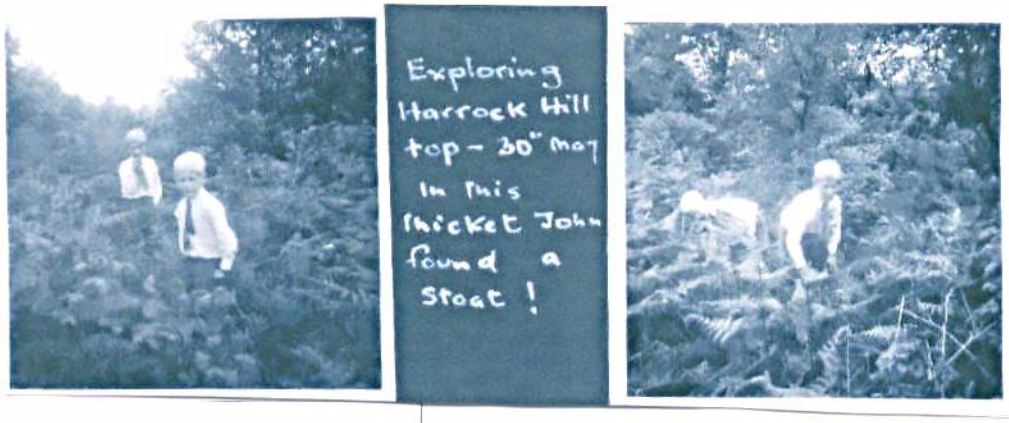
Thoughts from a Boy Birdwatcher, Bug-hunter and Botanist

Professor Sir John Lawton

NBN Conference
Network, Knowledge and Narrative – sharing and using data across the NBN and beyond

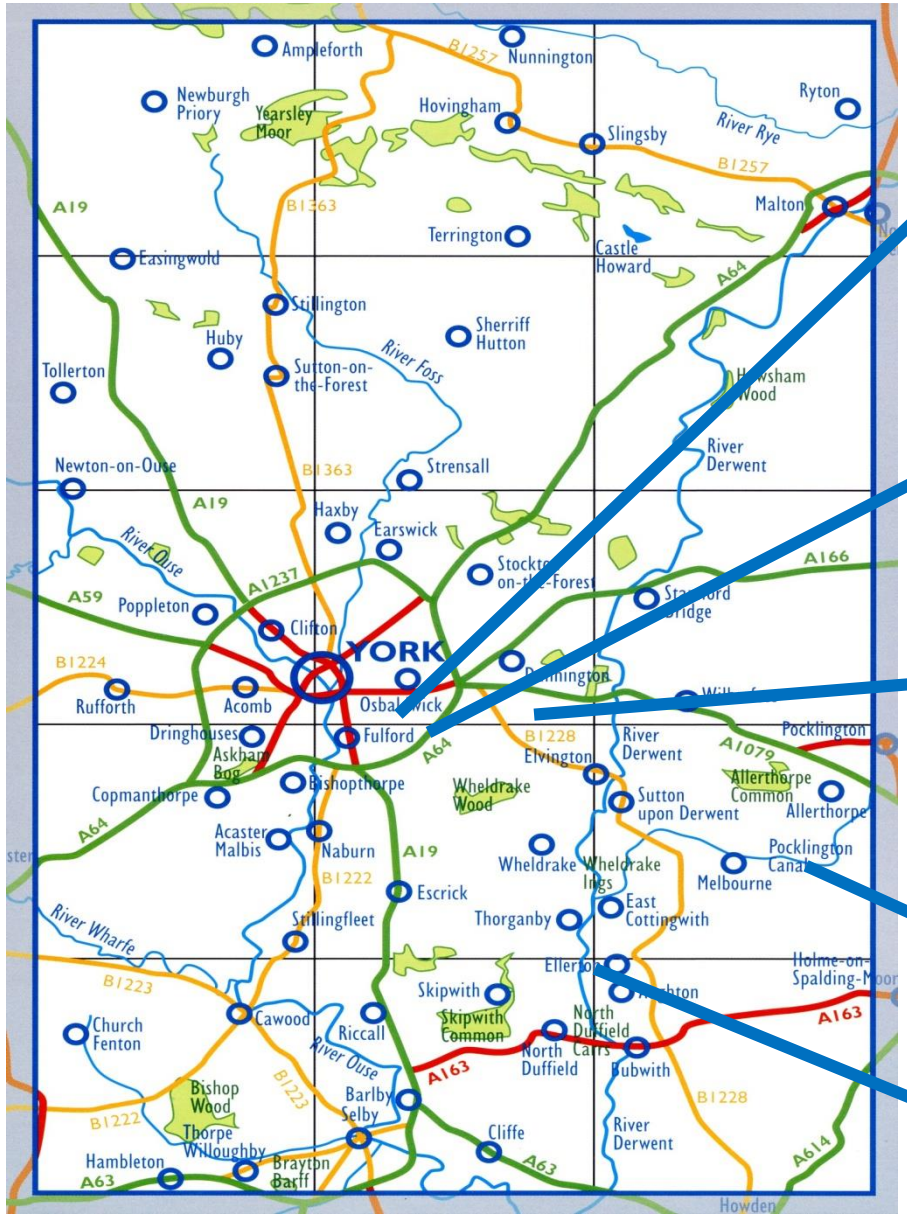
Nottingham 13th November 2019

I got my first bird-book when I was seven years old, and have watched birds ever since
‘Professionally’ I’m an entomologist
And I dabble in botany, mammals, amphibians, in fact more-or-less anything alive



Age 8 with my younger brother David

Age about 12 or 13, again with my younger brother



BTO GARDEN BIRDWATCH

- garden birds
- butterflies
- other insects
- mammals, amphibians
- Tawny owl survey

MONITORING HESLINGTON EAST UNIVERSITY CAMPUS

- birds
- plants
- butterflies

BTO BREEDING BIRD SURVEY

- birds in breeding season
- mammals
- butterflies

Pocklington Canal, personal survey of Odonata and Reed Warblers

Lower Derwent Valley NNR
More time than is healthy!

York Ornithological Club Recording Area, my main stamping grounds

Heslington East University of York Campus
My ‘local patch’

Not showing this because it is special, but because it is now so ordinary. That is what is so very extra-ordinary

- **We are a nation of nature recorders**
- **The NBN is phenomenal - citizen science on a grand scale**
- **18,700 volunteers involved in structured monitoring surveys of bats, birds, butterflies and pants**
- **70,000 volunteers submit records to national recording schemes and societies**
- **Currently 147 *Data Partners* that feed data into the NBN Atlas**

(I am grateful to Mandy Henshall for these estimated numbers)

Across all taxa, results are amazing
NBN Atlas has grown from 18.5 million records (when it was called the Gateway) in 2005 to over 225 million (and counting) today

Total number of species with records available through (what was the Gateway) was 43,500 in 2005

It is now more than TEN times that number (450,000)

It’s not all plain sailing

- As a scientist I believe passionately in open access
- As President of the York Ornithological Club (along with the Committee) I insist on only releasing data freely for non-commercial purposes. We charge consultants for access to our data
- As does the BTO, for example
- We have to because data are valuable, and organisations from large (the BTO) to small (YOC) have to survive financially

I have no idea how to solve the dilemma

Citizen Science is, of course, not without its critics
In a letter to *B.B.* in 2012, Richard Porter argued that some apparent declines in common birds are due to deafness in aging volunteers

Letter

Hearing tests for bird survey workers?

