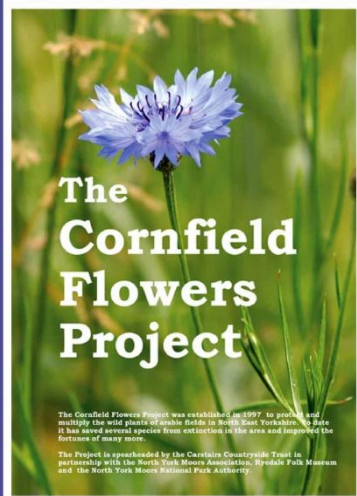
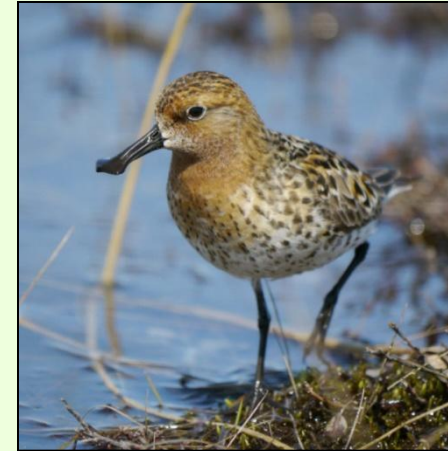


FROM COW GREEN TO REWILDING



A PERSONAL BALANCE SHEET OVER 50 YEARS

- **Conservation Stories**
- **Personal Choice**
- **Positive and Negative**
- **Yorkshire & Beyond**



NOT ALL GLOOM AND DOOM!

UPPER TEESDALE



Sugar Limestone



Primula farinosa



Viola lutea



Gentiana verna



Bartsia alpina



Dryas octopetala

COW GREEN RESERVOIR

**BUILT BETWEEN 1967-71 TO SUPPLY WATER TO THE INDUSTRIES OF
TEESSIDE**



LOST UNDER THE RESERVOIR

- 10% of the Widdybank Fell Sugar Limestone and Flush communities.

Including:

- 100% Tall Bog Sedge *Carex magellanica*
- 40% Rare Spring Sedge *Carex ericetorum*
- 10% Teesdale Violet *Viola rupestris*
- 40% Alpine Rush *Juncus alpinoarticulatus*

LOST: Tall Bog Sedge

Carex magellanica



Carex magellanica BSBI Distribution 2017

Home

Get Involved

News

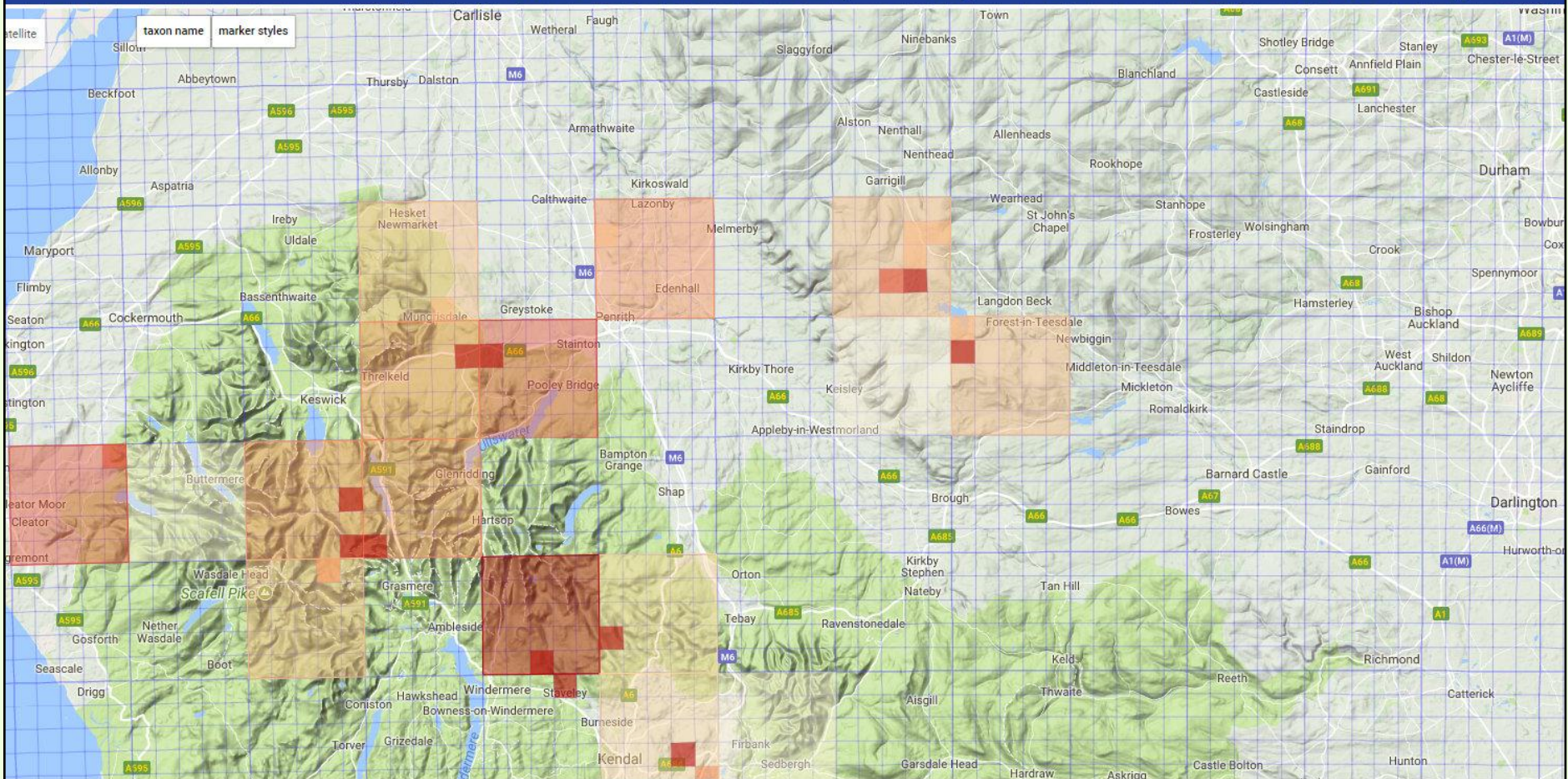
Local Botany

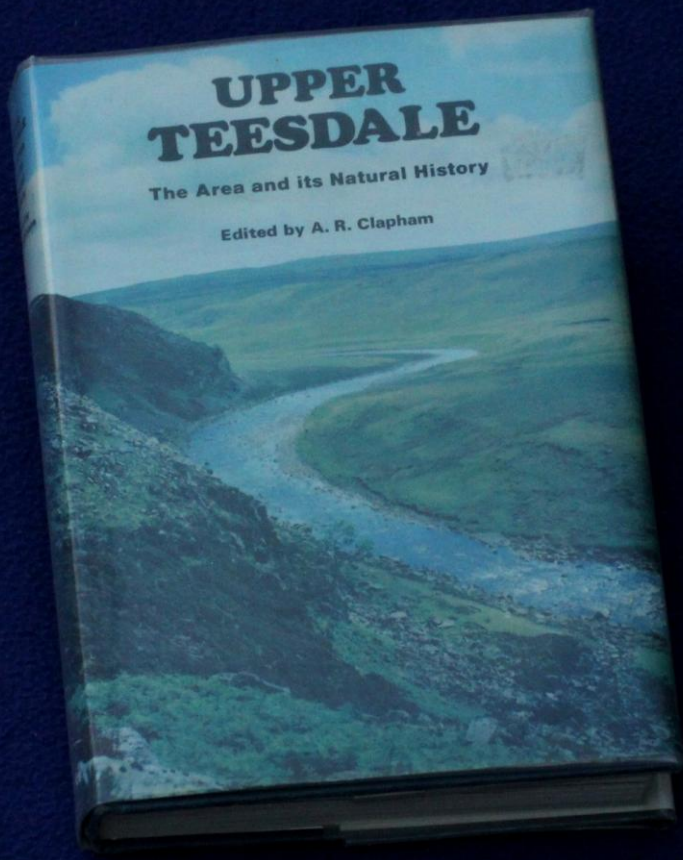
Training

Science

Resources

Contact Us





Welcome to Moor House - Upper Teesdale National Nature Reserve



This National Nature Reserve, one of the largest in England, covers some 88 square kilometres of special upland habitats and rises to 848m (2782 feet). It is Britain's leading site for research into the effects of a changing climate on the natural environment.

The Reserve is famous for its unique Arctic-Alpine plants which have survived here since the last Ice Age and are today conserved by traditional farming and moorland management.

Please help look after the site by following the Countryside Code and, in particular, keep dogs under control to avoid disturbance to ground nesting birds and grazing stock. Do not camp or light fires.

We hope that you enjoy your visit.

The Reserve is managed by Natural England in partnership with Lord Barnard, the Earl of Strathmore and local farmers.

Please see the back of this sign for further important information, or call Natural England on 0300 060 6000.



