

TOWN & CITY

The Big Picture



REWILDING
REACHOUT





SCOTLAND: The Big Picture works to drive the recovery of nature across Scotland through rewilding, in response to the growing climate and biodiversity crises.

We believe that restoring the natural living systems on which all life depends is the responsibility of everyone, and that young people's voices should be heard and valued.

Rewilding Reachout is a series of booklets, films and stories shaped by our #NextGen rewilders, a team of inspirational young people who aim to inform and inspire fresh thinking among young Scots around the potential of a rewilded Scotland.

#SBPNextGen

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"Spring afternoon, beautiful flowery meadow,
gentle breeze touching the heart,
this is the magic of life"

Debasish Mridha



71% of Scots now live in towns or cities. Urban living has started to weaken our connection with the natural world. We are less likely to know the current phase of the moon – do you know what it is? – or to notice the arrival and departure of seasonal heralds such as cuckoos, wild geese or migrating flocks of fieldfares. Nature, for many people, has become strangely unfamiliar.

When we are lit by artificial light, fed by supermarkets and insulated within the buildings where we live and work, nature can feel remote, or even irrelevant. But if we take the time to look, it turns out a surprising amount of wildlife survives and even thrives in the urban jungle.

**There is wildness on our doorsteps still.
And it has never been more important.**

Getting on with the neighbours

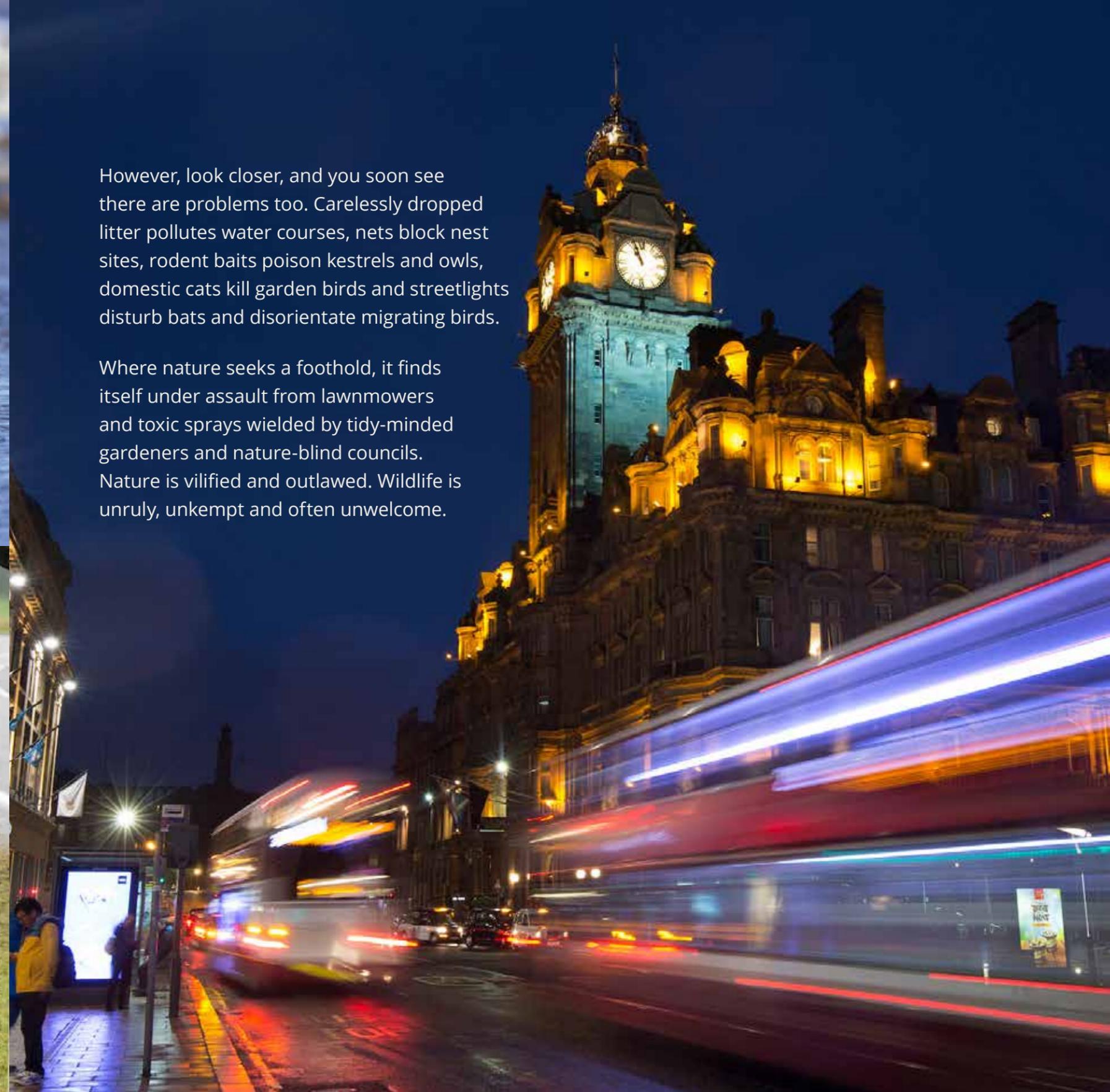
Today, kingfishers add a splash of colour to the Water of Leith and otters have returned to Edinburgh's Dunsapie Loch. Glasgow supports some of the highest densities of endangered water voles in the UK, and in Inverness you can watch the world's largest bottlenose dolphins from the shore, just a 40-minute walk from the city centre. Hedgehog populations appear to be recovering in urban environments, even as they continue to decline in the wider countryside, and peregrine falcons hunt over our city streets once more.





