A WALK ON EUROPE'S WILD SIDE

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For millennia, human development had been built on ever-greater encroachment into the natural world. However, the biodiversity crisis of the early 21st century signalled the limit. Faced with the destruction of vital ecosystems, rewilding opened up a path to restoring the prosperity and productivity of the natural world.

From the year 2049, we can look back on 2019 as a turning point for the continent of Europe. Set to miss its targets to halt and reverse the erosion of biodiversity by 2020, the European Union stood at the precipice of environmental catastrophe. And yet pockets of resurging wildernesses offered hope and foreshadowed the drastic shifts in European societies and political priorities of the last three decades.

In 2019, wildlife in Europe was making a quiet, yet triumphant comeback, in part thanks to rewilding: conservation schemes in which lost species are reintroduced to restore ecosystems.

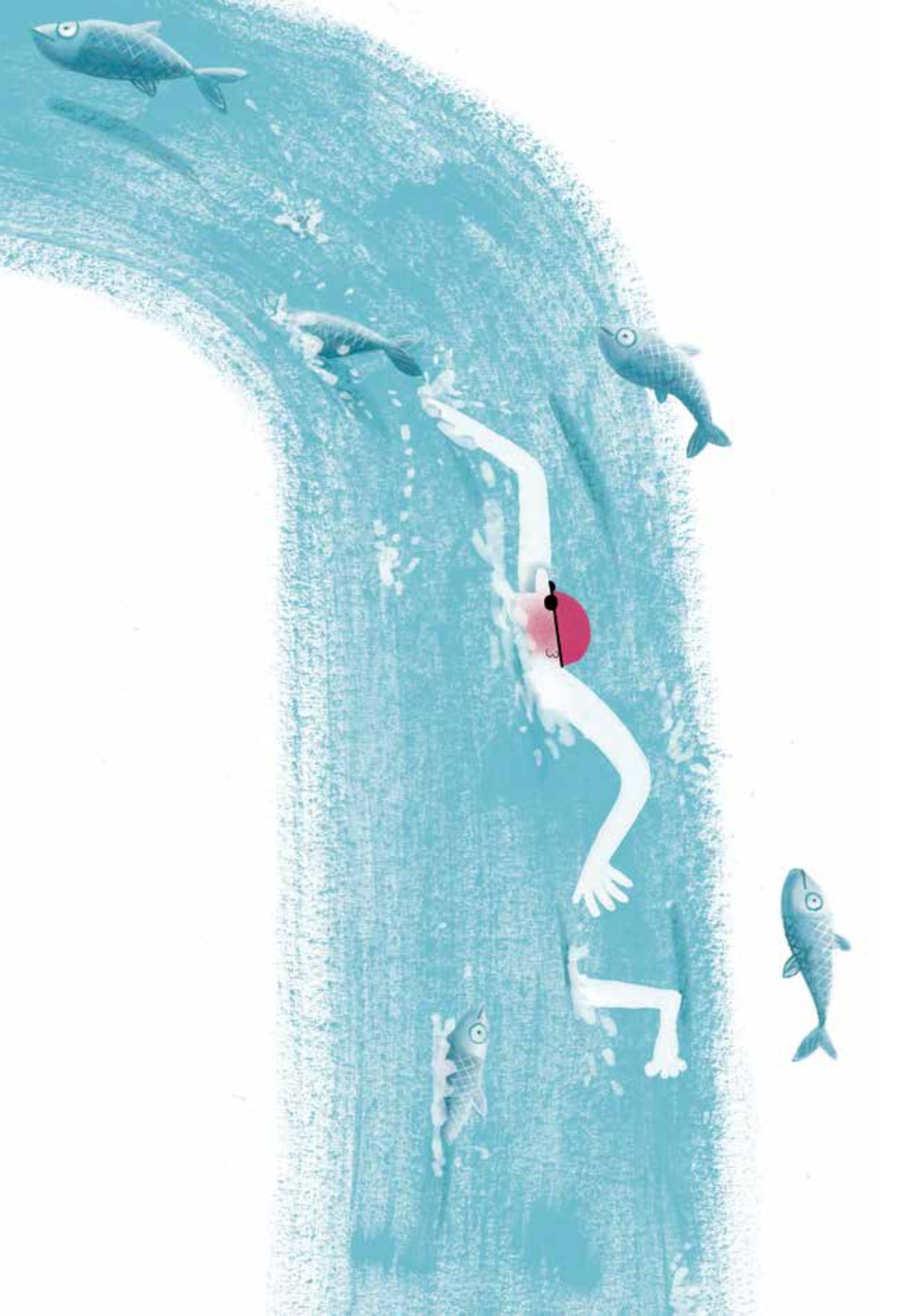
The European bison, Europe's largest land animal whose grazing promotes diverse habitats, was brought back from the brink. It was returned to many areas of its former range, including the Białowieża forest in Poland, the Carpathian Mountains in Romania, and the Kraansvlak dunes of the Netherlands. Eurasian beavers released in the UK breathed new life into their environments, with their dams boosting biodiversity as well as managing flooding. Large carnivores, once rare sights, began reappearing across the continent, including brown bears, golden jackals, and wolves expanding their ranges.