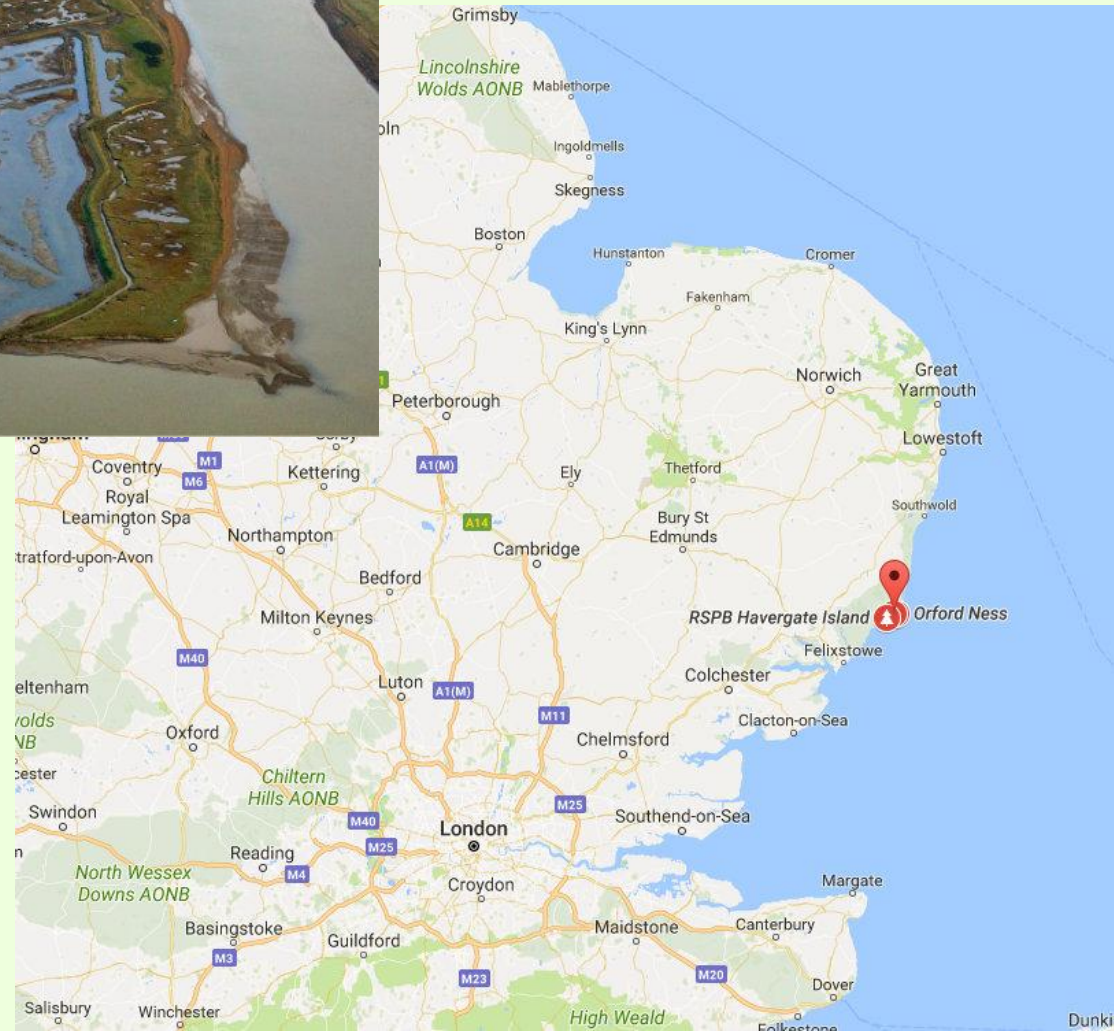
For your own safety keep to the waymarked routes - there are hidden mineshafts in the area. The weather can deteriorate rapidly at this altitude - be prepared with weatherproof clothing, carry and know how to use a map and compass.



SUFFOLK



HAVERGATE ISLAND



THE RETURN OF THE AVOCET

1947



giving
nature
a home

TOPHILL LOW 2012



RETURN OF THE OSPREY LOCH GARTEN 1954



Photo by Ken White

**HAS BRED EVERY YEAR SINCE 1959
NOW 250-300 PAIRS IN UK**



Photo by Ken White

RED KITE AND SEA EAGLE INTRODUCTION

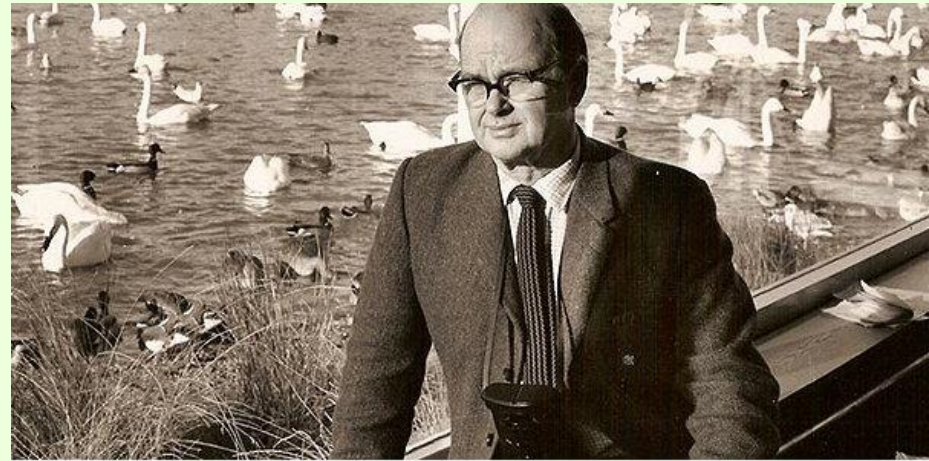
- **LOVELY TO SEE – BUT - IS THIS REALLY CONSERVATION?**



INFLUENTIAL PEOPLE



David Attenborough



Peter Scott

DEREK RATCLIFFE

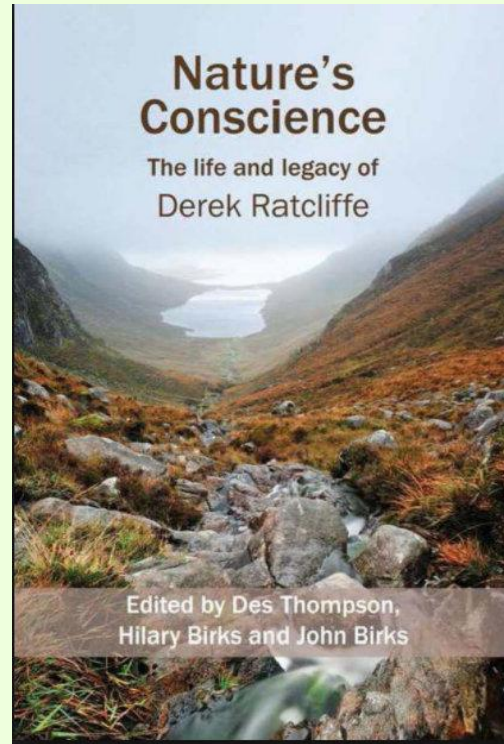
1929-2005

NCC CHIEF SCIENTIST
1974-89

SUPERB ALL-ROUND
FIELD NATURALIST

ARCHITECT OF BRITAIN'S
POST-WAR NATURE
CONSERVATION POLICY

HIS SCIENTIFIC WORK
SAVED THE PEREGRINE
FALCON



THE DEFINITIVE FRAMEWORK FOR COMPARING AND EVALUATING SITES

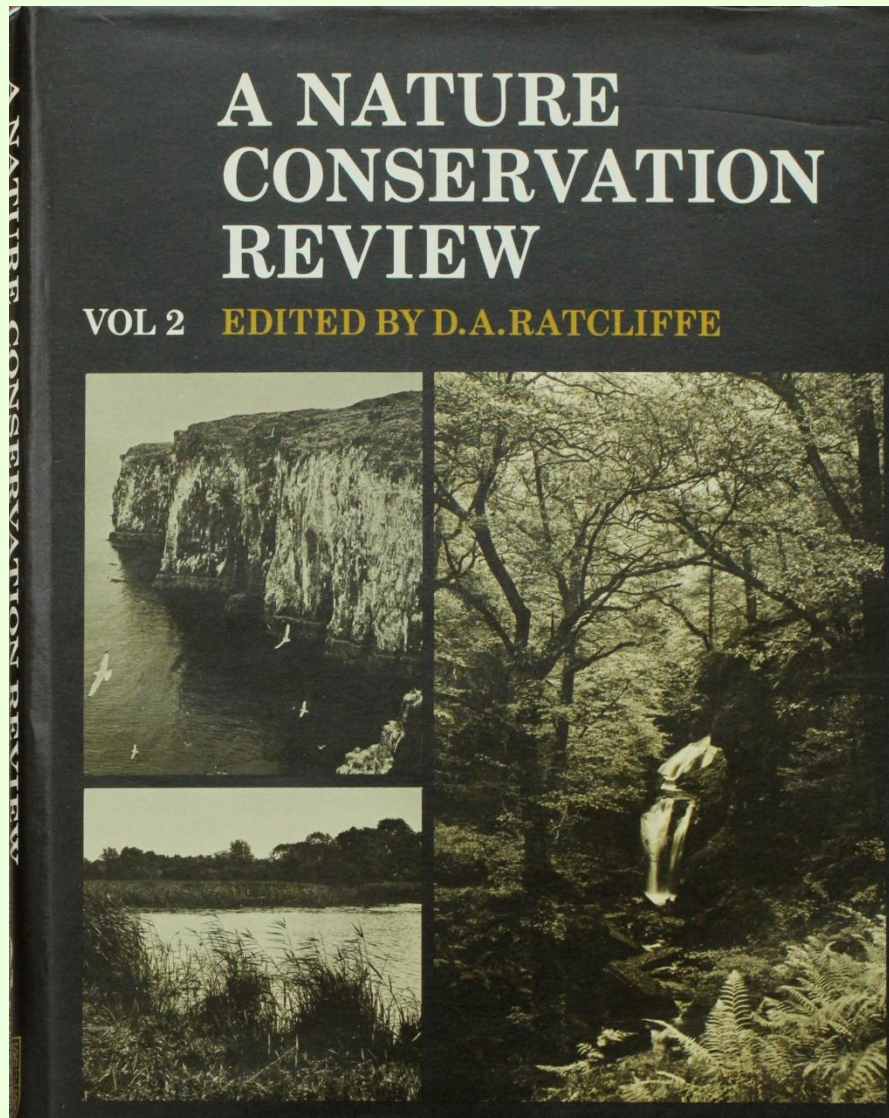


Table 19.1. The ten criteria for site assessment and selection given by Ratcliffe⁽⁶⁾.