However, look closer, and you soon see there are problems too. Carelessly dropped litter pollutes water courses, nets block nest sites, rodent baits poison kestrels and owls, domestic cats kill garden birds and streetlights disturb bats and disorientate migrating birds.

Where nature seeks a foothold, it finds itself under assault from lawnmowers and toxic sprays wielded by tidy-minded gardeners and nature-blind councils. Nature is vilified and outlawed. Wildlife is unruly, unkempt and often unwelcome.



An unhealthy obsession

Gardeners have long had a fixation with neatness. Lawns, we are told, must be mowed and weed-free. Hedges must be trimmed. Leaves must be swept up and tidied away. In recent years, our search for convenience and conformity has seen the development of plastic lawns – sterile green carpets that support not a single bee or flower.

Neat and tidy almost always means barren and lifeless. Carefully manicured spaces offer little for wildlife: nowhere to hide and nothing to eat. Nature needs nooks and crannies. A bramble patch is a haven for nesting birds, pollinators and foraging mammals. A roadside verge can be a blooming marvel of wildflowers.

Of course, compromises must be made. We want more nature, but we don't want dereliction and urban decay. Railway lines will always need to be cleared of dangerous overhanging trees. Some roadside verges must be cut short to maintain visibility. Parks need managing to provide the recreational space we want. But we don't have to always cut back *everything* or poison every "weed".





Long live the weeds

What defines a weed? Are dandelions weeds? What about daisies? The word "weed" actually has no biological meaning. It is just a popular term for a plant which we, for whatever reason, judge to be in the wrong place. A dandelion on a bowling green is labelled a weed. A dandelion in a meadow is called a wildflower.

And weeds – or wildflowers – are actually amazing. They are some of nature's *pioneer species*, able to colonise disturbed ground quickly before slower growing, woody species take root. The poppies that we use to commemorate conflict every year sprang up in the devastated battlefields of the First World War, blooming in hopeful glory amid the shell-wrecked fields of Flanders.

Let them be left! Weeds live fast and die young, covering bare soil as they do so, and stopping it from washing or blowing away. Their flowers feed hungry pollinators such as bees and hoverflies, while their seeds feed birds such as goldfinches. Weeds bring **colour** to our grey cities and life to our streets. Really, it's time they had a rebrand!



Grey squirrels are a non-native species that have significantly impacted on our native red squirrel, through the transmission of disease. And yet, grey squirrels in our parks and gardens are a familiar and welcome sight for many people.

The parakeet paradox

Ring-necked parakeets – a type of parrot – have begun appearing in Scotland. Parakeets aren't native to the UK but captive birds either escaped or were released in England in the 1970s. The escapees have flourished, but like some other so-called **alien species**, they may now be creating a problem for our native wildlife.

This conflict creates a conundrum for rewilders. Some rewilders feel that the concept of alien species is unhelpful in the modern era, especially if their impacts on native species are minimal. In a period of rapid climate change, they argue, we should embrace any species which appears able to thrive in the novel, human-dominated ecosystems the world now supports.

Others feel that native wildlife needs to be protected and that alien species, such as grey squirrels or ring-necked parakeets, can have significant negative effects, spreading diseases and outcompeting native species. Other rewilders believe that sometimes we need to help nature with active management, such as culling species like parakeets, to secure the conservation of important biodiversity and the restoration of vital natural processes.