These cases, alongside lynxes, ibexes, and a wealth of birdlife in the Côa Valley, Portugal, the roaming bears and elks of Finland's Kainuu forest, the flourishing wetlands of the Danube river delta, and many others, highlighted the potential for the more natural, wilder Europe we have today.

Dramatic transformations in how we live in the years since 2019, as well as robust legislative action for conservation, built upon these foundations. The transition to renewable energy sources and sustainable agricultural policies, and away from endless growth radically reduced the pollution of air, land, and water and limited the impact of climate change. Large swathes of rural land were abandoned as more people moved to cities and farming became less intensive. Nature reclaimed this land in spectacular fashion, with former farmland converted into deciduous woodlands and sprawling grasslands and incorporated into the EU's protected Natura 2000 network.

Strict controls on pesticides introduced following the near-collapse of insect populations in the early 21st century allowed them to come swarming back, and the food chains they support and invaluable ecosystem services they provide returning with them. From mountain ranges to old-growth forests, habitats flourished under protected statuses and have come to brim with flora and fauna. Rivers flowed freely and without pollution, bursting with aquatic life. Looking to the seas, stringent restrictions on fishing led to the recovery of marine populations, which now sustain the seals, dolphins, and whales that are common sights off European coasts.

The cities and towns in which the vast majority of Europe's peoples live are also wilder than



their 2019 counterparts. Smart development and sustainable management of natural resources and services created urban spaces where citizens and wildlife coexist, to the mutual benefit of both.

With just one year to go, the European Union looks set to realise its vision for 2050, laid out at the beginning of the century to protect and preserve European biodiversity and its ecosystem services. 30 years ago, amid the mounting biodiversity crisis, such a reality seemed a distant prospect.

THE ANTHROPOCENE

Returning to 2019, the alarm is indeed sounding across the globe. The planet is undergoing a major extinction event with a loss of life not seen since the end of the dinosaurs. At current rates, thousands of species are lost each year. A major report produced by the World Wildlife Fund estimated that 60 per cent of animal populations have been wiped out since 1970.[1]

This staggering annihilation of life has been entitled the Anthropocene. Humanity bears unequivocal responsibility for driving the planet's sixth extinction event with ever-increasing consumption and over-exploitation of energy, land, and water. The achievement can be placed alongside the ice ages, volcanic eruptions, and meteorite impacts that were responsible for Earth's previous five mass extinctions. So widespread is our species' influence that only a quarter of land on Earth is free from the impact of human activity, a figure expected to further fall to just one tenth by 2050.[2]

The situation is no less dire in Europe. Reports on the health of European ecosystems use phrases like "biodiversity oblivion" and "ecological Armageddon" to describe the loss of wildlife on the continent. Studies estimating that farmland birds have declined by 56 per cent[3] and flying insects by 76 per cent illustrate but a few of the many losses that are symptomatic of the degradation of ecosystems.[4]

The biodiversity crisis threatens our very way of life. Nature may be removed from the daily lives of many in the modern world, but humanity relies on the natural processes for its food production and water supply and thus its health and prosperity. Insects play a central role in a multitude of these

1 WWF (2018). *Living Planet Report - 2018: Aiming Higher.* M. Grooten and R.E.A. Almond (Eds). Gland, Switzerland: WWF.
2 Ibid.
3 Maaike de Jong (November 2017). Latest update of European wild bird indicators confirms continued decline of farmland birds. *European Birds Census Council*. Available at <bit.ly/2Da55zq>.
4 Caspar A. Hallmann et al. (2017). More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PLoS ONE*, 12(10). e0185809.