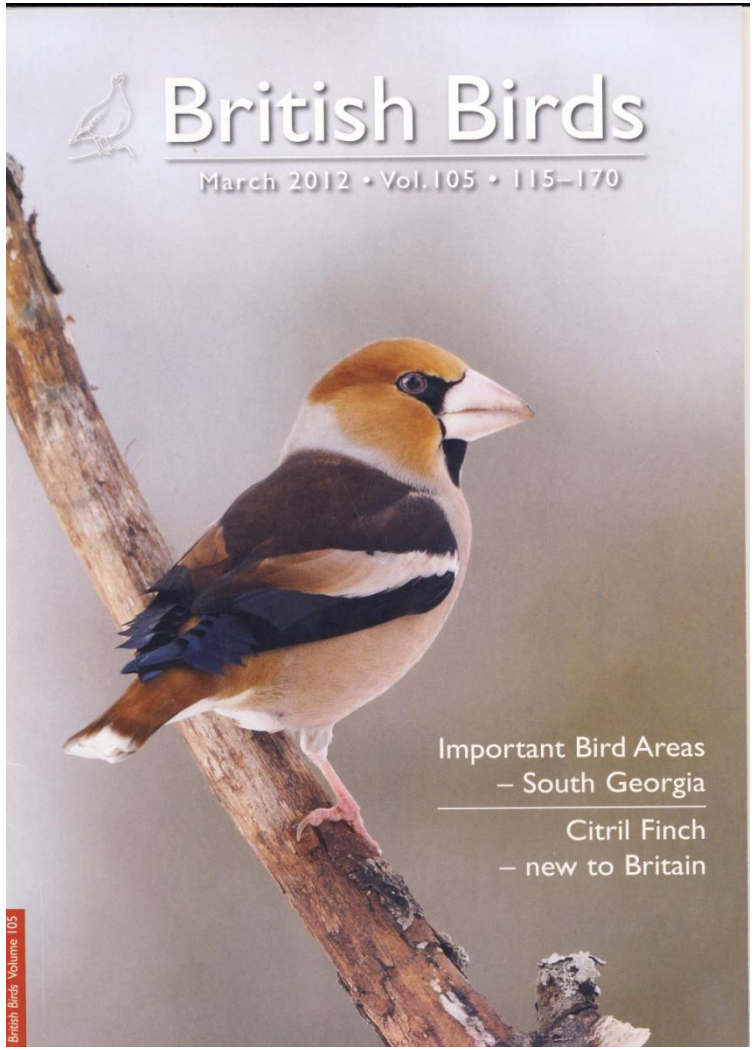
Fifty years ago, in the spring of 1962, I took part in the first year of the BTO Common Birds Census, my patch being in the grounds and adjacent woodland of the National College of Food Technology at Weybridge, in Surrey. One of the commonest birds was the Willow Warbler *Phylloscopus trochilus* and most were located by ear. If I repeated the census now, and assuming there had been no population change, my counts would be much lower, as I would be failing to pick up many singing birds. The ageing process!

Now jump from Weybridge's exclusive St George's Hill to the remote Arabian island of Socotra where, since 1999, I have been engaged in BirdLife International's census to determine the population of the breeding landbirds. This has involved undertaking 400 km of line transects, where all species have been recorded (seen and heard) over a fixed band-width. In spring 2011, I decided to repeat some of the earlier transects in the low coastal habitat of the endemic Socotra Cisticola *Cisticola haesitatus* – a bird located mainly by its high-pitched song. In crude terms, I was recording half the numbers that I did some ten years previously, yet my Socotran companion, Ahmed Saeed Suleiman, with his ever-sharp ears, was recording similar numbers to those of a decade ago.

Back to Norfolk where, for the past three years, I have made TTVs for the forthcoming BTO Atlas. As most *BB* readers will know, this required counting all birds, seen and heard, during a two-hour walk through a designated tetrad, then using this as the basis for a stab at the bird population (breeding and wintering) in the tetrad. Given that I find it now difficult to hear many bird songs farther away than, say, 50 m, and the calls of a number of species impossible to detect, I wonder just how good my population estimates are?

With an ageing BTO membership and therefore, presumably, an ageing voluntary survey workforce, how does this affect our survey results? Certainly I can no longer trust my records if listening for songs and calls is required and I'd hate to think that some species are becoming rarer simply because we can't hear them! It would be interesting to know whether the 'age signal' can be isolated from any long-term survey results.

Richard Porter, King's Head Cottage, Cley-next-the-Sea, Norfolk NR25 7RX;
e-mail rfporter@talktalk.net



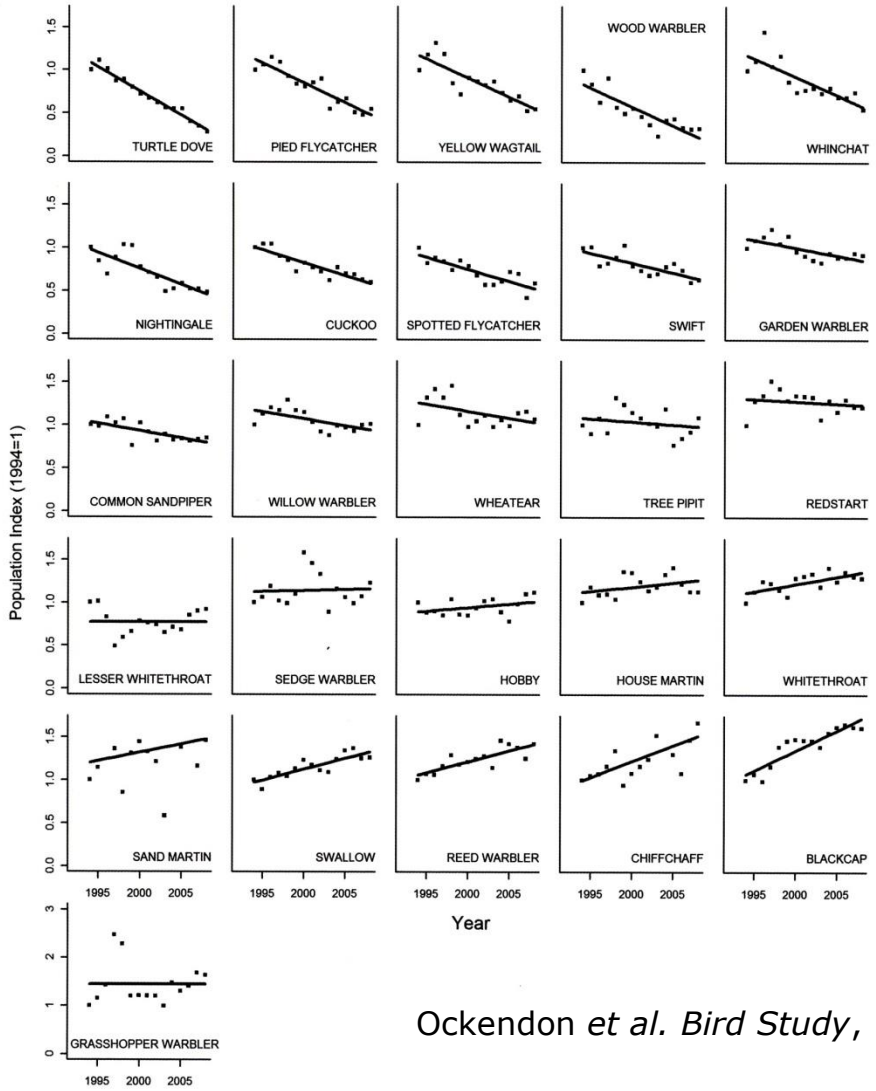


Figure 1. Linear population trends fitted to annual relative abundance indices produced from breeding bird survey data for 26 Afro-Palaearctic migrant species between 1994 and 2008. Note difference in *y*-axis scale for Grasshopper Warbler.

Aging survey workers

Young survey workers

Survey workers with hearing aids

Ockendon *et al. Bird Study*, 59 (2) 2012

Let me share with you my ‘best’ find this year

The Boris fungus!

Probably a species of *Ganoderma*, Norfolk Wildlife Trust’s Pigneys Wood reserve

Because of (largely) volunteer recorders, we know a huge amount about the state of the UK's flora and fauna, going back well over 100 years, now brought together in *The State of Nature* reports, in 2016 and October this year. They make depressing reading

As one of my colleagues once said to me: "We have the best documented and most [messed about] flora and fauna in the world" – except he didn't say "messed about"

The NBN has played a pivotal role in the *State of Nature* reports. It involves a huge partnership co-ordinated by RSPB, with the NBN data being crucial.

