

Building our Response to the Ecological Emergency

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Bristol's Decade of Transformation

One City Homes & Communities Board

25 June 2020

Wildlife Loss and Ecological Breakdown



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1970-2018



Wild Vertebrates
60% Decline



Freshwater Wildlife
83% Decline



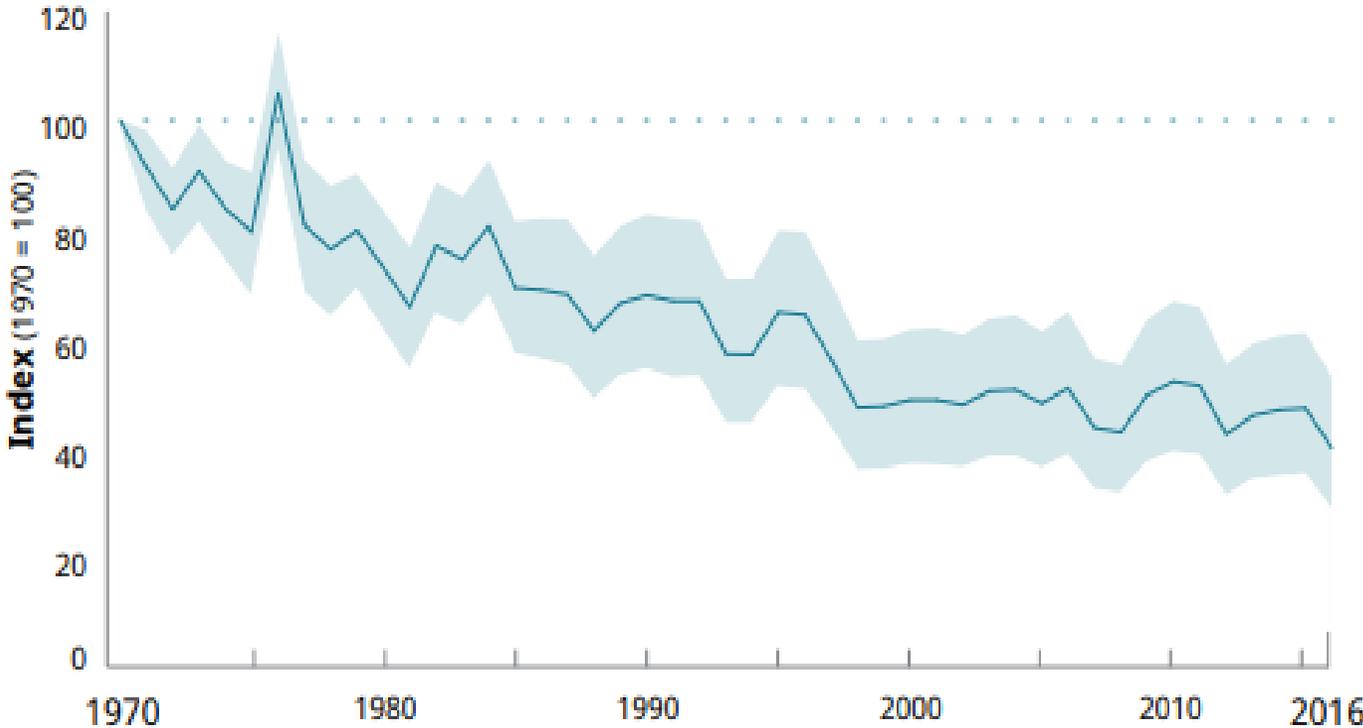
Marine Populations
50% Decline

Nature is declining globally at rates unprecedented in human history



UK Biodiversity Indicator: Change in the relative abundance of UK priority species, 1970 to 2016

Abundance indicator (214 species)



— Indicator 95% confidence intervals

Source: jncc.gov.uk/ukbi-C4a

Long term
1970-2016
(214)

Short term
2011-2016
(207)



Strong increase
Moderate increase
Little change
Moderate decrease
Strong decrease



Nesting birds -44m (20%)

Since 1960s



Hedgehog -30m (95%)

Since 1950s



Brown Hare -2.8m (80%)