The collapse of bird populations in Europe (1980 baseline)

Source: PanEuropean Common Bird Monitoring Scheme (2015)

processes: in nutrient cycling, as a food source for other animals, and as pollinators. Their importance is immense and without them everything else will collapse. The threat of catastrophe posed by biodiversity loss is as severe as the closely connected climate change crisis, such that United Nations reports urge it to be considered with the same level of gravity.

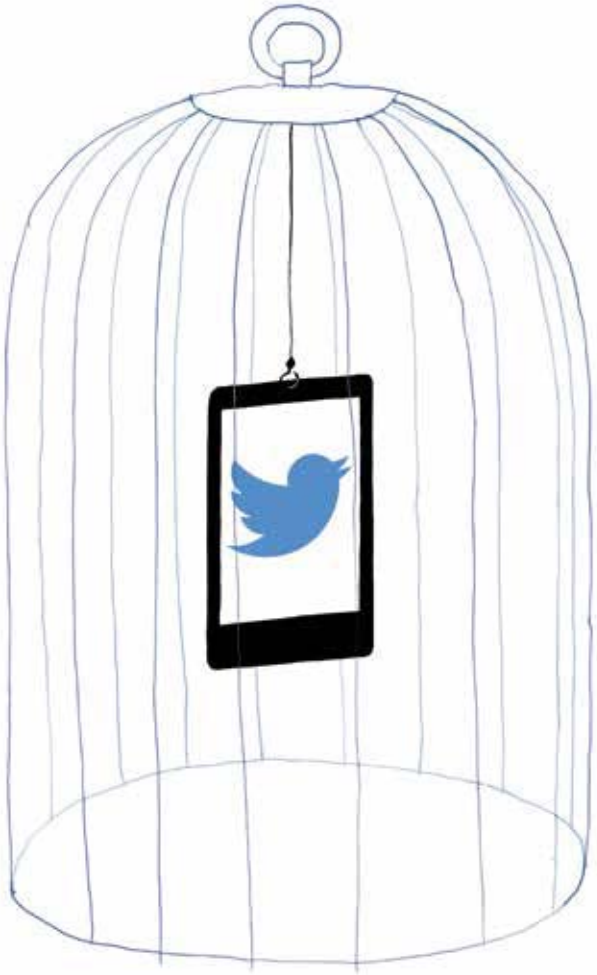
THE CALL OF THE WILD

Rewilding is one proposed solution to not only halt but reverse the unsustainable destruction of nature. As a form of conservation, it has been attracting increasing international attention and, with it, controversy.

A key aspect of rewilding is that the animals reintroduced are keystone species. These species have a disproportionately large effect on their ecosystem and are crucial to the health of the communities of life that inhabit it. In their absence, a delicate balance is lost, and the disruption reverberates throughout the ecosystem.

The classic example of a keystone species in rewilding is the grey wolf in Yellowstone National Park in the United States. Eradicated in the 1930s, the species was reintroduced in the 1970s. Upon their return, the wolves kickstarted an ecological cascade. They promptly devoured the excess of deer, whose unchecked populations had exploded. With deer numbers reduced, and the remaining deer becoming more mobile due to fear of their reinstated predators, overgrazed areas recovered. The returning trees and shrubbery in turn revived beaver populations, whose iconic dams changed the course of rivers and created new habitats for birds, fish, and other wildlife. The wolves curbed rival coyotes, allowing bear and bird of prey populations to also rise again.

The success of the Yellowstone wolves demonstrates the importance of such species to an ecosystem and what is lost without them. Rewilding



schemes are in place across Europe, from small-scale local projects to ambitious transnational initiatives such as Rewilding Europe. The results are promising, and, in some instances, species have been making an almost unaided comeback. Such is the case with wolves: the number of European wolves is estimated to be 12 000, with the apex predator resurging all over Europe and sighted in countries where they had not been seen for centuries, such as Belgium and Denmark.[5]

HEARTS AND MINDS, TEETH AND CLAWS

The progress made with current rewilding schemes highlight the potential for that Europe envisioned in 2049, but as with all complex problems, solutions are never simple. Advocates of the practice are split on what exactly constitutes rewilding: how 'wild' can it be? What level of human intervention and management is acceptable?