More formally

***State of Nature 2016* report showed[1]:**

- **56% of UK species[2] assessed in the report have declined over the last 50 years**
- **31% have declined strongly**
- **Invertebrates are declining faster than other animals**
- **Average species abundance and/or range-size has fallen by 16% over last 50 years**
- **15% of species in Britain are thought to be extinct or threatened with extinction (more than 1 in 10 of the nearly 8,000 species assessed)**
- **Plants are the taxonomic group under greatest threat, with 19% of species threatened with extinction**
- **213 species of special conservation concern have declined by 67% over last 50 years**
- **The UK has lost significantly more nature over the long term than the global average (we rank [from least to most losses] 189th from 218 countries)**

[1] Based on data from 53 organisations
[2] Vertebrates, invertebrates and plants

High Brown Fritillary

Yet three years later (this October) “nothing has changed”
In fact the catastrophe continues apace

- **This time more than 70 organisations supplied data**
- **15% of the 8,431 specie assessed at risk of extinction in the UK (about 1250 species)**
- **The range-size of more than 6500 species continues to contract**
- **Government expenditure on biodiversity has fallen as a proportion of GDP by 42% since 2009**
- **On the evidence in the report the UK will miss most of our biodiversity targets for 2020**

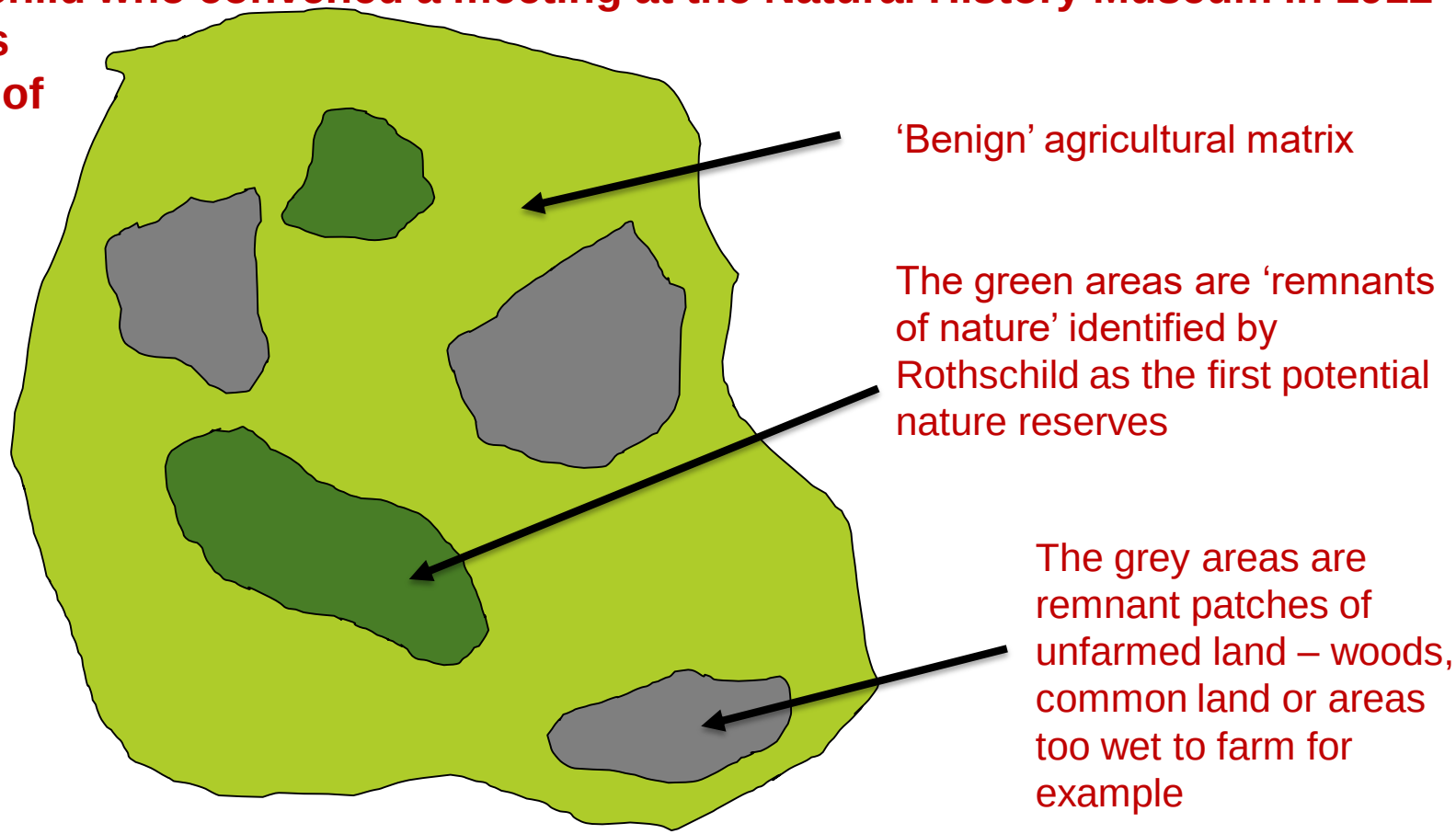
Why is it happening?
Pollution, Urbanisation, and Construction of Infra-structure all play a part
But the two biggest drivers are Climate Change and (currently well ahead of that) Agricultural Intensification

In the simplest possible terms, the UK’s protected area network is too small to stop the rot

The establishment of first nature reserves in England was due to the genius and drive of the Hon. Charles Rothschild who convened a meeting at the Natural History Museum in 1912

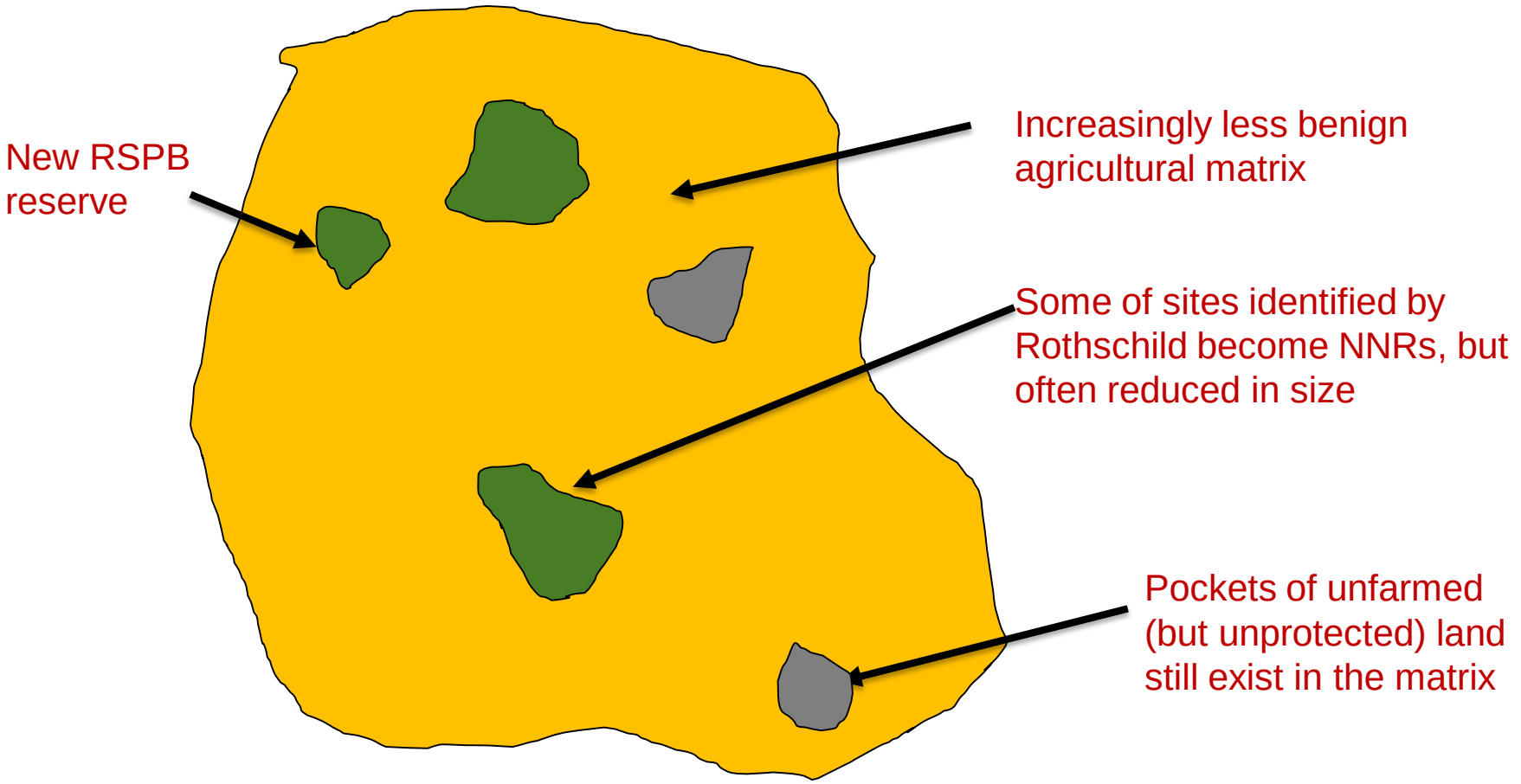
The first nature reserves followed in the first half of the 1900s

