal the hidden realms around us*, Penguin 2022, 352.

5. Thank you



Bluethroat (in Dutch: blauwborst). Photo: Maarten Graat.

“If the only prayer you ever say in your life is thank you, it will be enough,” Meister Eckhart once wrote.¹¹⁷ I have endless things to say thank you for, but will limit myself here to certain people and organizations.

I am grateful, first, for your attention this evening, here in Tilburg and in other places watching the livestream. I am also very grateful for the faith placed in me by the Appointment and Promotion Committee, the Dean of Tilburg Law School, and the Rector Magnificus and Executive Board of Tilburg University. I thank the Province of Noord-Brabant, the Brabants Landschap Foundation, and the Dutch Society for Nature Conservation (Natuurmonumenten), for co-sponsoring the Tilburg chair of nature conservation law, and I look forward to our continued cooperation.

My thanks also go out to various individuals from my time in Utrecht. Most of all to Fred Soons, who exercised a decisive influence on the early part of my career, for his encouragement and for showing me how to cultivate a simultaneously critical and constructive attitude in scholarship. To Terry Gill, Kees Roelofsen, and others who were first professors and then my colleagues. To René Lefeber, for joining Fred Soons in supervising my PhD journey. To Erik Molenaar and other colleagues at the Netherlands Institute for the Law of the Sea. And a special thank you to Harm Dotinga: it was a joy to share an office and many projects, and to comment on university and world affairs in Waldorf and Statler style.

I am greatly indebted, furthermore, to the formidable duo Kees Bastmeijer and Jonathan Verschuuren, who invited and welcomed me to Tilburg. You have both been scholarly sources of inspiration throughout my time here. And Jonathan, I look up to you at least as much for being probably the best birdwatcher I know.¹¹⁸ Kees, we miss you. I have always admired your way of approaching nature conservation law, having eye for legal detail without losing sight of what the law is actually meant to accomplish. It is humbling to be walking in your footsteps.

I am grateful for all the work I have been allowed to carry out here; and for my students, PhD supervisees, and colleagues from various departments, especially my homebase of Public Law and Governance (PLG). Again, people are going from

¹¹⁷ Cited in B. Mahany, *The book of nature*, Broadleaf Books 2023, 75.

¹¹⁸ No offence meant to certain other accomplished birders I know to be in the audience.

student to colleague, but now I am observing it from the professor's perspective. It is stimulating to discuss the role of science, law and ethics with the razor-sharp minds of Mike Leach, Phil Paiement and other colleagues in the research project 'Constitutionalizing in the Anthropocene'. I am also extremely pleased with the arrival in Tilburg of Ralph Frins, a real heavy-weight who has been providing a welcome boost to our expertise in Dutch nature conservation law.

It is a true luxury that it is impossible to mention every PLG colleague I appreciate. I do wish to mention Mirjam Kouwenberg and the other vital colleagues from the support staff. And of course Nicola Jägers, trusted captain at the helm of our fully-rigged department; I am glad your path also led you from Utrecht to Tilburg. I am especially grateful to have Floor Fleurke, skillful and selfless, as close colleague and sparring partner. To highlight one moment from our long track record of collaborations, I recall a quite magical moose sighting from a Swedish kitchen window while working on a joint large carnivore project. I also owe much to Han Somsen, and cherish our joint academic and other adventures, from canoeing amongst loons and beavers, to trailing the African bush. I will not forget the moment you saw your first wild elephant, which (or should I say who) came a bit too close for comfort; or the time a well-known Dutch politician branded us as lunatic pseudo-scientists who had better be locked up.

My work often takes me beyond Tilburg, to Groningen, Ghent, Brussels, Oxford, Strasbourg, Scandinavia, the Balkans, KwaZulu-Natal or the Potchefstroom campus. I thank all colleagues, collaborators, co-authors, clients, project partners, and fellow members of expert groups and journal boards. A special word of thanks is due to the South African delegation present here today: Niel Lubbe and Michelle Barnard of North-West University and our PhD alumnus Andy Blackmore of Ezemvelo KZN Wildlife. Thank you for your hospitality and friendship, for broadening my perspective, for taking me into really abundant nature, and showing me how to ask a honey badger to give back your steak.

A big thank you also to the authors of many books and papers, some of which are mentioned in the footnotes of the printed version of this talk, for opening my eyes time and again.

Outside the academic bubble, I am lucky to have some good friends, and a very fine family. I gratefully mention my brothers Bart, Bram and Klaas, and their wonderful partners and offspring. *Mil gracias* Elvira, *mi princesa*, for walking by my side, and for your quite incredible decision to swap warm and lively Andalusia for a life in the country of frozen frogs. A giant thank you to my fantastic boys, Marcos and Jaime, Mark and Gijs. You have made my life so much more fun over the past 19 and 17 years, and your characters give me hope for the future. It is a huge pleasure and privilege to be part of our little pack, which despite all its diversity has its own unique language, customs, jokes, and stories – plus a sweet old dog named Lobo, who is living proof of animal sentience and, to a slightly lesser degree, intelligence.

I also thank my ever-hospitable second family in Spain, and Natalia and Miguel for representing them today. For the record, you guys know I am happy to support Atlético, but it would be nice if the Netherlands won the next World Cup final we play against Spain.

My final thanks go to my parents, Bram Trouwborst and Teuni Redelijkheid. As the well-known biologist Richard Dawkins once observed, it is a rare occasion when one can say about any particular human being that the specific name *sapiens* is well deserved.¹¹⁹ But my brothers and I had the incredible fortune of being raised by two such specimens. I cannot thank you enough for your examples.

I end with a quote from a book my mother bought me years ago, called ‘How to be a bad birdwatcher’, by sports journalist Simon Barnes.¹²⁰ In the last chapter, Barnes concludes as follows: “There is a trinity of reasons for [nature] conservation, then: duty, self-interest, and love. The greatest of these is the last.”¹²¹

*I have spoken. Ik heb gezegd.*¹²²

¹¹⁹ R. Dawkins, ‘Foreword to new edition’, in D. Adams & M. Carwardine, *Last chance to see*, Arrow Books 2009, xi, xvi.

¹²⁰ Barnes, *supra*.

¹²¹ *Id.*, 191.

¹²² The text of this address was finalized on 13 December 2023.

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