Criteria	Description
Size (extent)	Larger sites tend to have greater diversity of features
Diversity	Numbers of communities and species, and range of variation
Naturalness	Ecosystems and habitats least influenced by people
Rarity	Rare communities, habitats, or groups of species
Fragility	Sensitivity of habitats, communities, and species to environmental change
Typicalness	'Living museums', and typical/commonplace in field of ecological variation
Recorded history	Use for scientific study, and long-term records
Position in an ecological/ geographical unit	Number of characteristic formations, communities, and species of a district
Potential value	Through management or natural changes, potential to develop a greater nature conservation interest
Intrinsic appeal	The more popular groups of species, notably birds

**The ten criteria for site assessment
and selection**

PEREGRINE FALCON

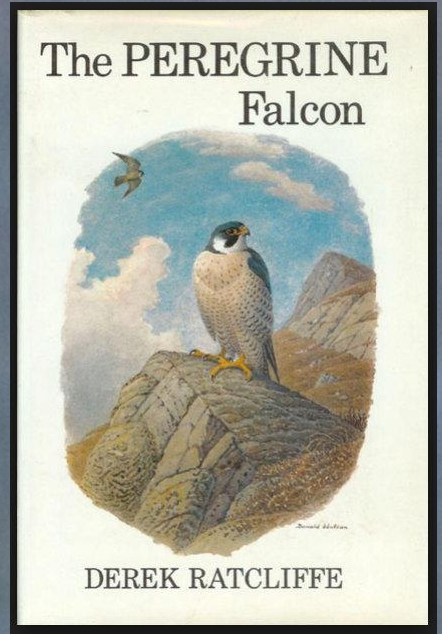


Photo by Ken White

PEREGRINE EGGSHELL THINNING



NATURE. VOL. 215. JULY 8. 1967

Index of thickness in peregrine falcon eggs

DDT is introduced

209

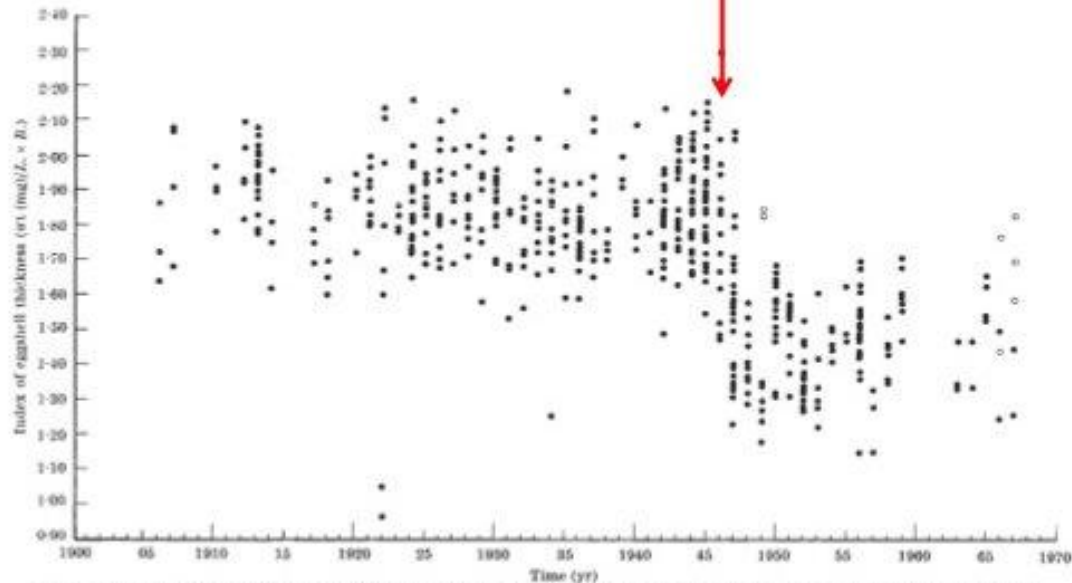
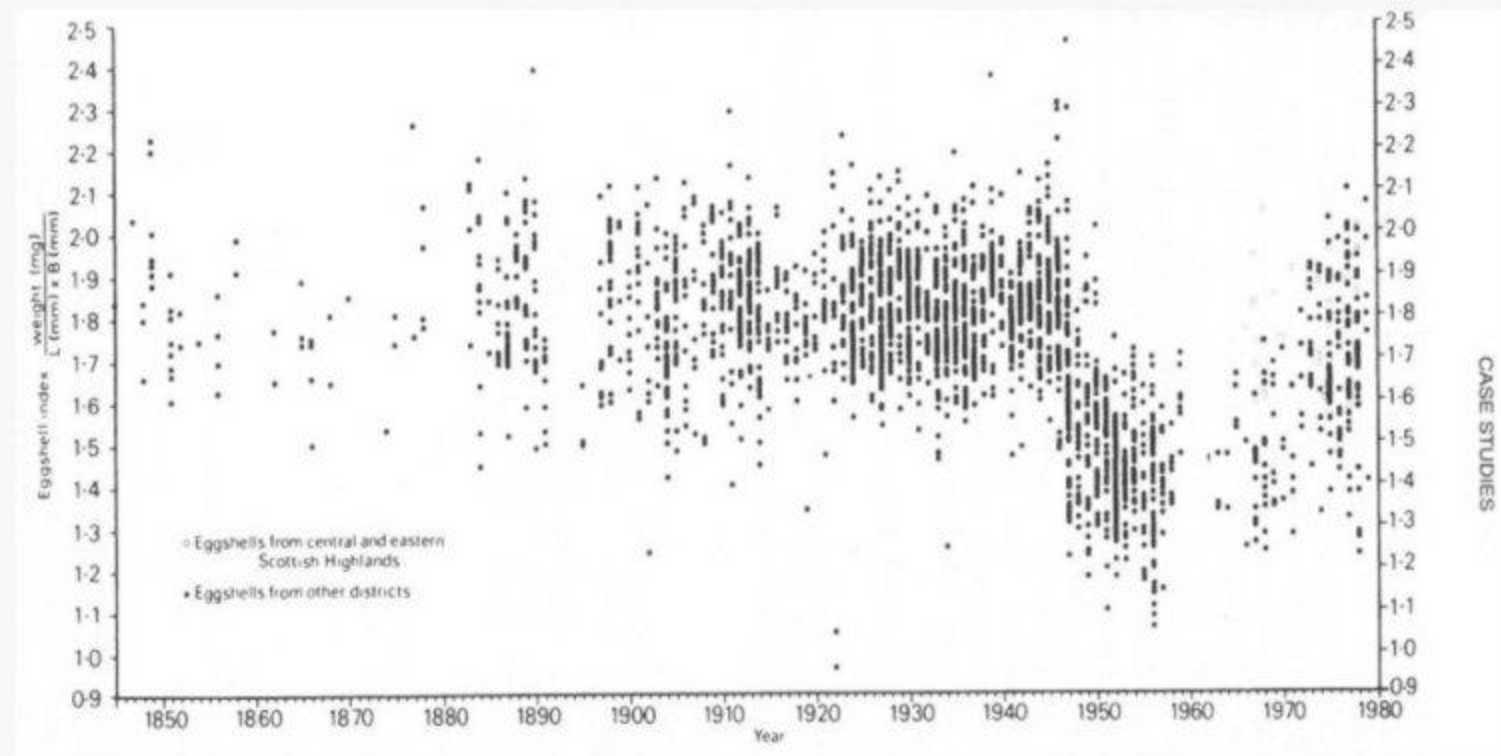


Fig. 1. Change in the ratio of weight to size (index of thickness) in eggshells of the peregrine falcon in Britain. Circles represent eggshells from the central and eastern Scottish Highlands, and dots represent eggshells from other districts (see Table 1).

Ratcliffe 1967

Changes in egg shell thickness index, 1845-1979, for British peregrine falcons (*Falco peregrinus*) (Ratcliffe, 1993)



PEREGRINE POPULATION

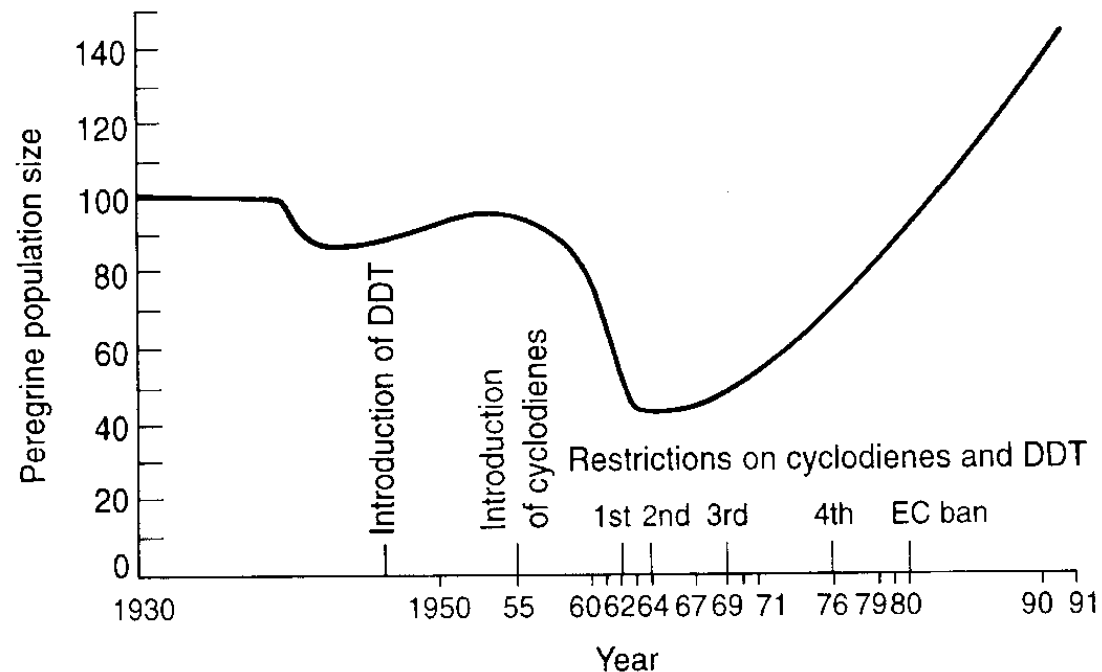


FIGURE 12.17 *Peregrine population size in Britain (1930–9 = 100) showing the 1961 decline and subsequent recovery, together with an outline of pesticide usage. Reproduced from Ratcliffe (1993) Academic Press.*