Last century



Bristol Area



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1994-2014



Starling -96%



Swift -96%



Linnet -80%

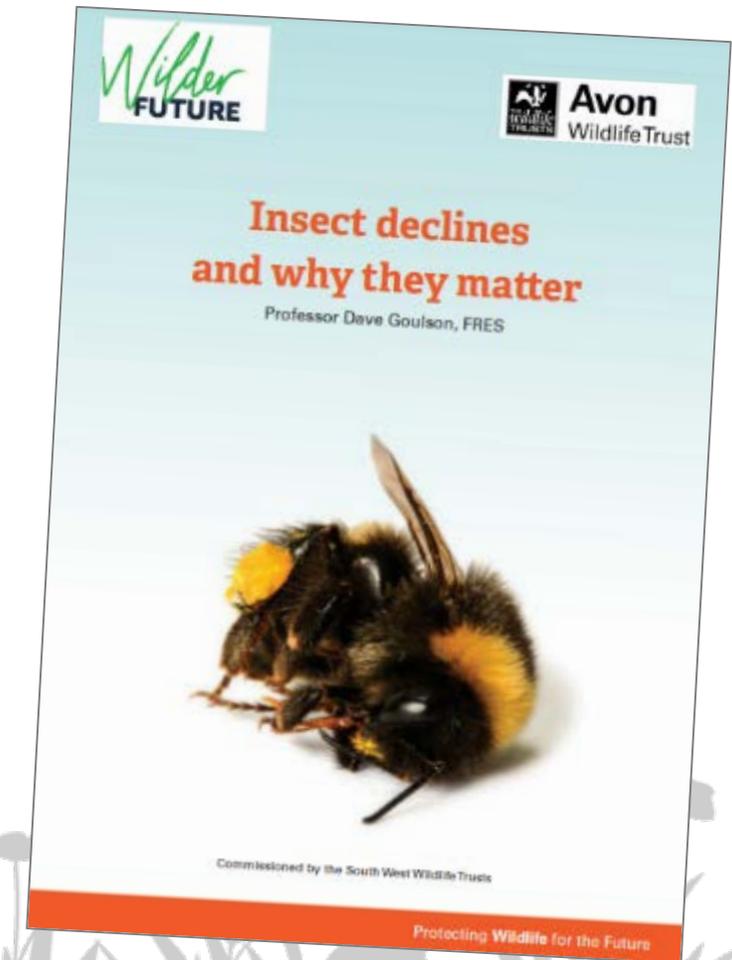


Insectageddon?



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- German nature reserves
 - 76% decline in insect biomass (1989 to 2014)
- Puerto Rica
 - 75-98% decline in insect biomass (1977 to 2013)
- UK butterflies
 - 46% decline between 1977 and 2017
- Similar declines in insect eating birds
 - Spotted Flycatcher -93%
 - Partridge -92%
 - Red backed shrike – Extinct in UK
 - Nightingale -93%
 - Cuckoo -77%



Causes of Wildlife Decline



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Global (IPBES)