It's a difficult choice and asks us to consider what we mean by "natural" (is human activity natural or not?), how we weigh the rights of individual animals against the integrity of established native ecosystems, and whether we think we should ever interfere or not, bearing in mind that there are consequences either way. After all, many ecological problems – such as those linked to invasive parakeets – have been caused by us, so perhaps we have a duty to do what we can to fix these problems.

What do you think?

Natural capital

Scotland's capital is the greenest city in the UK, but what is all that green space really worth? Most of us feel that nature has value, even if the things nature supplies us with, such as wood, food and medicine, or the vital ecosystem services nature provides, such as clean air and recreational opportunities, are free. However, precisely because nature does these things for free, economists rarely consider their value, or the cost to our societies when natural goods and services are degraded or lost.

In an attempt to highlight nature's value, the radical economist Ernst Friedrich Schumacher coined the term **natural capital**, promoting the idea that nature, and the goods and services that nature provides, are essential to a sustainable economy. Other economists have since teamed up with ecologists to try to put a monetary value on all these goods and services, with nature's global value estimated to be worth trillions of dollars.



"Earthworms, though in appearance a small and despicable link in the chain of nature ... if lost, would leave a lamentable chasm"

Gilbert White

Putting a monetary value on nature can help politicians and economists recognise the costs of damaging or destroying natural ecosystems, but monetising nature also has risks. When we say a forest is worth X, but a supermarket is worth Y, there's a risk that we calculate that environmental destruction is economically justified. Such models have been accused of knowing the cost of everything and the value of nothing. After all, what is the value of birdsong? What price would you put on a walk in the forest, the view from a mountain top, or clean air? Perhaps some things should always be priceless.

The benefits of urban green space

An increase in tree cover decreases urban temperatures, saving energy used in air conditioning, reducing reliance on fossil fuels and cutting carbon emissions.

Urban vegetation improves air quality, absorbing harmful pollutants in leaves and bark, soaking up carbon dioxide and pumping out oxygen.

Urban areas can contain a complex mosaic of habitats and a surprisingly high diversity of plant and animal species, with gardens and city streets creating useful corridors between larger green spaces.

Biodiversity and green spaces in urban areas can dramatically enhance psychological wellbeing.

Green area accessibility has been linked to reduced mortality and improved general health.

Absorption of rainfall by trees, vegetation and soil lowers the risk of surface water flooding.





Mind over matter

While economists have been trying to work out ways to assign value to nature, scientists have been studying how nature supports and benefits us in subtler ways. Studies show that forest bathing – where individuals use mindfulness to engage with nature – can reduce mood disturbance and increase positive emotions and feelings of compassion, and you don't need to leave the city to experience these benefits. Simply noticing the natural world – appreciating street trees or finding wonder in day-to-day encounters with urban wildlife – can significantly improve your wellbeing.

But the greener our cities are, the better. Research from the University of Exeter shows that people are happier and show significantly less mental distress when they live in areas with more green space. Other studies suggest time in nature can reduce anxiety, while walking in nature can decrease activity in the part of the brain associated with sadness, withdrawal and depression. Nature isn't just a nice thing to have – it's essential for our health and mental wellbeing.

Whose day isn't made brighter by a close encounter with a wild animal?

Nature nearby

Cities are increasingly being designed to incorporate more **natural infrastructure** (e.g. green roofs, allotments or community orchards, footpaths and cycleways) as we gain greater understanding of the positive health outcomes these innovations offer people.

Exposure to nature reduces stress, boosts attention and improves memory. The positive emotional state experienced during or after exposure to “nearby nature” has also been suggested to speed up recovery time for hospital patients and enhance our immune systems, as the emotions of awe and wonder triggered by nature appear to have anti-inflammatory effects, reducing some of the symptoms of diabetes, cardiovascular disease and depression.



B-Lines is a project run by the charity Buglife to establish flower-rich corridors across Scotland to benefit pollinating insects. This meadow just outside Bo'ness near Falkirk attracts both bees and local people.

Several studies have found that urbanites living in areas with easily accessible green space are more likely to be physically active, and less likely to be overweight or obese, while another study found that people tend to overestimate the distance of walking trips in areas with less vegetation. It seems time flies when you're having fun, but heels drag when you're walking in a barren urban environment.

Another study found a strong link between physical activity in nature and long-term emotional wellbeing, while no similar effects were recorded when equivalent physical activity was performed indoors.

Nature makes a difference.

Green streets v mean streets

The amount of vegetation in public spaces is also positively correlated with increased usage of those areas, while increased greenery even appears to encourage more diverse congregations of people, with social interaction in these areas in turn linked to a greater sense of neighbourhood safety and community. Put simply, people are attracted to greener, more natural-looking environments, and wherever people are encouraged to gather, they end up talking to one another, building community cohesion.