PEREGRINE RECOVERY

- **NOW 1500 PAIRS IN UK (2014 data)**
- **BREED REGULARLY IN OUR CITIES**



PERSECUTION OF BIRDS OF PREY

Scottish Natural Heritage
Commissioned Report No. 982

Analyses of the fates of satellite tracked golden eagles in Scotland

31 May 2017



SNH REPORT 31st MAY 2017

- **8 satellite-tagged Golden Eagles went missing over 5 years in a small area of Inverness-shire**
- **Of 131 young eagles tracked over 12 years 41 (31%) disappeared under suspicious circumstances, almost exclusively in areas connected with illegal persecution.**

HEN HARRIERS IN ENGLAND 2017

ON THE BRINK OF EXTINCTION



- **Just three successful nests, from a total of seven attempts, producing 10 fledged young.
All successful nests in Northumberland**
- **No breeding success on designated SPAs in Bowland and North Pennines**
- **There is habitat available for a population of at least 300 pairs**

MARSH HARRIER NEST ILLEGALLY TARGETED IN NORTH YORKSHIRE: POLICE APPEAL FOR INFORMATION

DENTON MOOR NIDDERDALE MAY 2017



The Five Marsh Harrier eggs May 2017



**Two armed men leaving the nest;
one believed to be carrying an egg**

NEW TECHNOLOGY



We have lost over half of our breeding cuckoos in the last 25 years but little was known about why

BRITISH TRUST FOR ORNITHOLOGY

CUCKOO SATELLITE TRACKING



Weights 5g– accurate to 500m

Costs £2,500 per satellite tag plus £60 per month to retrieve data



Solar powered
rechargeable
battery

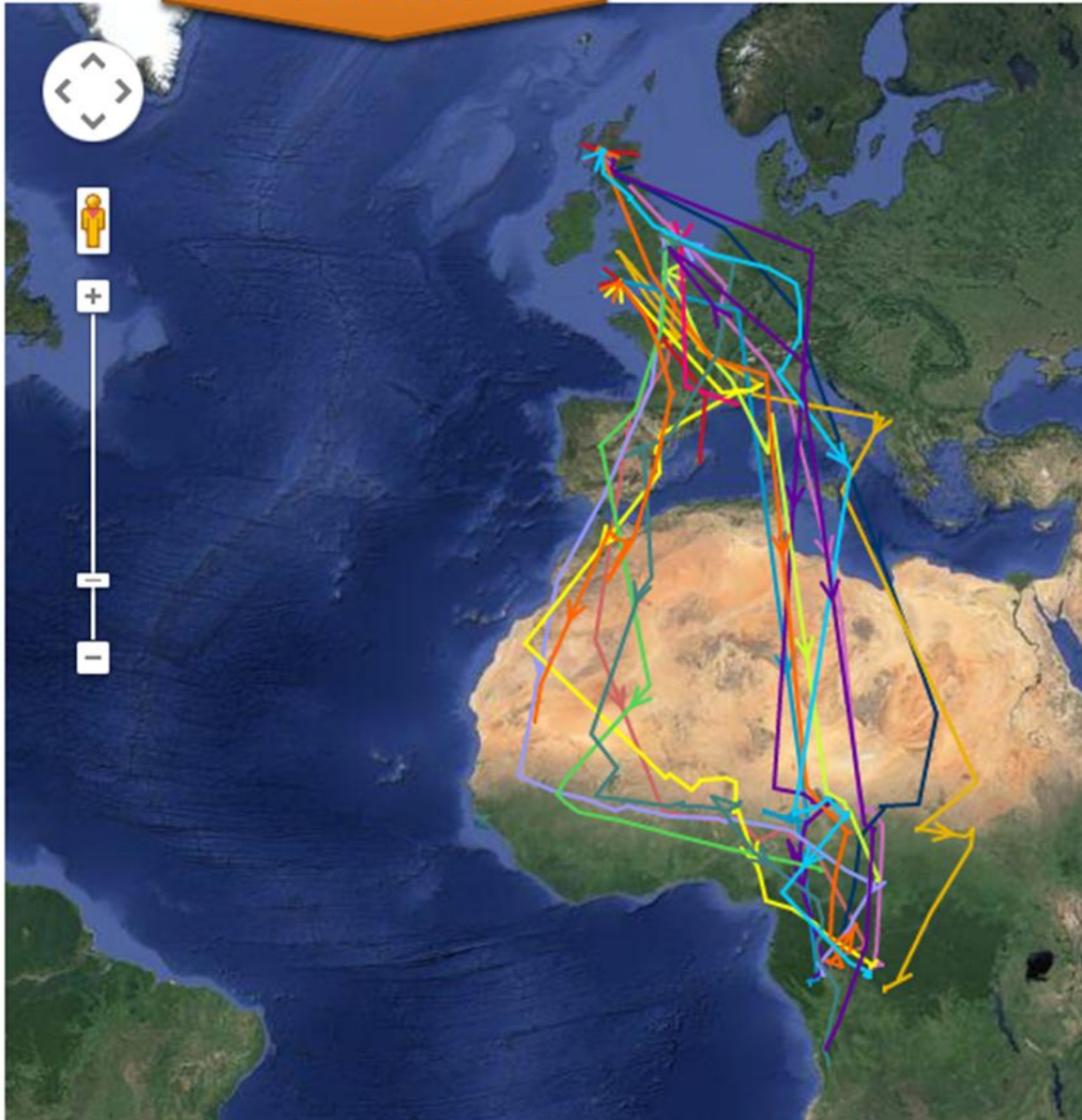
10 hours ON
48 hours OFF

Unbiased
information – no
need for recapture

Close to real-time
tracking across
entire annual cycle

Autumn migration from the UK

Cuckoo postions on
27 Dec 2013



**Autumn mortality
much higher in
birds migrating SW
through Spain**

Mortality

SW: 41%

(prevalent southern UK)

SE: 5%

(prevalent N & W UK)