Roughly the situation Between 1870 and 1940



Rothschild had been motivated by the loss of "unspoiled nature" during his lifetime. But despite his concerns, between ca 1870 and 2nd World War UK agriculture had been in a serious depression, with abandonment of marginal land, an increase in rough grazing, and a decline in the workforce of ca 43%, leaving a lot of land uncultivated, and extensive 'messy edges' – we had a landscape rich in nature

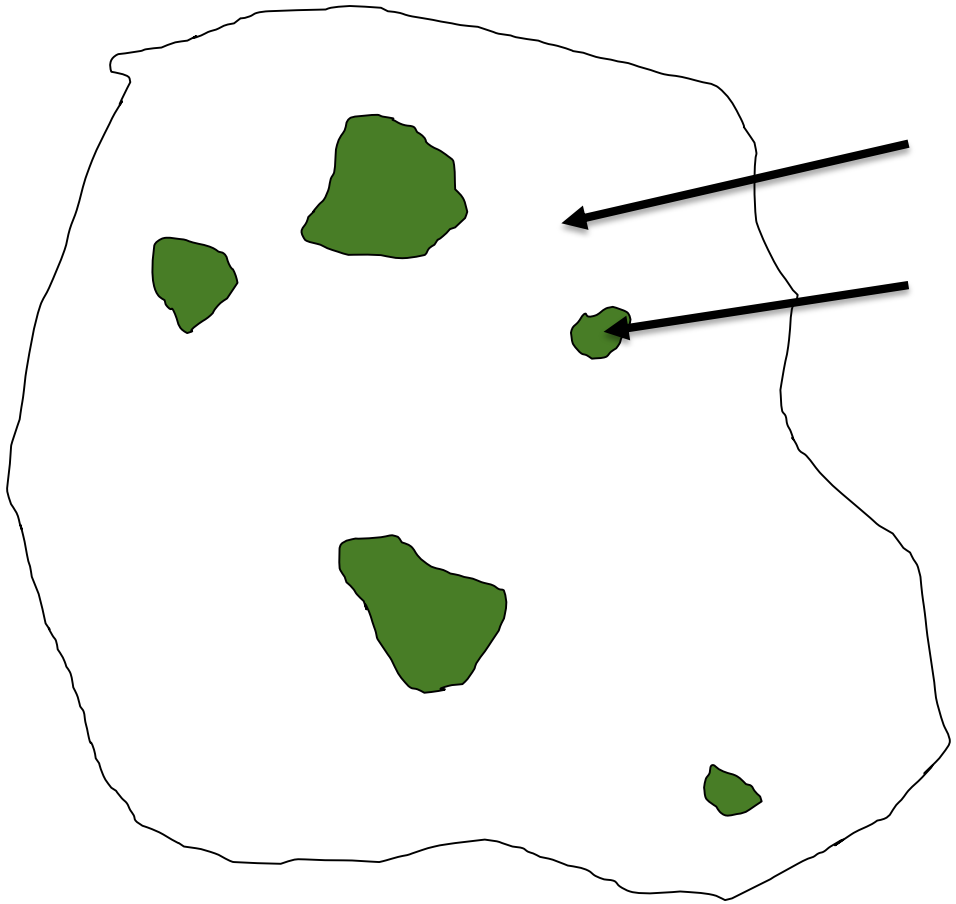
ca 1950-70



Ian Newton* refers to this period as the "post-war farming revolution" – involving the mechanisation and "chemicalisation" of agriculture. Nature reserves are increasing in number, but the surrounding agricultural matrix is increasingly hostile for wildlife

*Newton, I (2017) *Farming and Birds.* Collins New Naturalist

2000 – present day



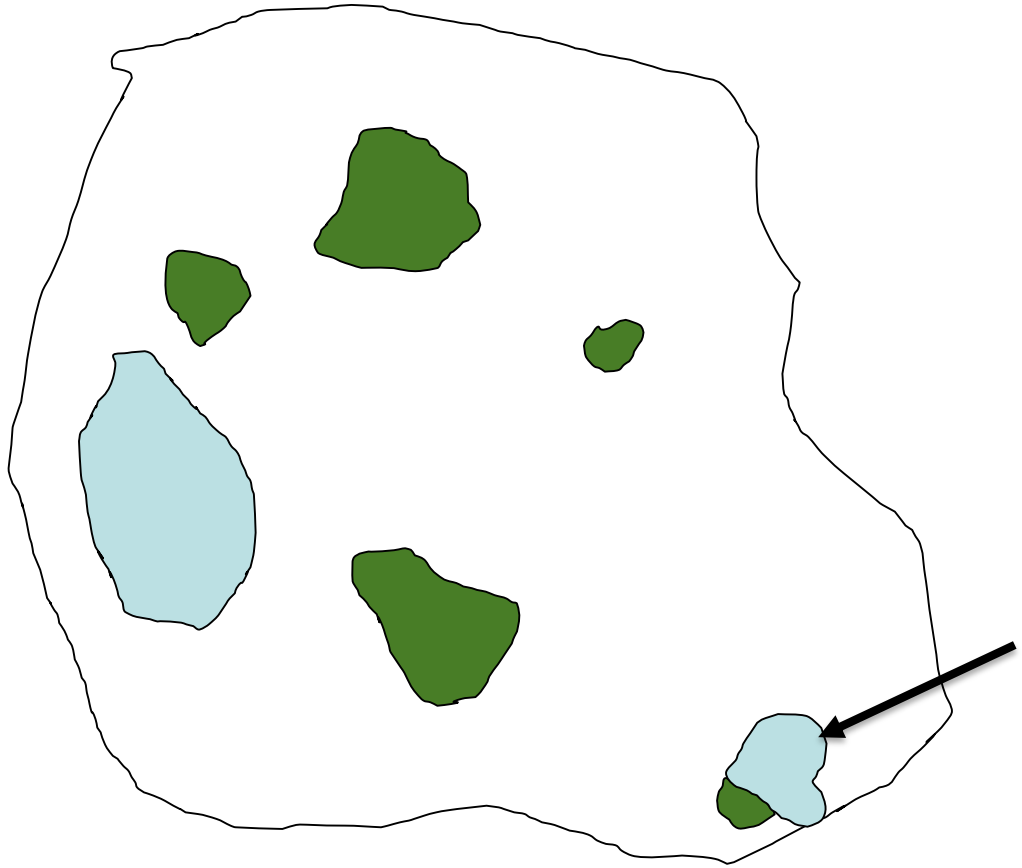
Much of the agricultural matrix now hostile to wildlife