1. Changes in land and sea use

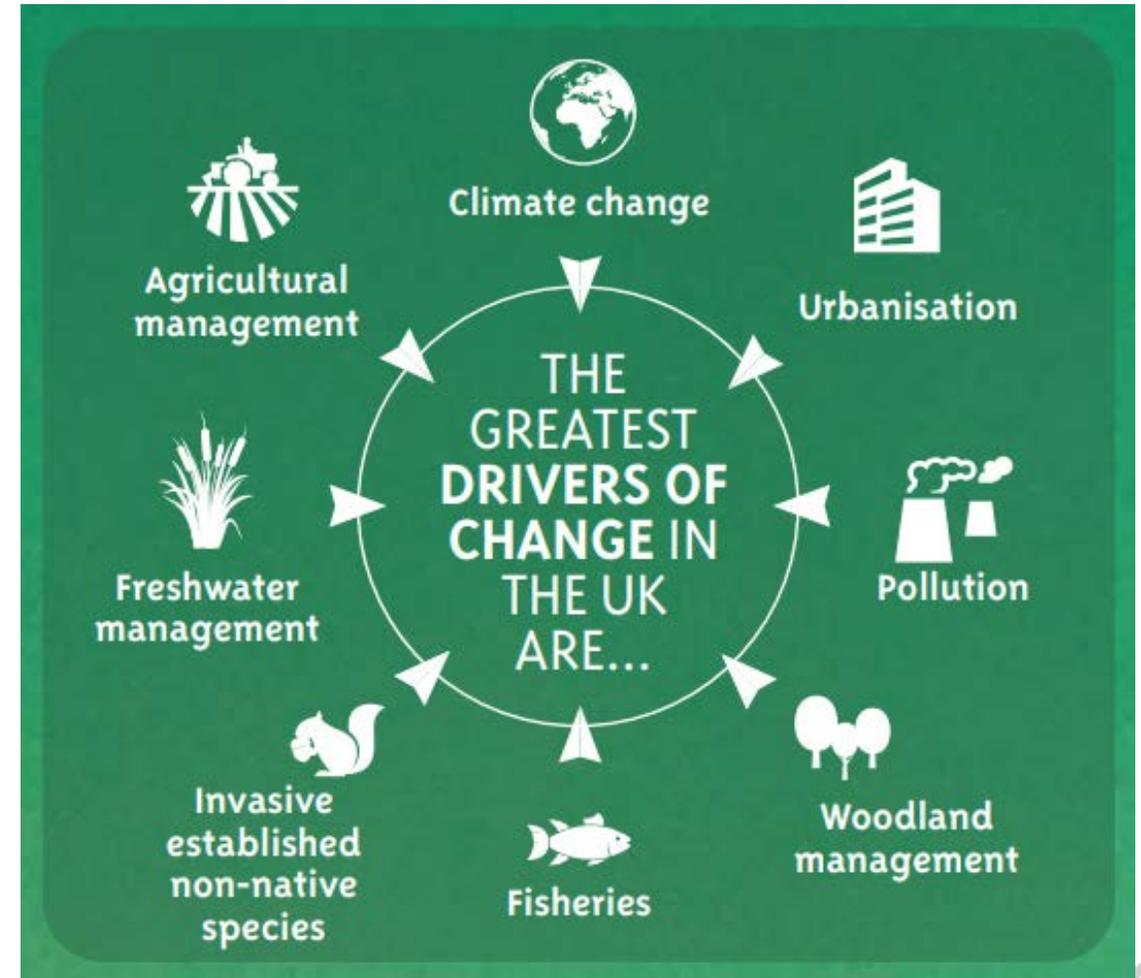
- Three-quarters of the land-based environment and about 66% of the marine environment have been significantly altered by human actions.
- More than a third of the world's land surface and nearly 75% of freshwater resources are now devoted to crop or livestock production.

2. Direct exploitation of organisms

3. Climate change

4. Pollution

5. Invasive alien species



Impacts of Wildlife Loss



Ecosystem services provided by insects and other invertebrates



APPROXIMATELY
3/4 OF THE CROP TYPES GROWN BY HUMANS REQUIRE POLLINATION BY INSECTS
 a service estimated to be worth between **\$235 and \$577 billion** per year worldwide

Impacts of Wildlife Loss



Your produce choices
with bees



Your produce choices
without bees





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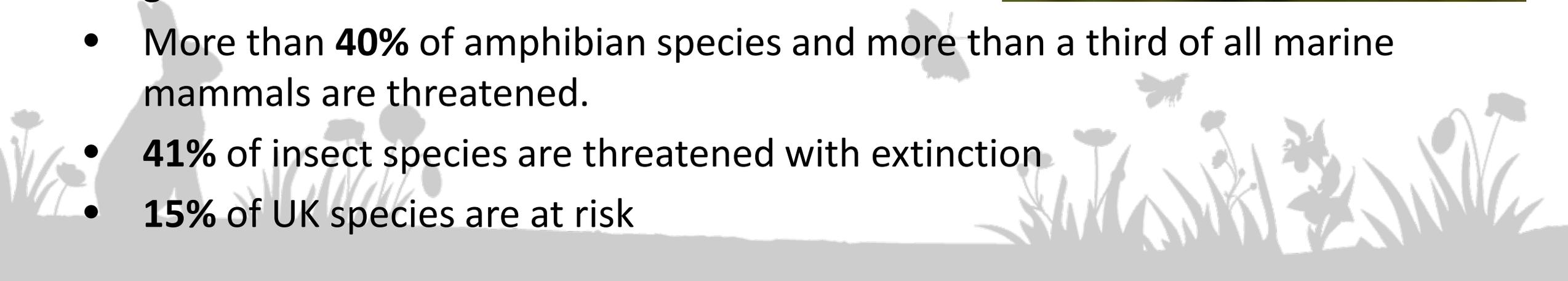