**Mortality mostly
occurs in Europe**

Tracking 42 male Common Cuckoo during 56 autumn migrations 2011-14

Autumn migration routes

Western route

Eastern route



Wintering area



Locations of fatalities

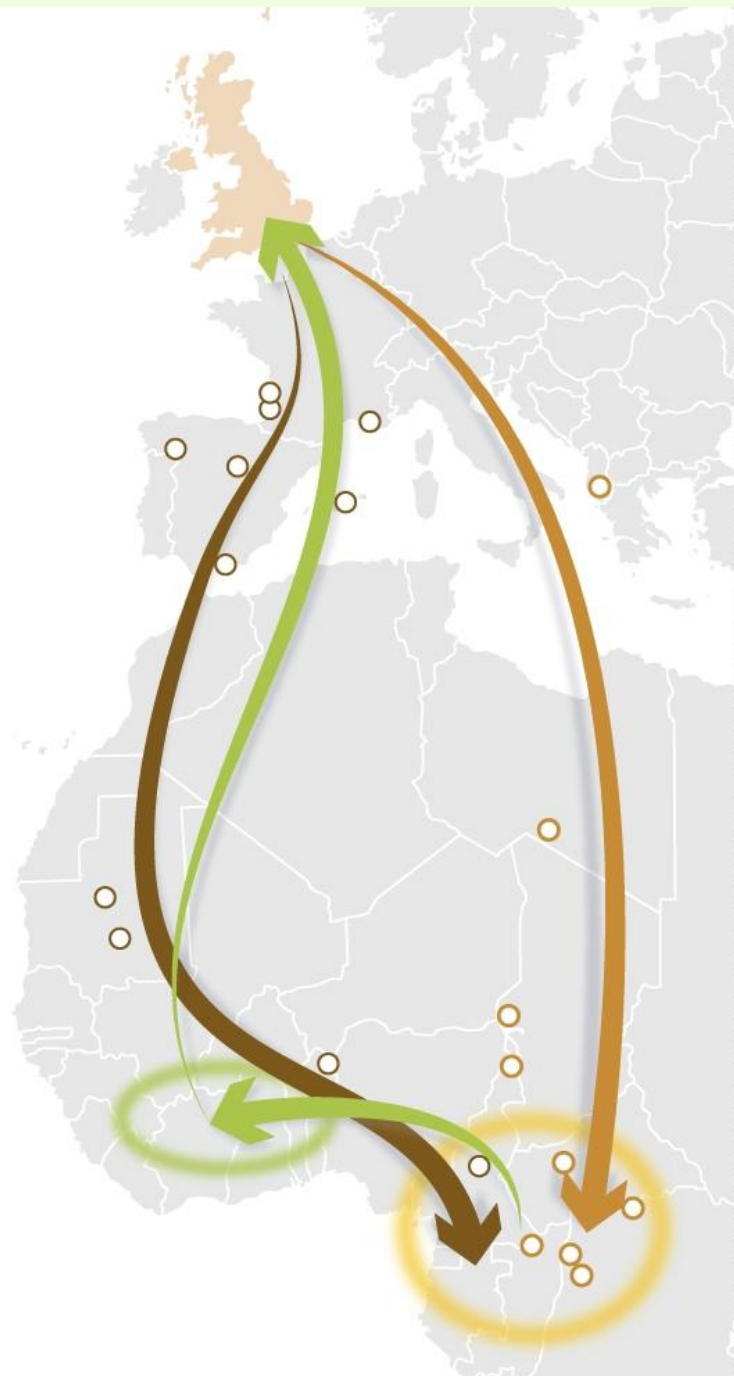
Western route Eastern route



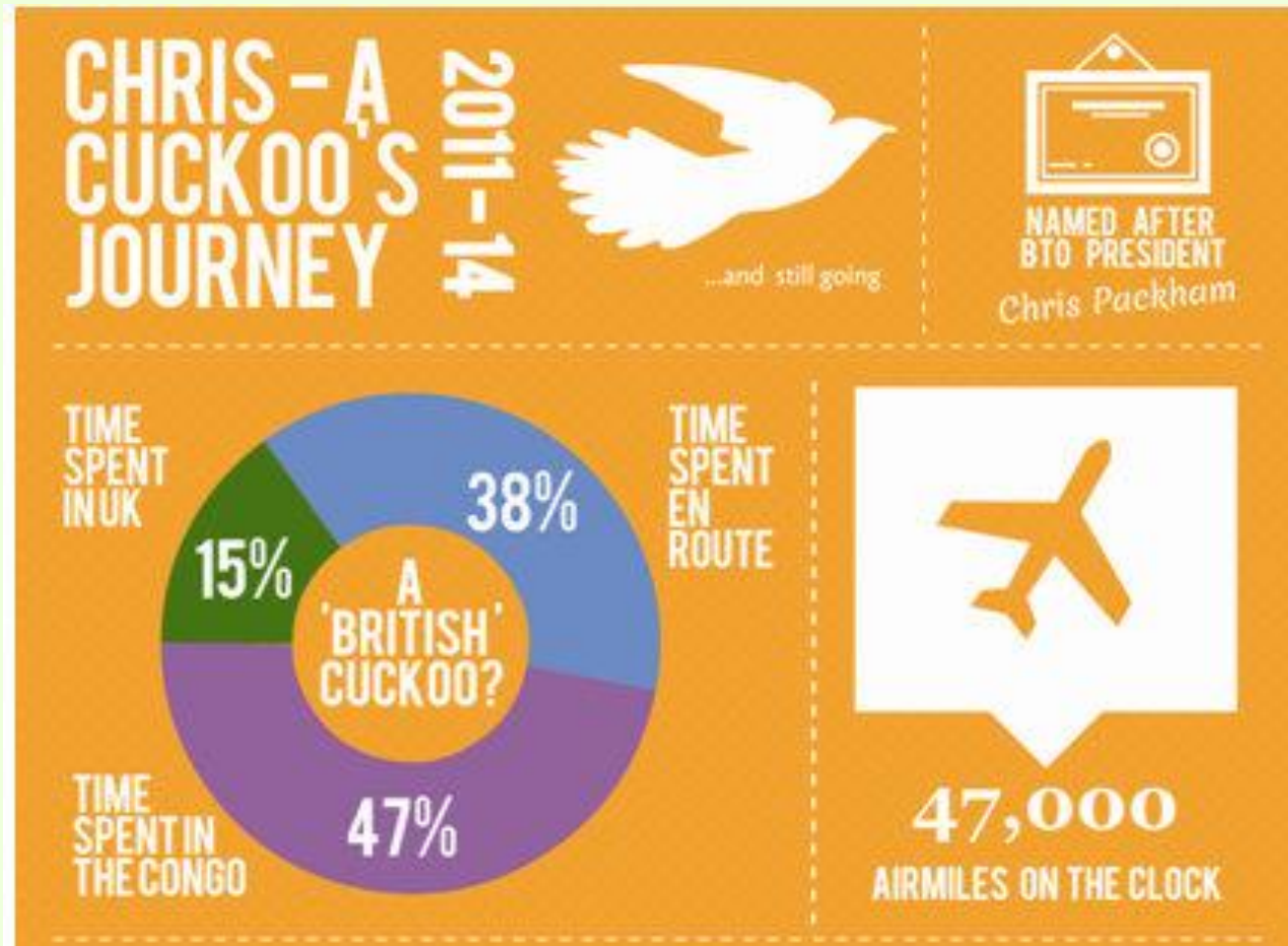
Spring migration route



Spring stopover



CHRIS - A BRITISH CUCKOO?



CHRIS

Roy Dennis Wildlife Foundation

working for wildlife

Photo: Laurie Campbell

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Satellite Tracking

>>

[Osprey](#)

[Colour Ringing](#)

[Nest Building](#)

[Fieldwork](#)

[Species Recovery](#)

[Scotland](#)

[Rutland Water](#)

[Spain](#)

[Portugal](#)

[Italy](#)

BEATRICE THE OSPREY FITTED WITH SATELLITE TRANSMITTER 2008 LOST IN BAD WEATHER 2016 REARED 16 CHICKS



se she could not catch fish in the swollen rivers

BEATRICE'S MIGRATION ROUTES



Spring (yellow) and autumn (red) migrations 2011



Spring (yellow) and autumn (red) migrations 2010



Spring (yellow) and autumn (red) migrations 2009



Autumn migration 2008

To view details of Beatrice's movements click on the relevant link: [BEATRICE 2012](#)





THE GUADIARO RIVER

OSPREY FITTED WITH SATELLITE TRANSMITTER



RE-INTRODUCTION TO SPAIN

- Re-introduction Partnership between Scotland, Finland and Germany to re-introduce Ospreys to mainland Spain
- First Ospreys released 2003
- First Ospreys bred 2005



Scottish Osprey chicks for transportation to Spain

SPECIES RECOVERY



SPOON-BILLED SANDPIPER

WWT SAVING THE SPOON-BILLED SANDPIPER



- Fewer than 200 pairs worldwide
- Only 3 chicks survive to adulthood from every 20 wild eggs
- WWT collect and incubate eggs and return to the wild
- Satellite tracking to find wintering and breeding areas
- Captive breeding programme to establish 'Ark' population.

CAR NUMBER PLATE SPLATS



RSPB BIG BUG COUNT 2004

40,000 people took part
Only one splat every 5 miles



University College London Study

(*Science*, July 2014)

- **INVERTEBRATE NUMBERS HAVE NEARLY HALVED AS HUMAN POPULATION HAS DOUBLED**
(Down 45% over 35 year period)
- **IN UK ALONE, COMMON INSECTS HAVE DECLINED BY 30-60% OVER LAST 40 YEARS**
- **HABITAT LOSS AND CLIMATE DISRUPTION VIEWED AS CAUSE**

AUTUMNWATCH DATA

- German study compared biomass of large flying insects from 1989 with 2016 – down by 75%



Marbled White



Elephant Hawkmoth

FARMLAND BIRD DECLINE

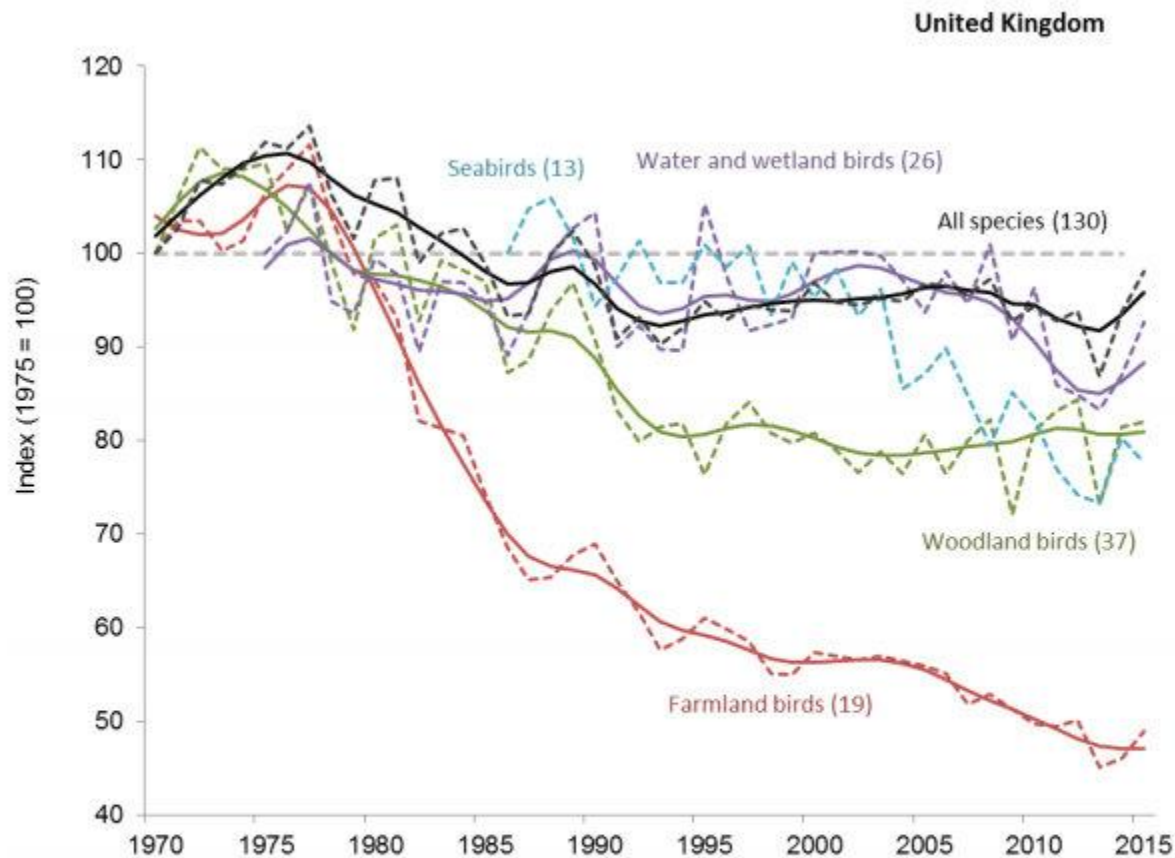


Figure 1. Populations of wild birds in the UK, by habitat, 1970 to 2015.

Source: BTO, Defra, JNCC, RSPB.

FARMLAND BIRD DECLINE

Report published May 2017 shows that:

- Breeding Farmland Bird Index in UK was less than half its 1970 level.