Many (but not all) sites of nature conservation value now have a degree of protection, But they are often much reduced in size

- **Paradoxically, although the number of protected sites increased markedly in the second half of the 20th Century, the area of land available for nature decreased.**
- **Surviving sites also became more isolated.**
- **We made less space for nature, not more.**

Inevitably, species have declined both in variety, and in abundance

But things are changing. Since the 1980s, slowly at first, conservation moved from 'just' preservation (hanging on to what we had got), to include both preservation *and* restoration of sites outside existing reserves



It is not possible to define with certainty when the first deliberate large-scale habitat restoration and re-creation projects took place in the UK.
But by the mid 1990s we can identify a growing number of projects "putting nature back" into the landscape.
And the process is accelerating

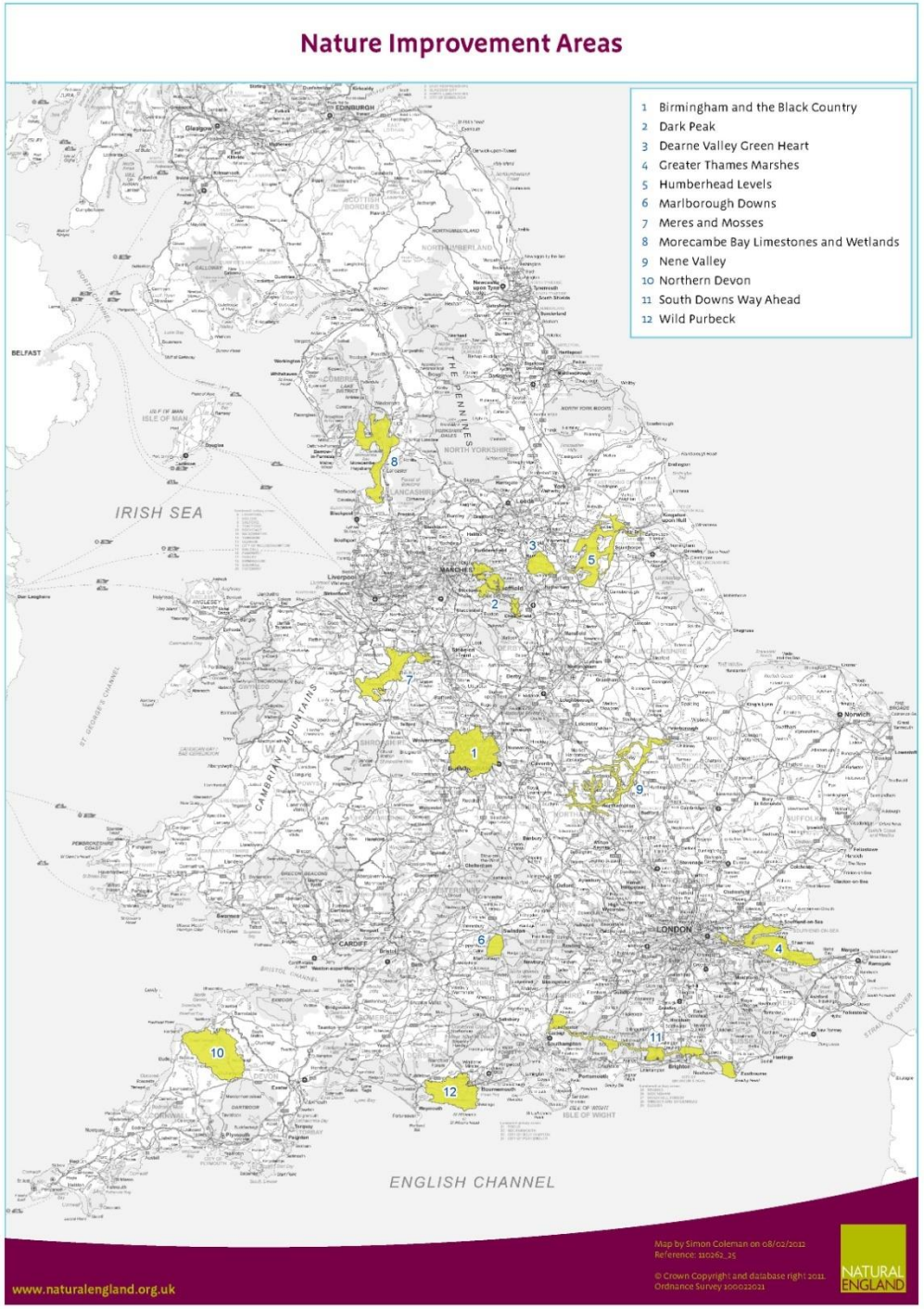
I think the first RSPB project was the creation of Lakenheath Fen in Suffolk when I was Chairman of Council and Barbara Young was Chief Executive

It was certainly unusual enough for several members of Council to think that buying carrot fields was mad, which is what we did in 1995 to create a 3km^2 wetland

This wouldn't have been possible without Heritage Lottery Funding

As a footnote, in 1994 RSPB were also setting out to create Ham Wall in the Avalon Marshes in Somerset on abandoned peat cuttings, NOT on agricultural land

From carrots to cranes. Lakenheath Fen today



The first 'official' (i.e. government-supported) programme was the Nature Improvement Area competition arising from *Making Space for Nature* (2010)

- **Not imposed – 'consortia of the willing' (local communities, farmers, NGOs [e.g. WTs, RSPB], statutory agencies [e.g. EA, FC], utility companies [e.g. SW Water] etc.)**
- **12 winners**
- **Started work in 2012 with total of £7.5m government funding until 2015 (leveraged additional £40m)**
- **Modal size ca 500km^2**
- **Across all 12 ca 25km^2 of habitats re-created/restored**
- **Classic Land Sharing, putting nature back into working landscapes**

1. Birmingham and Black Country
2. Dark Peak
3. Dearne Valley
4. Greater Thames Marshes
5. Humberhead Levels
6. Marlborough Downs
7. Meres and Mosses of the Marches
8. Morecambe Bay Limestone and Wetlands
9. Nene Valley
10. North Devon
11. South Downs Way Ahead
12. Wild Purbeck

Across all sources of funding what's happening in the UK and Europe right now is exciting. The *More, Bigger, Better and Joined* movement that started with *Making Space for Nature* in 2010 has really taken off

Going roughly from smaller to larger areas, initiatives planned or in train include:

Land sharing initiatives

- **GWCT/NE Farmer Clusters initiative**
- **Jordans Farm Partnerships** (TWT, LEAF and Prince's Countryside Fund)
- **National Trust Priority Habitats initiative**
- **Wildlife Trusts Living Landscapes**
- **RSPB Futurescapes**
- **YWT Yorkshire Peat Partnership**
- **UK Government's 25 year environmental plan**

Both these pre-date *Making Space*

(Re)-wilding initiatives

- **Knepp**
- **Wild Ennerdale**
- **CCI Endangered Landscapes Programme** (Europe-wide)

  Two in UK: **Cairngorms Connect**

  Summit to Sea (mid-Wales)

As well as numerous site-specific initiatives (both private and consortia)

There is no ‘central register’ of the scale and extent of habitat restoration and re-creation in the UK