The 6th Major Extinction



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- Changes to farming and land use and the chemicals we use are causing **accelerating** wildlife loss globally and in the UK
- Current rates of species extinction are **100 to 1,000** times higher than the background rate and the rate is increasing
- **1 in 8** bird species is threatened with global extinction
- More than **40%** of amphibian species and more than a third of all marine mammals are threatened.
- **41%** of insect species are threatened with extinction
- **15%** of UK species are at risk





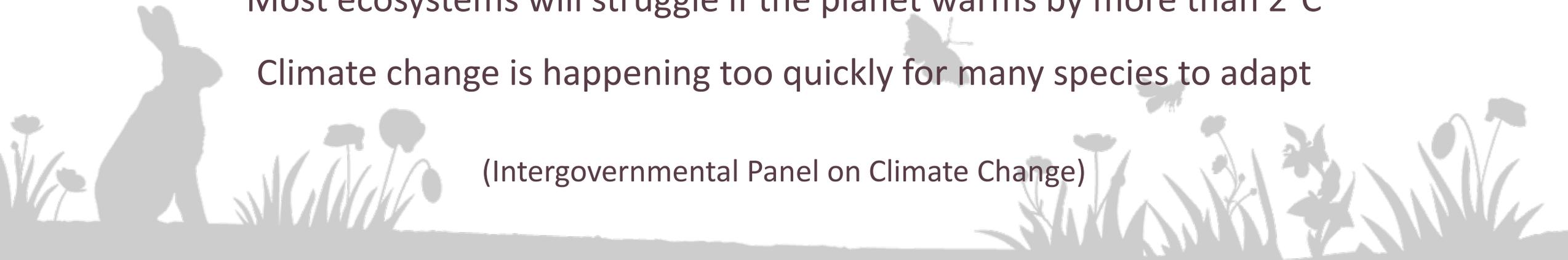
20-30%

of the species on Earth
may be at risk of **extinction**
if the climate warms by an average of 1.5°C

Most ecosystems will struggle if the planet warms by more than 2°C

Climate change is happening too quickly for many species to adapt

(Intergovernmental Panel on Climate Change)



*“The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. **We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide.**” says IPBES Chair, Sir Robert Watson. “The overwhelming evidence... from a wide range of different fields of knowledge, presents an ominous picture”*



We need to tackle the twin threats of climate change and ecological breakdown to save our planet for people and wildlife



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“The mass extinction event we are facing is **AVOIDABLE!**” *



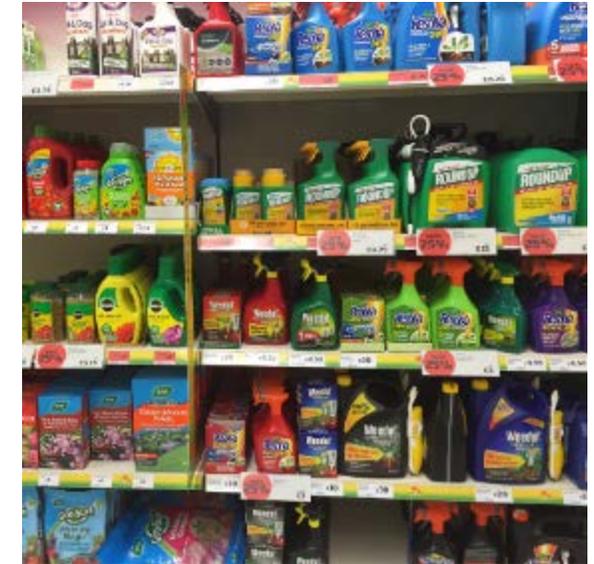
Stop destruction of habitats



Protect, link and enhance wildlife hotspots



Manage other land sympathetically for wildlife



Stop routine and unnecessary use of pesticides

* Benedict Macdonald, Author, *Rebirding* (2019)

Ecological Emergency Declaration (Feb 2020)