- Turtle Doves down 96% since 1970
- Skylarks down 62% since 1970
- Lapwings down 50% since 1970

LOSS OF FARMLAND BIRDS MIRRORS HUMAN POPULATION INCREASE

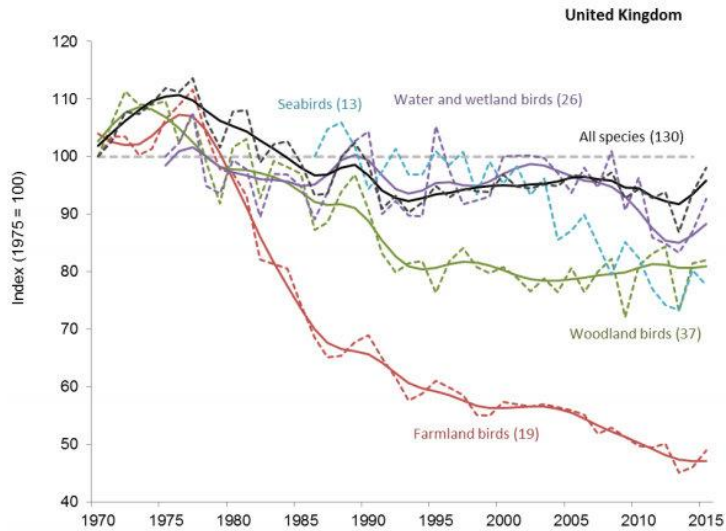
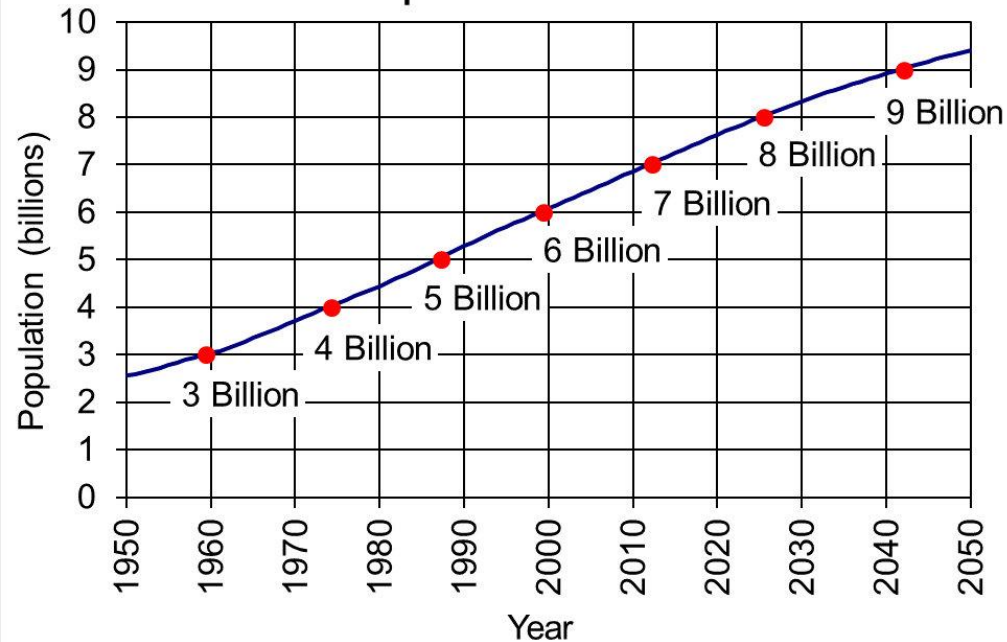


Figure 1. Populations of wild birds in the UK, by habitat, 1970 to 2015.

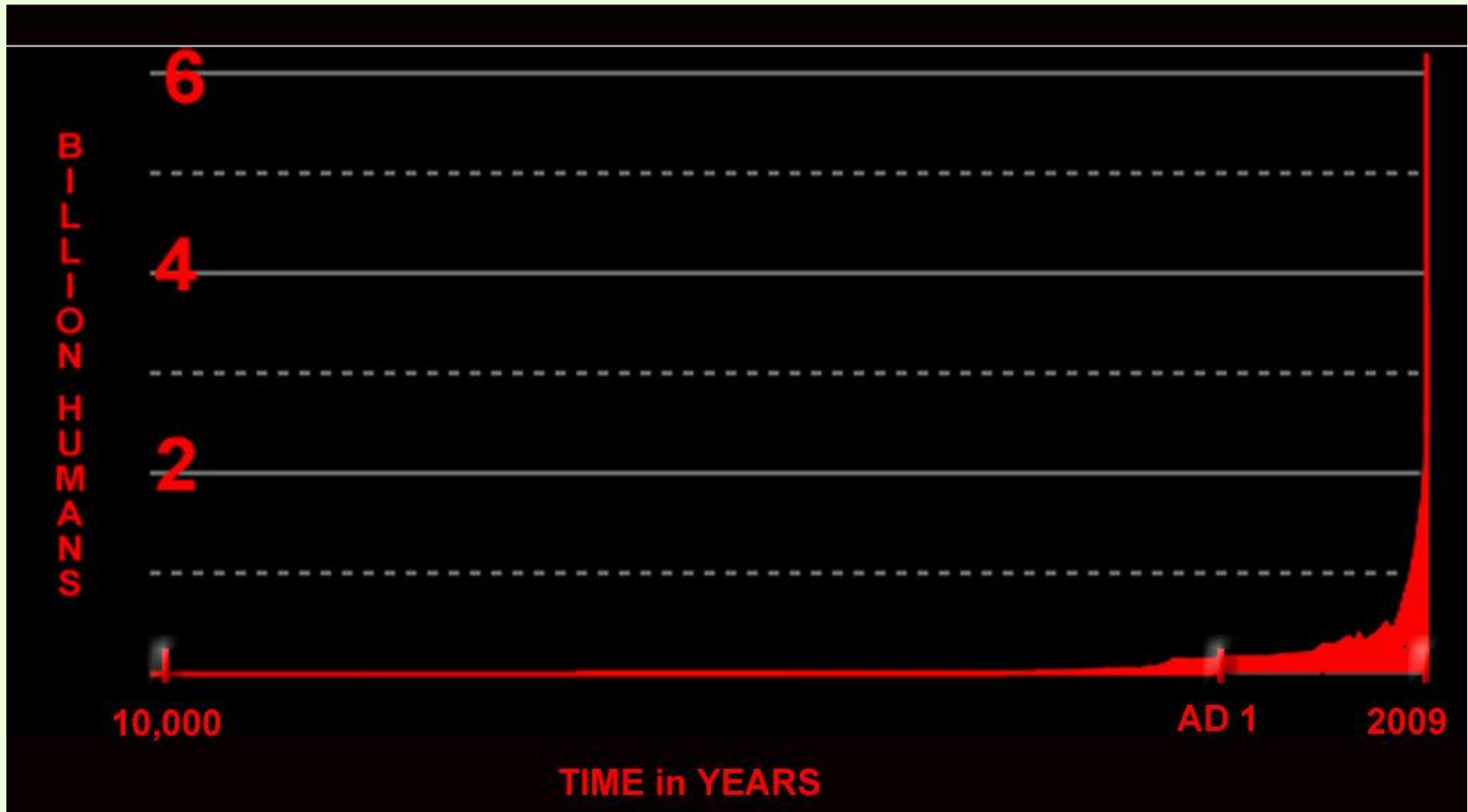
Source: BTO, Defra, JNCC, RSPB.

World Population: 1950-2050



Source: U.S. Census Bureau, International Data Base, August 2017 Update.