But it’s big

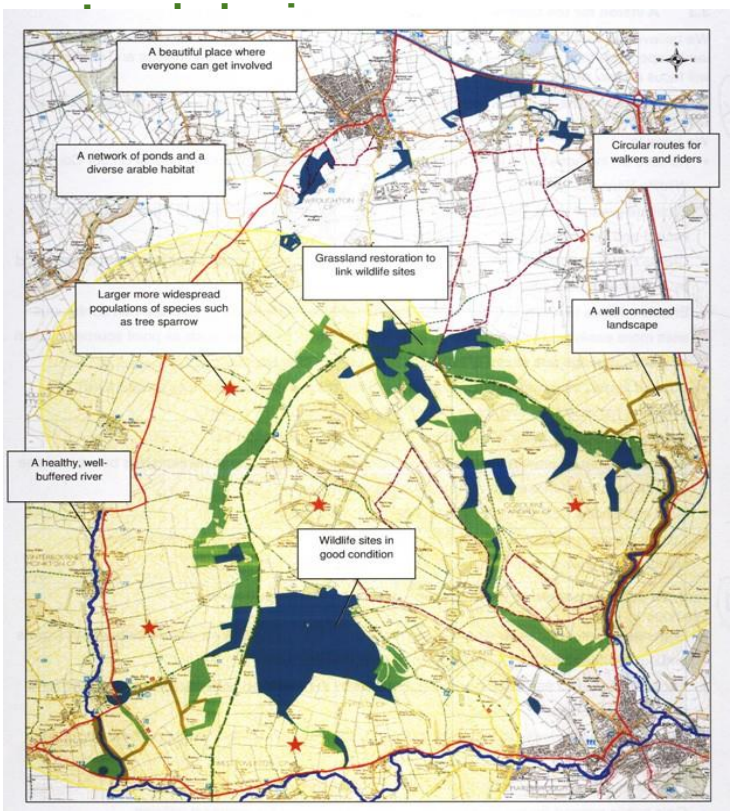
We might just have turned the corner, putting more habitats back than we are destroying
Possibly, just possibly the NBN will cease to be a meticulous record of the death of nature in the UK and become the broadcaster of its recovery

Lets have a look at some of them

Huxter Well Marsh, Potteric Carr
Yorkshire Wildlife Trust, habitat creation supported by HLF

Game & Wildlife Conservation Trust/Natural England Farmer Clusters initiative

- Modelled on the Marlborough Downs NIA, the only farmer-led NIA in the country.
- Helps groups of farmers work together, to collectively deliver greater benefits for soil, water and wildlife at a landscape scale.
- Start life at a bottom-up, farmer level. They devise their own conservation plans.
- Although the work is often supplemented by existing agri-environment schemes, several Clusters have set up with no funding except the farmers' own money.
- Five Clusters established across southern England as part of a pilot scheme (2013-15) now grown to over 100, covering ca 4,500km^2 and ca 1,700 individual farmers and landowners (November 2018 – no later figures on the website).



National Trust Priority Habitats initiative aims to:

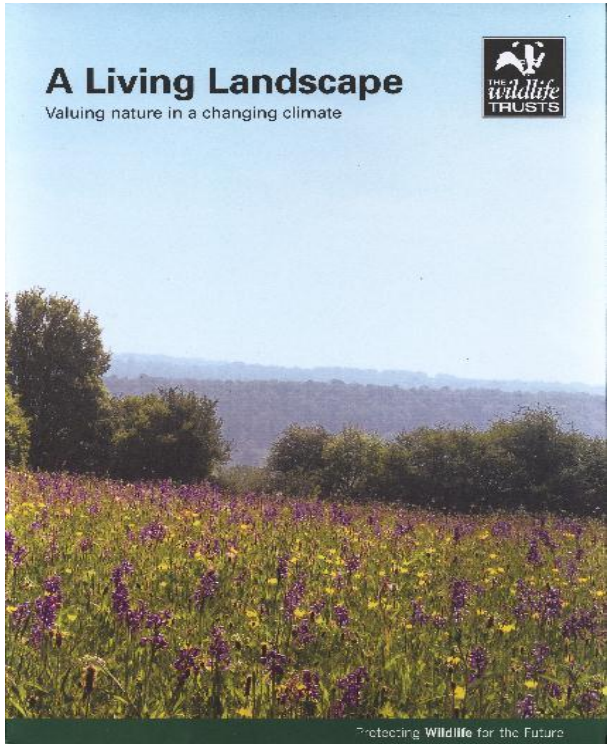
- **Create or restore 250 km^2 ha of habitat on Trust land by 2025 (10% of NT land-holdings)**
- **Have at least 50% of its farmland "nature friendly" by then**
- **Target habitats identified as threatened and in need of conservation support**
- **Take the approach established in NIAs (e.g. planting hedges and new woodlands, establishing lowland meadows, restoring chalk grassland, creating wetlands)**
- **Work in partnership with its tenant farmers**

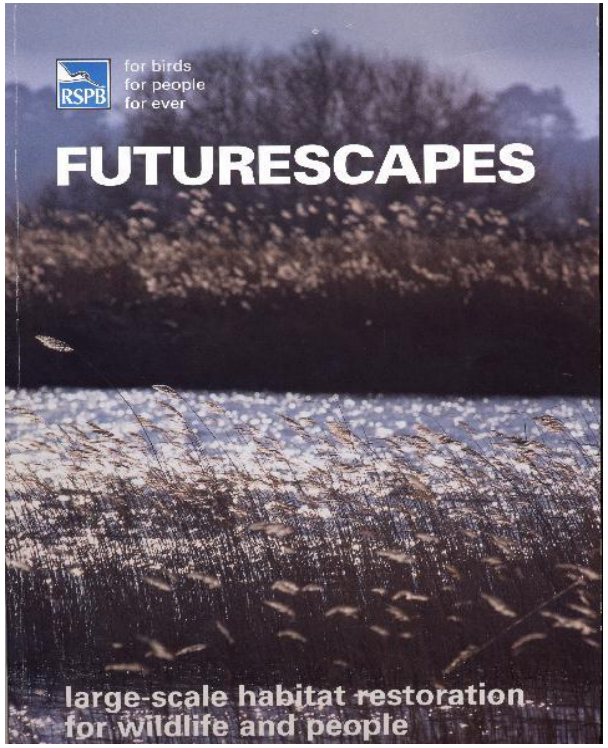
Again, classic Land-Sharing, setting conservation areas into working landscapes, heavily influenced and managed by human actions

Wildlife Trusts Living Landscapes

Living Landscapes **are a shared vision to put nature back into the wider countryside by habitat conservation, restoration and re-creation.**

No central data on the aggregate total of habitat re-creation across all the Trusts, but substantial. Largest single project Yorkshire Peat Partnership, which has restored over 300km^2 of peat bogs