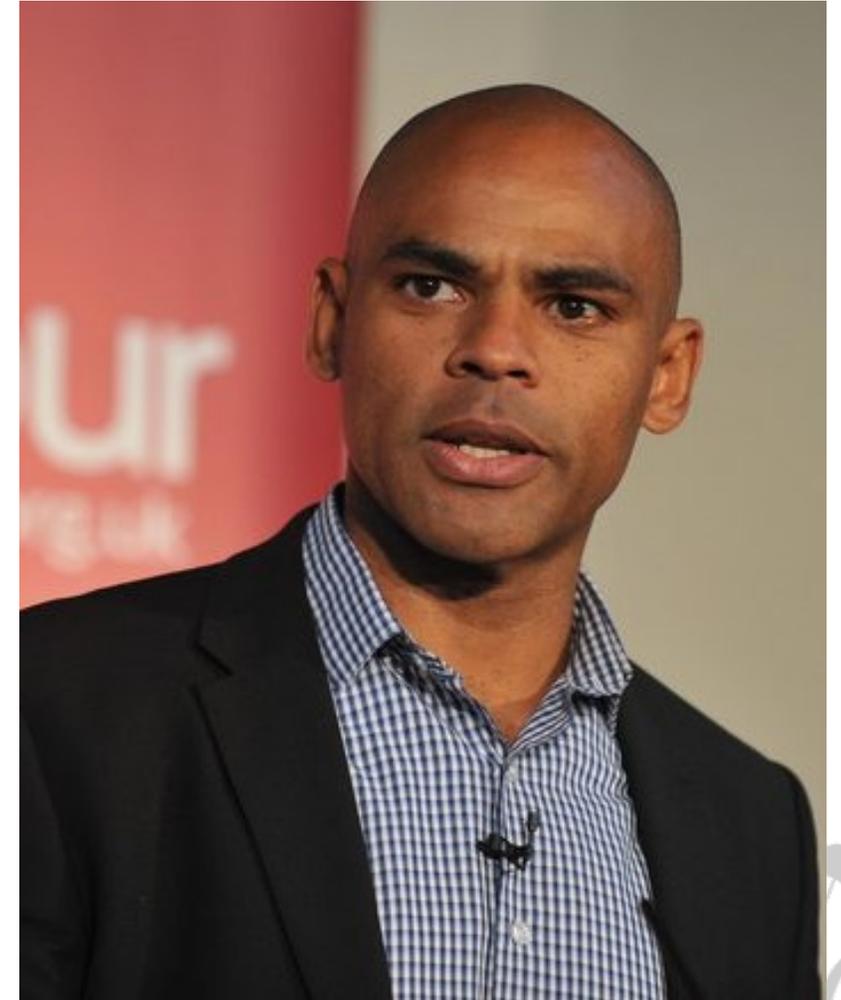
“It is not too late to start the recovery of our wildlife. We must work together to grasp this last chance and put things right for nature and wildlife in our city.

“This declaration will provide a focus for the whole city to come together and take positive action.

“Our commitment to this will extend beyond parks and green spaces. We need our **buildings, streets and open spaces** to support wildlife and create a more nature friendly city, and we need **new developments** to do the same.

“This is about **how we responsibly build and develop the city** so humans don't threaten wildlife and instead support them to grow alongside us. We can't solve this issue overnight but if we make sure we consider the ecology when we build **each new development**, and take major city decisions, then we can start to make major progress.