These questions are central to the controversy surrounding the Oostvaardersplassen reserve in the Netherlands. The artificial wetland east of Amsterdam was created in 1968 following land reclamation. In an attempt to mimic the grazing habits of long-lost herbivores, deer, horses, and cattle were released into the area. Without natural predators, the populations boomed and then subsequently busted. Following a harsh winter in 2018, thousands of the animals were shot by Dutch authorities before they would perish from starvation, to the outcry of animal rights campaigners.

The resurgence of large carnivores in Europe has also reignited ancestral conflicts with humans. Such conflicts are ages old and entwined in the cultural DNA of humankind, with their modern-day manifestation usually

5 Guillaume Chapron et al. (2014). Recovery of large carnivores in Europe's modern human-dominated landscapes. *Science*. 346(6216), pp. 1517-1519.

IN AN AGE OF DOOMSDAY PREDICTIONS, REWILDING CONSERVATION SCHEMES OFFER A GLIMMER OF HOPE ON AN OTHERWISE BLEAK HORIZON FOR THE FUTURE OF BIODIVERSITY IN EUROPE

the result of livestock loss. Protected under the EU's European Habitat Directive, wolves have been the subject of ire from farmers across Europe. There have been calls to relax legislation to allow culling, and in some cases, vigilante groups have killed wolves illegally. Similar turmoil met the reintroduction of two bears in the Pyrenees in France, with threats made to "reopen the bear hunt". Other species have also fallen in the crosshairs, such as beavers in Scotland targeted by landowners who decry the drastic impact the large rodents have on the local environment.

Despite these conflicts, public enthusiasm for rewilding is generally high, with a variety of schemes led by community groups, landowners, and private organisations. However, there is a disparity of opinion between rural and urban areas, and the concerns of communities closest to such initiatives must not be discounted. Preventative measures like electric fencing and compensation for lost livestock offer potential solutions for conflict. Education can allay fears of attack by predators, while the tangible benefits of ecosystem services and ecotourism can persuade locals to work with instead of against nature.

NAIVE FANTASY OR OPTIMISTIC REALITY?

The keystone species of rewilding attract controversy for the same reasons they appeal. They are large, remarkable, and, unfortunately, exotic. The assumption that just adding a few bears, bison or other beasts will miraculously cure an ecosystem of its ills is an oversimplification and risks turning rewilding into a buzzword.

But these animals are figureheads, bastions of a natural world that we have disconnected from, and their return through rewilding indicates the revival of something greater that has been lost. These species and even the term itself evoke images of grand, rolling wildernesses, but the principles of rewilding can apply on a smaller scale. Ditching pesticides and desterilising towns and cities would make urban

areas more hospitable to nature, not only benefitting wildlife, but also the people living there: multiple studies have demonstrated the positive effects on human mental and physical wellbeing that reconnecting with nature brings.

In an age of doomsday predictions, rewilding conservation schemes offer a glimmer of hope on an otherwise bleak horizon for the future of biodiversity in Europe and across the world. And yet, policy-makers at national, regional, and global levels lag behind civil society and the media in advocating for action, reluctant to sacrifice short-term economic growth to tackle the crisis. Governments around the globe are failing to meet the biodiversity targets for 2020 which were set by the UN in Aichi, Japan, in 2010. Closer to home, EU countries have a rare opportunity to coordinate conservation efforts on a continent-wide scale. Indeed, the Natura 2000 network of protected areas, which covers over 18 per cent of EU land area, is a step in the right direction.[6] But with 45 per cent of EU land dedicated to farming, legislation banning toxic pesticides too slow forthcoming, and the continued overfishing of European waters, there is much more to be done if the EU's own 2020 biodiversity targets are to be achieved, let alone its long-term vision for restoring biodiversity by 2050.[7]

Conservation also often falls to the wayside in national politics too. Nicolas Hulot attributed his surprise, live-on-radio resignation as the French environment minister in 2018 in part to insufficient progress on improving biodiversity, particularly lamenting lack of support to protect wolves and reintroduce bears.

A societal transformation at every level is needed to ensure the survival of all species on this planet, including our own: one in which humanity's mindset on nature shifts from exploitation to coexistence and its value is measured beyond economic wealth. Rewilding has the potential to be an integral part of this shift, with promise of a Europe in 2049 that is healthier, biologically more diverse, and altogether wilder.

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6 European Commission (2019). *Natura 2000*. Available at: <bit.ly/1i2vgXI>.
7 Patrick Barkham (March 2018). Europe faces 'biodiversity oblivion' after collapse in French birds, experts warn. *The Guardian*.