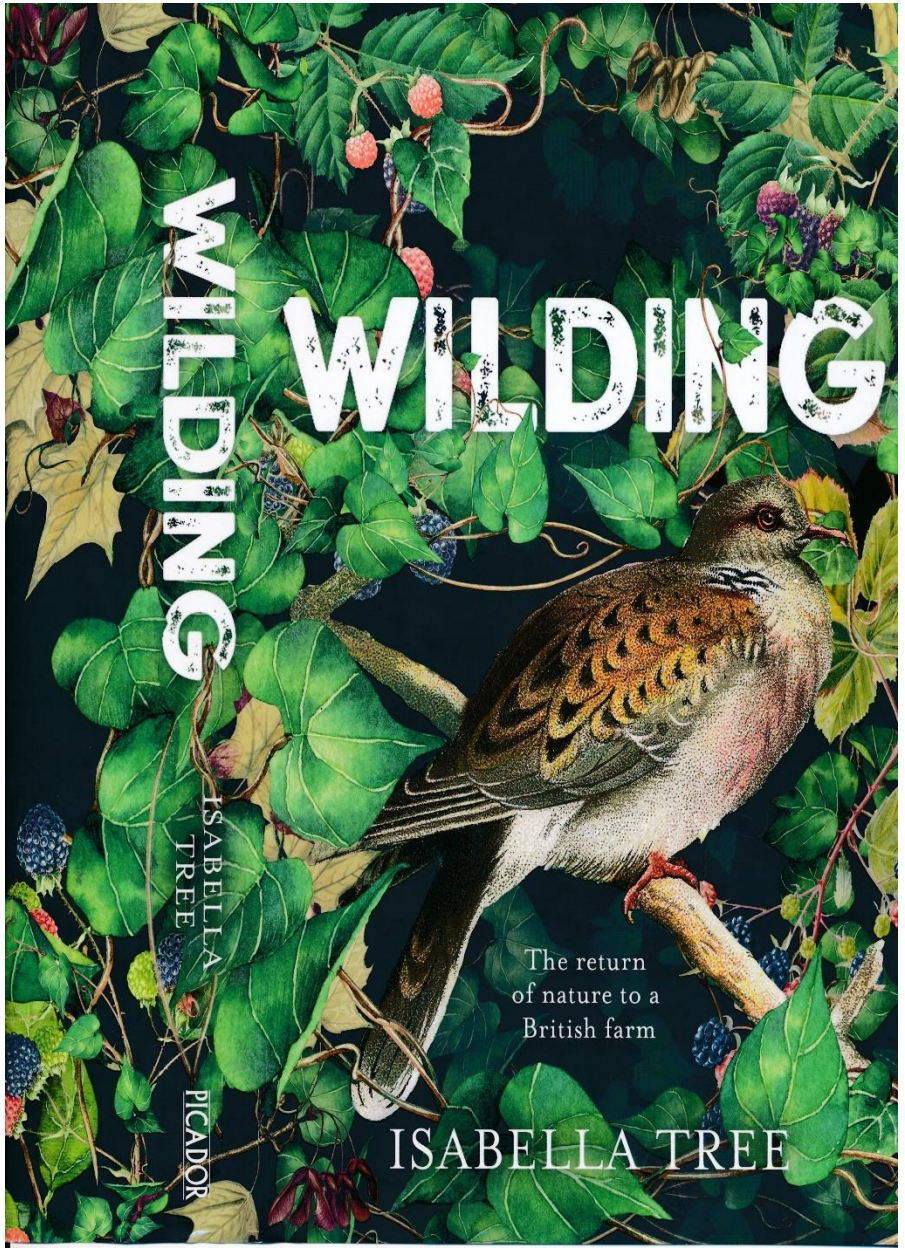
RSPB Futurescapes

Between 1990 and 2015, recreated 87.5km^2 primarily wet grassland, reedbeds, inter-tidal habitats and saline lagoons.

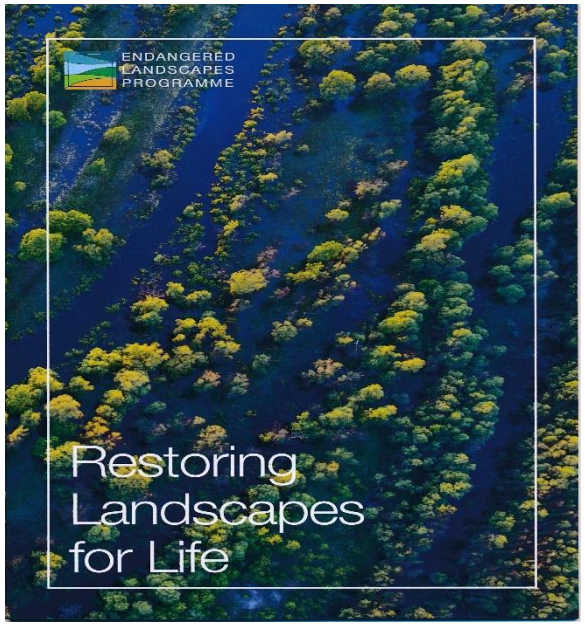
Dearn Valley, Lakenheath, Leighton Moss, Saltholme, Rainham Marshes, Frampton Marsh, Otmoor, and the biggest of all: Wallasea Island.

Finally re-wilding, or if you prefer, wilding

Wild Ennerdale – 47km^2



Knepp Estate – 14km^2
25km from Gatwick airport

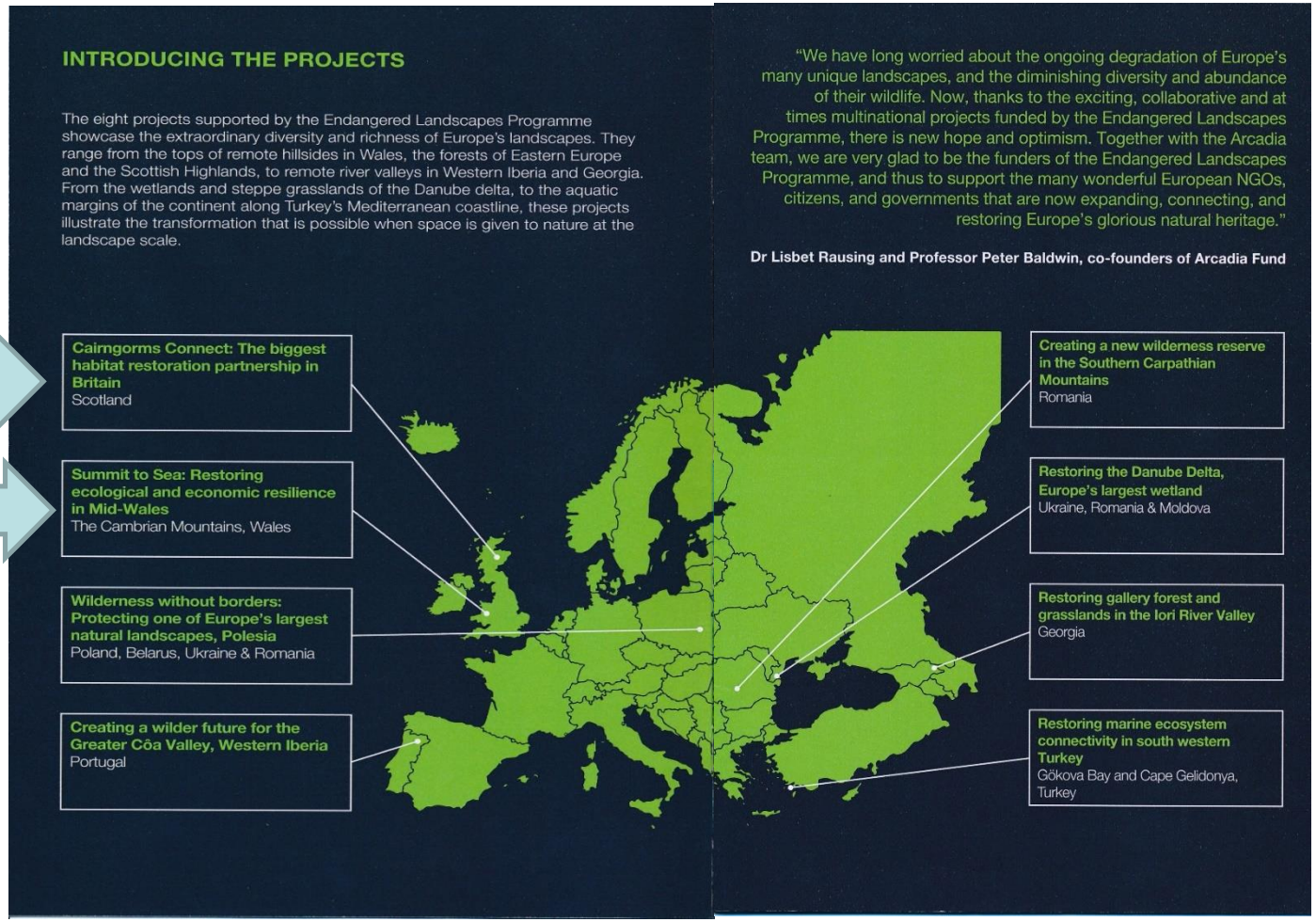


The *Endangered Landscapes Programme* is funded by Arcadia, a charitable fund of Lisbet Rausing and Peter Baldwin, who are investing an initial $30m on eight projects chosen competitively.

I have the privilege of Chairing the Oversight and Selection Panel.

ELP* is administered by the *Cambridge Conservation Initiative.