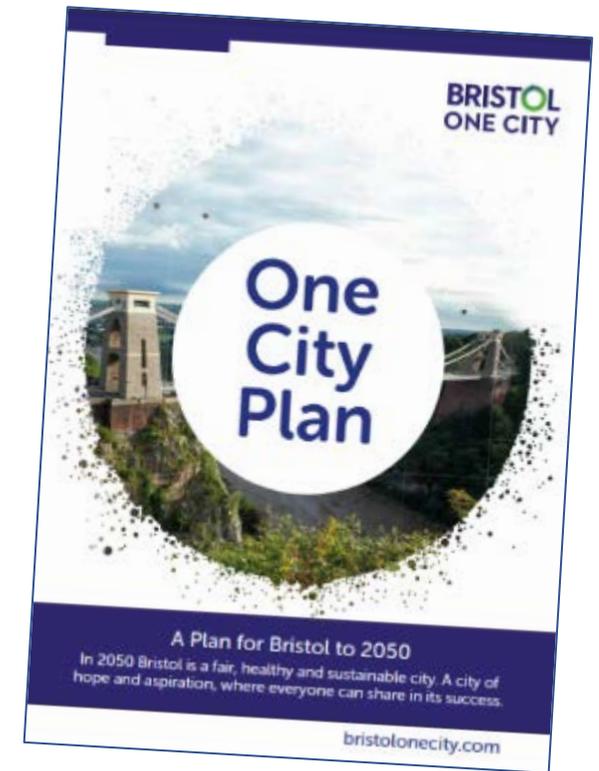
Marvin Rees



Bristol One City Plan

Ambitions

- Everyone has access to excellent quality greenspace by 2036
- Reverse decline in bees and pollinators by 2037
- Double wildlife abundance by 2044



Building our Response - Engaging Communities

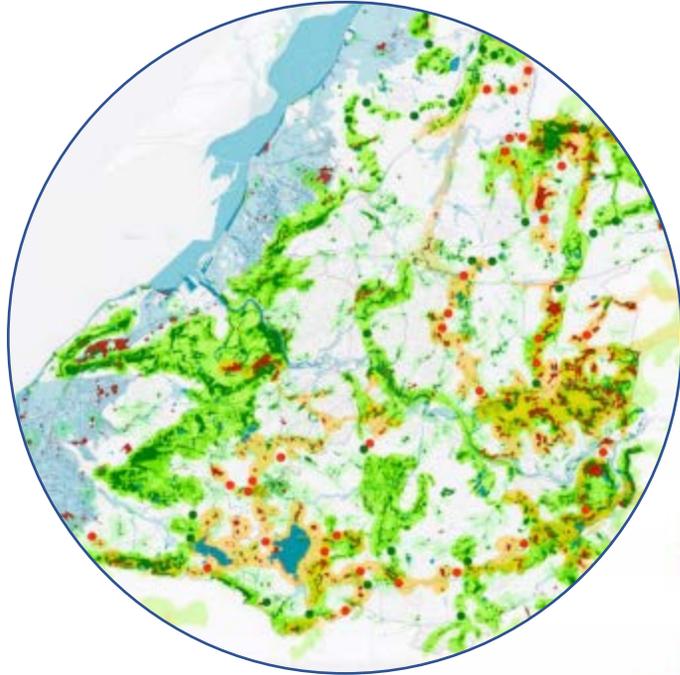


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My Wild City

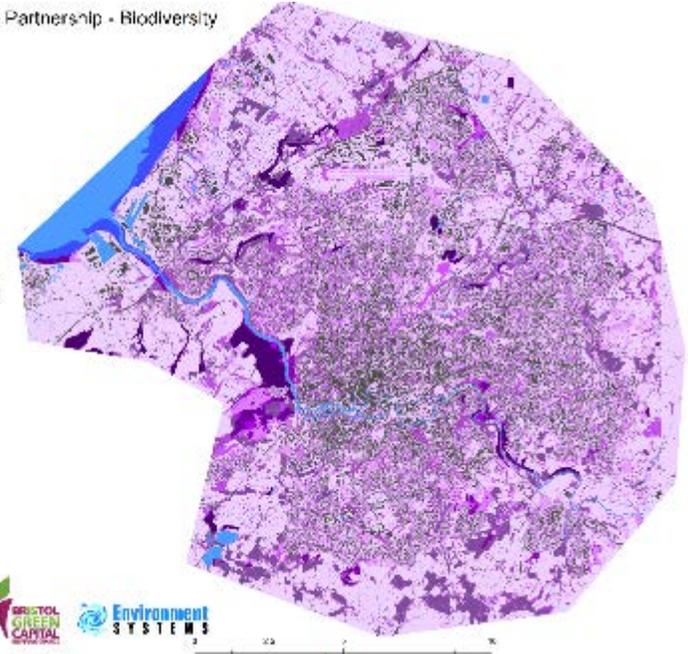


Building our Response - Nature Recovery Networks



Bristol and Avon Nature Partnership - Biodiversity
Final Draft 12/02/2015

Legend
 Urban Infrastructure
 Coastal and Inland Waterways
 Woodland
 Urban Greenery



Ecosystem type	Tonnes CO ₂ /ha/yr
Peat bogs and heathland	7.3
Woodland	12.8
Species-rich grassland	3.6
Saltmarsh	8.1
Ponds & lakes	5.1
Offshore	4.0
(Rewilding Britain)	

Win-win

Building our Response - Nature Friendly Development



CORE STANDARDS

Distinguish green infrastructure from a more conventional approach to provision for open and green space.