And community cohesion matters. Young people in cohesive communities are less likely to participate in behaviours such as smoking, drinking, gang involvement or drug abuse, while adults benefit from reduced suicide rates and reduced fear of crime. Nature nurtures kinder, safer communities. Rewilding might have been established with a focus on cores, corridors and carnivores, but in our cities, and across Scotland, a more important local focus is on communities, connections and cohesion.



Nature-based solutions

Nature has inspired modern city planners and landscape managers to harness the ecosystem services it provides, creating cost-effective, sustainable solutions to a variety of societal problems, from water management to air quality. Investing in nature-based solutions helps us create resilient, adaptable cities, while also helping us prepare for and mitigate the impact of climate change through the development of features such as rain gardens and green walls. Such solutions also offer important social and economic benefits, saving us money and making our cities nicer places to live.

It all adds up. The net value of the social, environmental and economic benefits provided by green infrastructure projects (including recreational opportunities, wetland services, reduced heat stress, improved water and air quality, energy savings and reduced emissions) far outweigh the value of traditional “grey infrastructure”. Rewilding our cities doesn’t mean turning them into a wilderness. It means finding ways to coexist with and enjoy the benefits of the natural world.

The urban jungle is turning from grey to green, and not a moment too soon.



The Cumbernauld Living Landscape project seeks to bring nature right into the heart of this busy town, creating a green network that provides clean air and water, and a respite from the demands of everyday life.

What can you do to wild your urban space?

- **Feed the birds – without bird feeders!** Plant wildlife-friendly shrubs and trees such as hawthorn, ivy, holly, rowan or teasel. Shop-bought birdseed will often have been grown using pesticides. If you must use a bird feeder, clean it weekly. Uncleaned birdfeeders and bird baths spread diseases that have decimated some songbird populations.
- **Create a community wildlife garden and let a part grow wild.** You could add a pond and plant some starter plants, but it's often best just to see how nature develops on its own. A big bramble patch is ideal for wildlife, and nettles are perfect for butterflies. Remember, a weed is just a plant in the wrong place.
- **Make a home for wildlife.** Put up a bird box or build a bug hotel. Just a pile of old dead wood can provide the perfect habitat for all sorts of beetles and fungi. Make sure your garden is accessible to wildlife (could a hedgehog get under your fences?) so that your garden can act as a helpful stepping stone for wildlife on the move.
- **Work on your ID skills.** Cities are full of wildlife, in parks, gardens and even roadside verges, but to really appreciate what's around you, you need to identify it. Once you start identifying specific species, whether it's birds and butterflies, or flowers and trees, you'll start to see nature a lot more. You've begun to rewild yourself!
- **Write to your local MSP or councillor to ask how they are tackling the current nature emergency.** Could they reduce mowing and pesticide use in public spaces? Are they looking after your urban nature, your city trees and green spaces? Are they working to ensure everyone has access to wild nature? And if not, why not?



Glossary

Alien species – organisms introduced outside their natural range by human activity.

Cores – in the rewilding context, “cores” refers to undisturbed wild areas where human activity is restricted, and nature is protected.

Corridors – in an ecological context, “corridors” refers to areas of habitat that link larger wildlife areas together, preventing fragmentation and isolation.

Ecosystem services – benefits provided by the natural environment, e.g. pollutant absorption, flood mitigation and carbon capture.

Green roof – the roof of a building that is partially or totally covered in plants (also known as a living roof).

Green walls – the walls of a building that are partially or completely covered in plants (also known as living walls).

IUCN – the International Union for the Conservation of Nature is the global authority on nature conservation.

Native species – organisms that naturally occur in a region without the influence of human activity or intervention.

Nature-based solutions – harnessing natural processes to tackle socio-environmental challenges such as flooding or climate change.

Natural capital – natural resources, including soils, air, water and all living organisms, which provide valuable benefits to humans (known as “ecosystem services”).

Natural processes – the suite of interactions between living and non-living things (e.g. photosynthesis, pollination, seed dispersal, grazing, predation, decomposition), which are crucial for maintaining healthy ecosystems.

Pioneer species – the first species to colonise newly formed or otherwise bare habitats.

Pollinators – an animal that moves pollen from the male part of a flower to the female part, facilitating fertilisation of the flower and the production of seeds.

Terrestrial – on, or relating to, earth or land.

Wilderness – landscapes where natural processes are able to operate without human interference, where nature exerts its own will, existing in a state of undomesticated freedom and wildness.



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