Two of the sites are in the UK



CAIRNGORMS CONNECT: THE BIGGEST HABITAT RESTORATION PARTNERSHIP IN BRITAIN

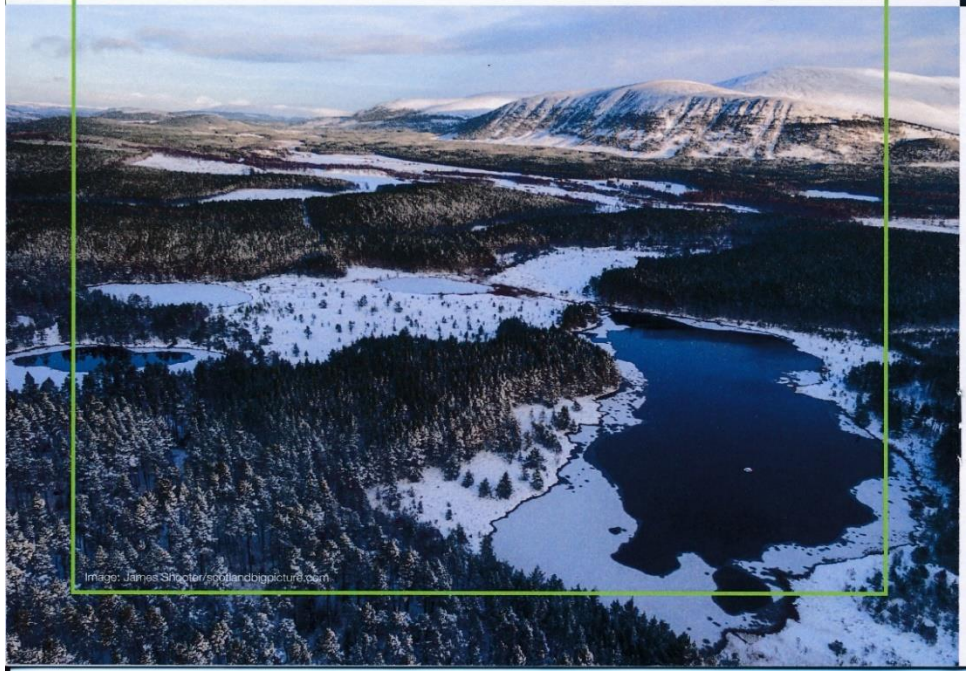
Cairngorms National Park, Scottish Highlands

Ice-hewn mountains, lochs and pinewood forests in the Scottish Highlands provide dramatic scenery and vital habitat for a wealth of charismatic species including wildcats and ospreys. In the past, the patterns of land management in the Highlands have been defined by the needs of agriculture, commercial forestry and field sports. Now, within 60,000 ha of contiguous land inside the catchment of the River Spey, the Cairngorms Connect project is shifting the emphasis towards a land management strategy and economy that is based on an appreciation of the area's natural heritage.

PROJECT LEAD:

rspb giving nature a home Scotland

600 km^2



SUMMIT TO SEA: RESTORING ECOLOGICAL AND ECONOMIC RESILIENCE IN MID-WALES

The Cambrian Mountains, Wales

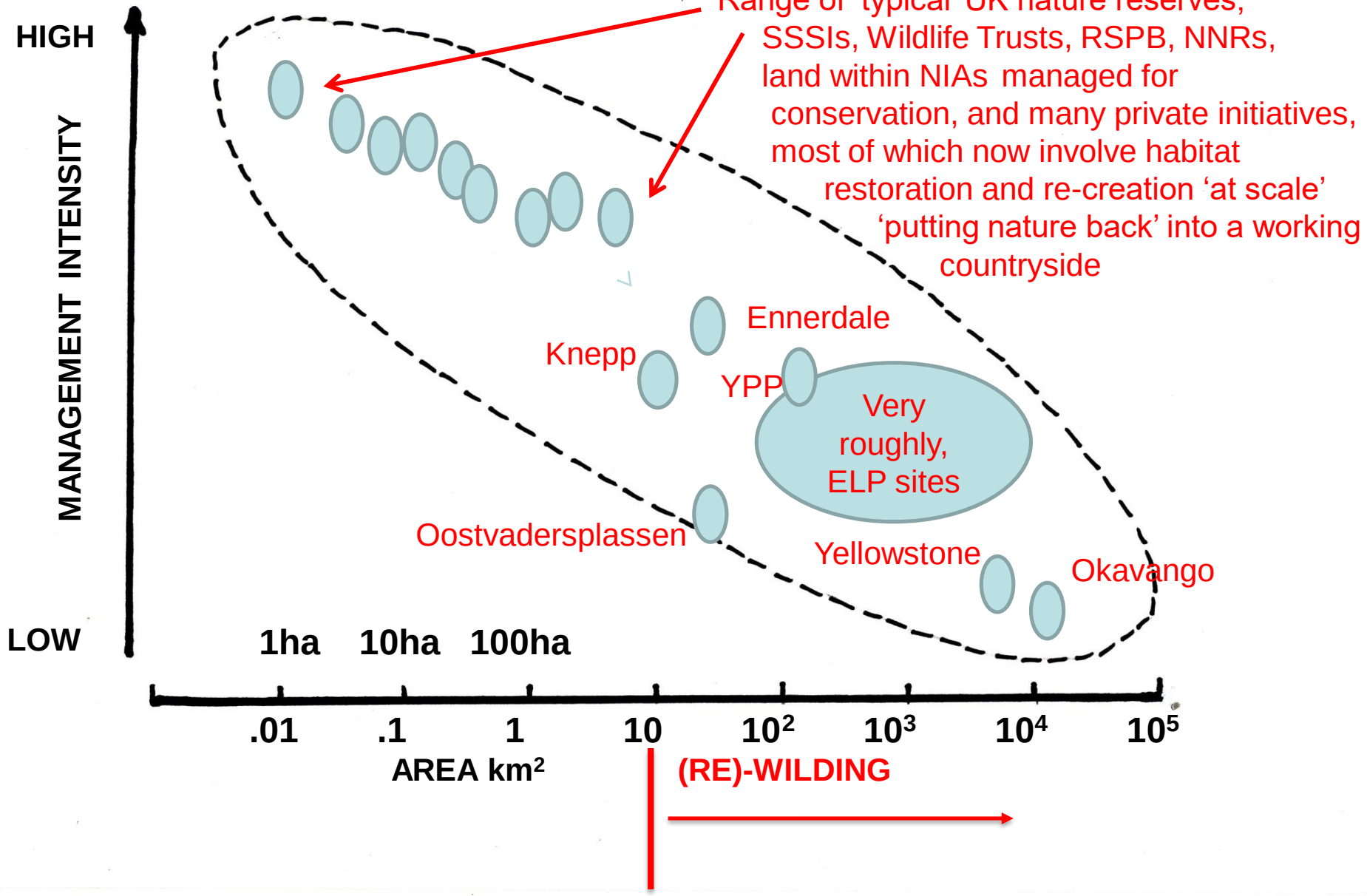
From the rolling hills of the Cambrian Mountains to the expanse of Cardigan Bay, the landscape of this part of Britain carries a rich cultural heritage for its local inhabitants. At present the area is struggling both ecologically and economically, reflected in fragmentation of key habitats and rural unemployment. This project will harness the area's potential for diverse and abundant wildlife and new enterprise opportunities for people, through the revival of a nature-rich zone that extends from the summit of Pumlumon to the marine protected areas of Cardigan Bay.

PROJECT LEAD:

rewilding britain with COED CADW WOODLAND TRUST

100 km^2 on land
20km^2 at sea

‘Cartoon’ spectrum of protected areas scaled by size and by a qualitative indication of management intensity



For the first time in many years I can see possible light at the end of the tunnel

I look forward to the NBN documenting nature's recovery in the UK over the next two decades, rather than depressingly observing nature's demise like a slow train-wreck

We should aim high!

Thank you
Any questions?