1. Multi-functional network
2. Contextual
3. Policy-responsive
4. Climate-resilient
5. Future-proof

WELLBEING STANDARDS

Secure health and wellbeing benefits through the delivery of green infrastructure features close to where people live.



1. Accessible
2. Inclusive
3. Seasonal enjoyment
4. Locally relevant
5. Socially sustainable
6. Distinctive

WATER STANDARDS

Managing water quantity and quality, and maximising opportunities for amenity and biodiversity.



1. Quantity
2. Quality
3. Amenity and biodiversity
4. Innovative
5. Resilient
6. Locally distinctive

WILDLIFE STANDARDS

Create places where nature can flourish, both within the boundary of the scheme, and at a landscape scale.

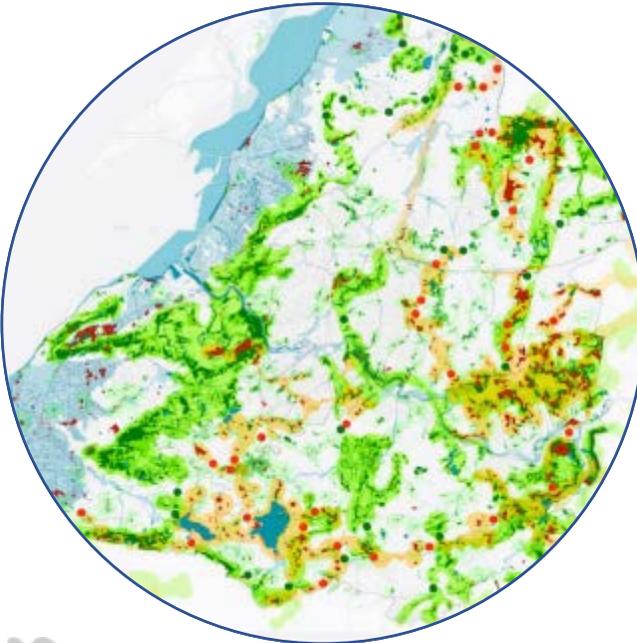


1. Bigger and better
2. More joined up
3. Locally-relevant
4. Nature-rich development
5. Ecological networks
6. Sensitive construction

Building our Response - Retrofitting Habitats



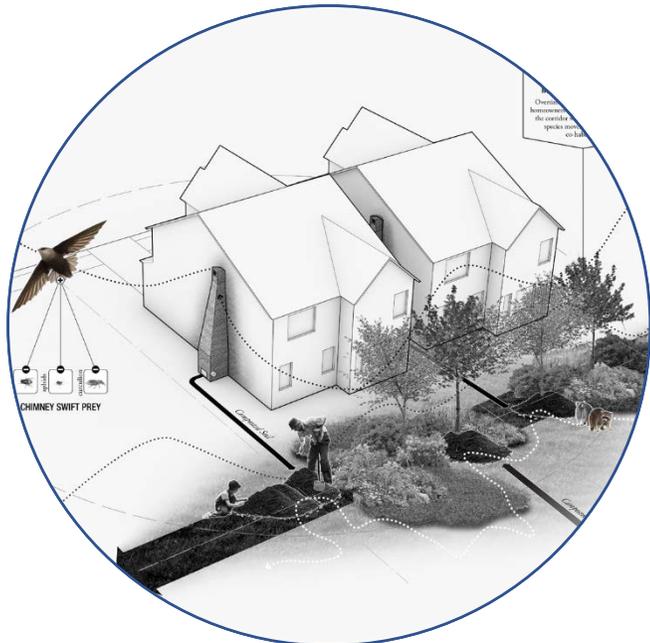
Building our Response - Homes & Communities



Nature Recovery Network



Wildlife-friendly Development



Retrofitting Habitats

How can we work together to develop a city that works for **people, wildlife** and the **ecosystems** on which we all depend?