WORLD POPULATION SINCE LAST ICE AGE



LOSS OF ARABLE PLANTS

SHEPHERD'S NEEDLE

Scandix pecten-veneris

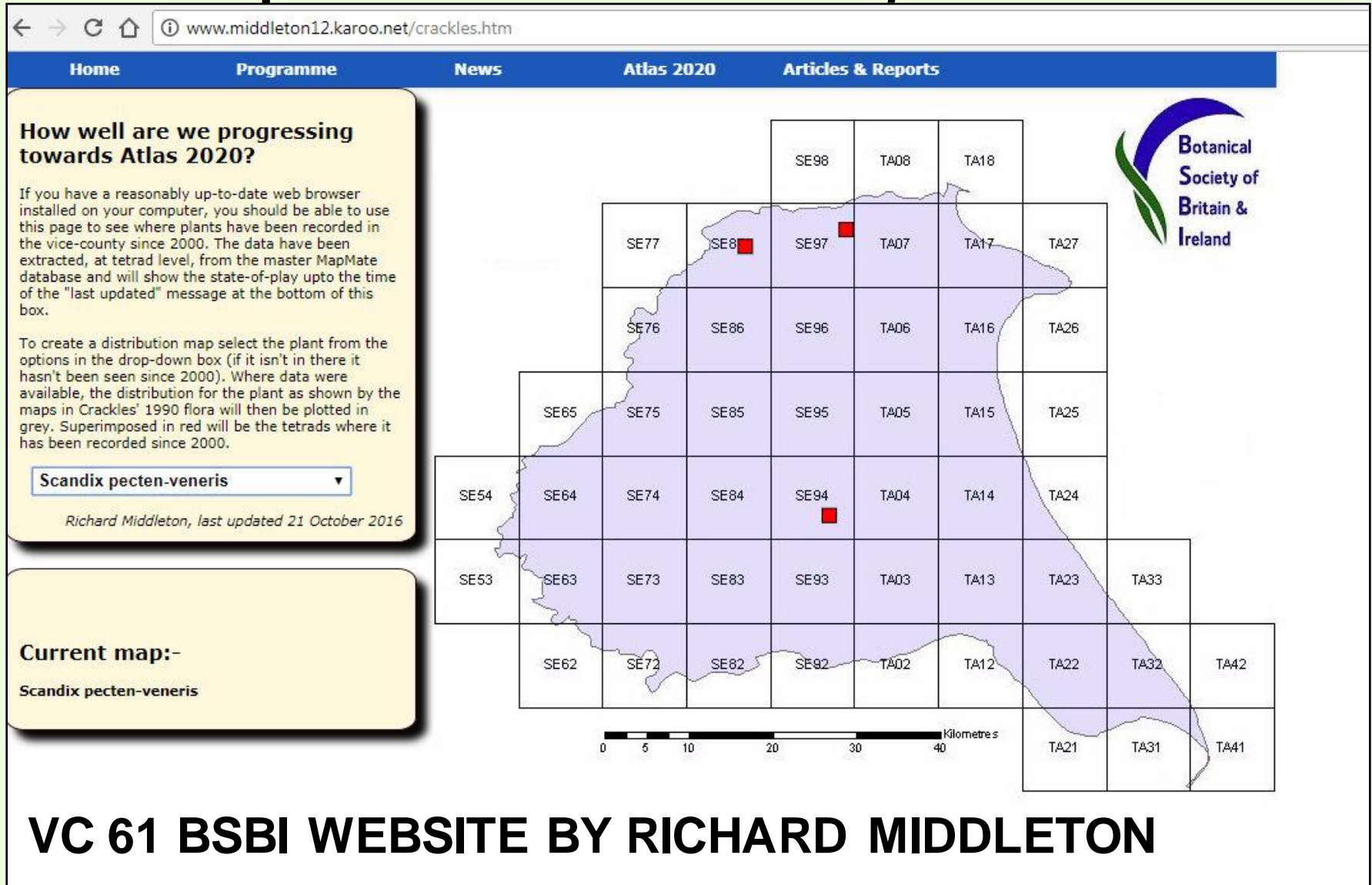
EAST RIDING: VC61

- Robinson 1902:
'In all Cornfields'
- Crackles 1990:
'Now very rare'



Current VC 61 Distribution

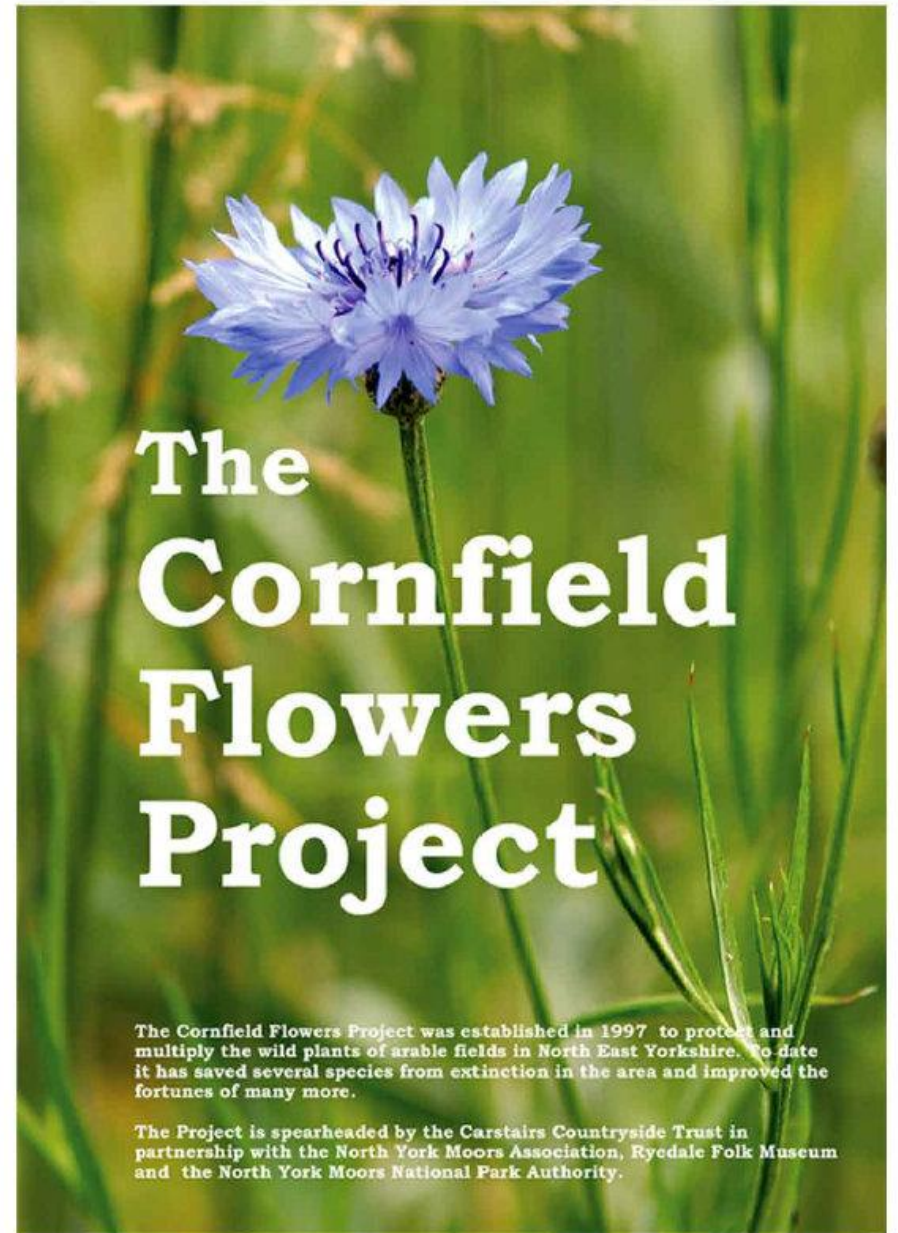
Shepherd's Needle *Scandix pecten-veneris*



NORTH YORK MOORS

CORNFIELD FLOWERS PROJECT

1997-2015



NORTH YORK MOORS CORNFIELD FLOWERS PROJECT



A formidable task

In the late 1980's, naturalist Nan Sykes wrote:

"I have been looking extensively at arable land throughout the North York Moors. The conclusion is that apart from a few common species, the arable plant flora has practically disappeared. Therefore I feel it is all the more urgent to take steps to retain the few which do remain."



- The Project aimed to:
- Safeguard the rare plants of arable fields in and close to the North York Moors by collecting seeds, growing the plants on and returning them to farmland
- Raise awareness amongst the general public of the plight of arable flowers
- Encourage farmers to use Stewardship schemes to help arable plants on their land

Cornfield Flowers Project



Species Cards



Shepherd's-needle
(*Scandix pecten-veneris*)

Critically endangered

Formerly widespread throughout UK, populations have declined dramatically since 1950s

UK Biodiversity Action Plan (UKBAP) Priority Species

Needle-like seed pods give its name (pictured)

REASONS FOR DECLINE:
Herbicides; short-lived seed

Cornfield Flowers Project



Species Cards



Corn buttercup (*Ranunculus arvensis*)

Critically endangered

Formerly widespread and locally abundant, has since declined 72% since 1950's

Viable populations on arable land are rare

A UK Biodiversity Action Plan (UKBAP) Priority Species

REASONS FOR DECLINE:

Herbicides; increased nitrogen application

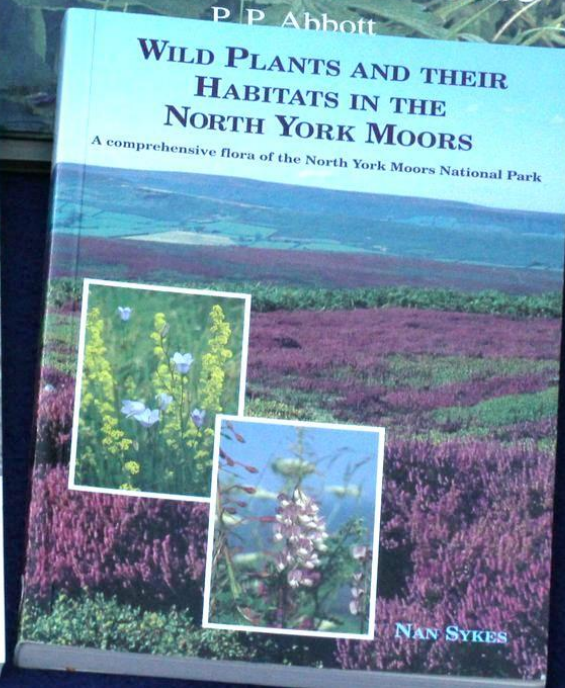
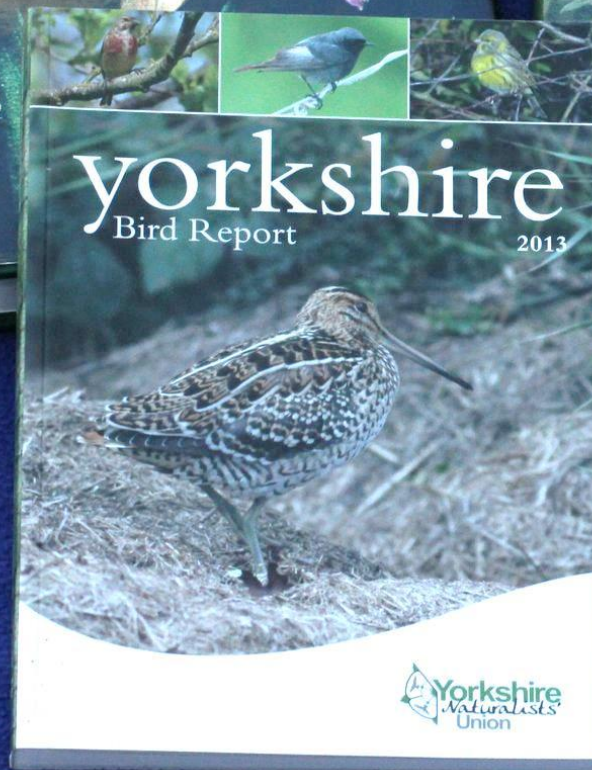
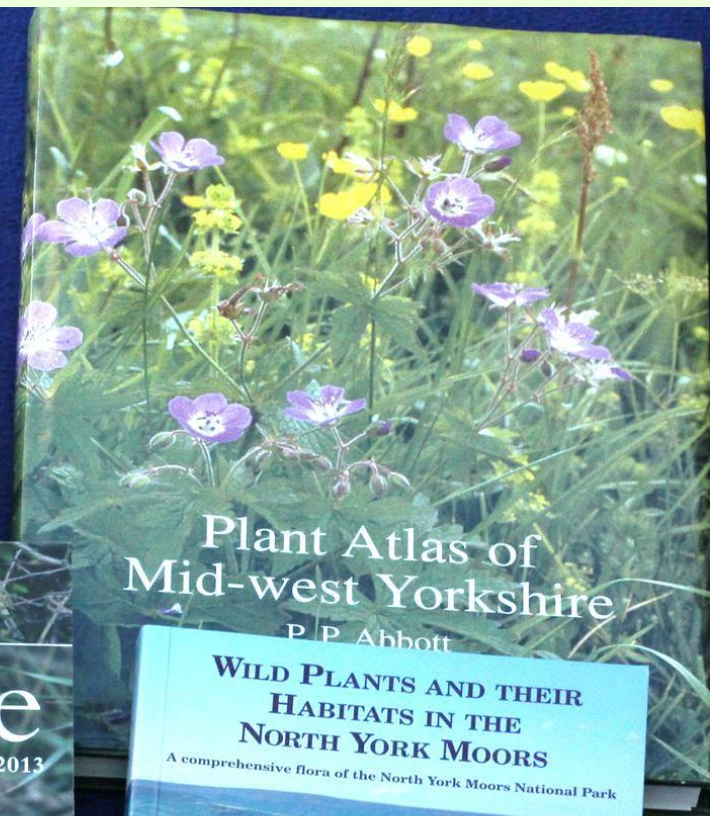
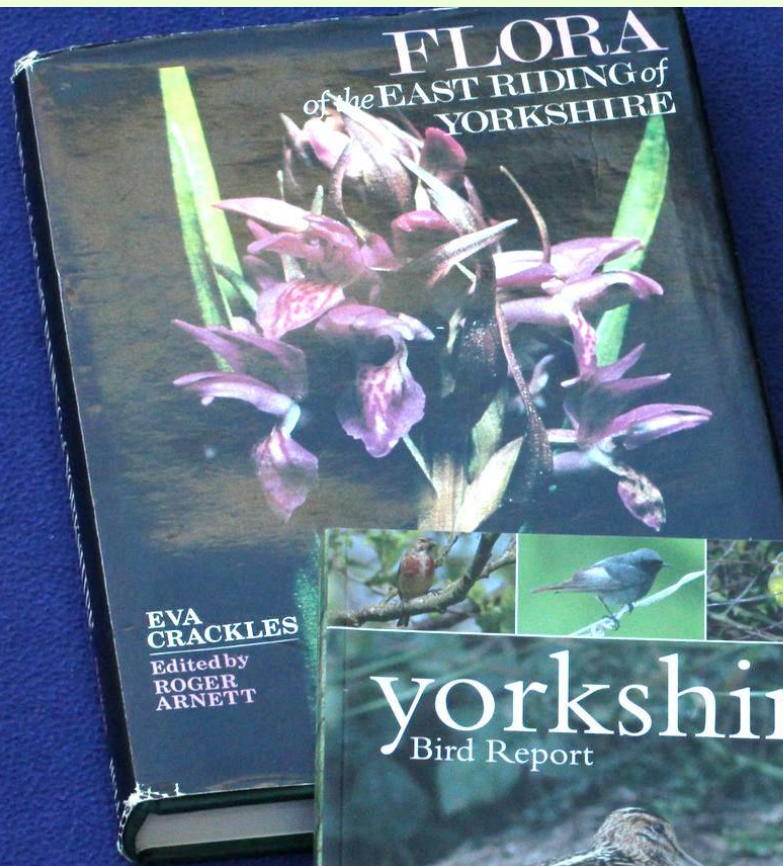
Our Corn buttercup experience...

Ranunculus arvensis is one of the arable plants that has shown the greatest decline in North East Yorkshire. In 1950, Scarborough Naturalists classed it as 'uncommon', identifying only three sites for it at Cayton Carrs, Thornton-Le-Dale and Robin Hood's Bay. Within the East Riding, it was known at Thwing and Rillington in 1970, but by 1990 the local botanist Eva Crackles described its status as 'uncommon and decreasing'.

After an apparent absence of many years, *R. arvensis* was found during Nan Sykes' survey of the North York Moors near Faceby in 1991, but has not been recorded at this site since. Nan also found it near Marton in 1999, at the beginning of the Cornfield Flowers Project. From this plant, 32 precious seeds were taken and shared between four volunteers, who succeeded in growing nine plants in 2000. Four of these plants were taken to the Ryedale Folk Museum, and the two put in the Nursery produced hundreds of seeds. From 2001 onwards it was grown in the Nursery and by increasing numbers of volunteers. The plants and seed have since been introduced to several sites and spontaneous plants are now produced at the CFP field at Silpho and at Birkdale Farm, Terrington, in good numbers every year.

CITIZEN SCIENCE





BREEDING BIRD SURVEY (BBS)



- **BTO/JNCC/RSPB**
- **MAIN SCHEME FOR MONITORING POPULATION CHANGES OF UK COMMON BREEDING BIRDS**
- **CARRIED OUT BY VOLUNTEERS**



BTO BREEDING BIRD SURVEY: NUMBER OF SURVEYS COMPLETED BY VOLUNTEERS

Region	2016
UK	3836
England	2864
Scotland	488
Wales	333
Northern Ireland	126

RSPB BIG GARDEN BIRDWATCH



giving
nature
a home

BIG Garden Birdwatch



We've been sifting through around half a million people's Big Garden Birdwatch sightings – a total of more than 8 million birds. Finally, the results are in.

RSPB BIG GARDEN BIRDWATCH

Half a million contributors

8 million records.

2017 Total birds counted		Country	Species	2017 Mean	2017 Rank	2017 % gardens
England	6,866,098	England	House sparrow	4.1	1	66.0
Northern	127,078	England	Starling	3.0	2	48.0
Scotland	626,184	England	Blackbird	2.9	3	93.2
Wales	455,606	England	Blue tit	2.4	4	80.1
		England	Woodpigeon	2.4	5	81.4
		England	Goldfinch	1.6	6	34.7
		England	Robin	1.6	7	88.6
		England	Great tit	1.4	8	58.6
		England	Long-tailed tit	1.2	9	31.2

Atlas 2020



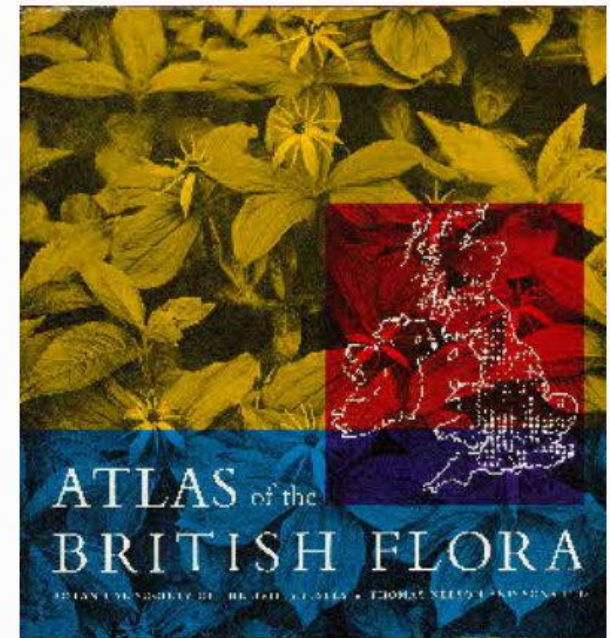
The first atlas of the British and Irish flora, published in 1962, pioneered the use of 'dot-maps' aligned to the OS grid. Read about the influence that it had in [this paper](#) published in *New Journal of Botany*.

A [repeat atlas](#) was published in 2002 based on fieldwork carried out from 1987-1999.

BSBI is now producing a third atlas, Atlas 2020, which will be published after fieldwork has been completed in 2019.

Atlas 2020 will provide:

- Maps for both native and introduced taxa
- Interactive maps able to display frequency and distribution at a variety of scales
- Analyses of changes, summarising the state of the British and Irish flora in 2020.



STRONG VOLUNTARY CONSERVATION MOVEMENT GIVES WILDLIFE A VOICE

- **Wildlife Trusts 800,000 members**
- **RSPB 1.2 million members**
- **National Trust 4.5 million members**

PUBLIC ENGAGEMENT WITH WILDLIFE

The screenshot shows the BBC Two Springwatch website. At the top is the BBC logo and navigation links: 'Your account', 'Home', 'News', 'Sport', 'Weather', 'iPlayer', 'TV', 'Radio', 'CBBC', 'More', and a search bar. Below this is a large banner for 'Springwatch' featuring four hosts in a field. A navigation bar includes 'Home', 'Episodes', 'Clips', 'Galleries', 'Unsprung', 'Useful links', 'Blog', and 'FAQ'. A green box states 'The best of the UK's wildlife, live on TV and online'. To the right, 'On iPlayer' is marked 'Not available' and 'On TV' shows 'No upcoming broadcasts'. Social media links for Facebook, Twitter, and Instagram are provided. The main content area features a large image of a woodlouse with the credit 'Chris Blake', a map of the UK titled 'Map reveals surprising number of names for a very common garden species' listing various regional names like 'Dampers', 'Slatey Beetles', and 'Billy Buttons', a section titled '7 nature stories you need to know about' with three small images, and a link 'Find out more about our home'. At the bottom, there are four smaller image thumbnails, including one with the text 'S.O.S'.

BBC Your account Home News Sport Weather iPlayer TV Radio CBBC More Search

TWO Springwatch

Home Episodes Clips Galleries Unsprung Useful links Blog FAQ

The best of the UK's wildlife, live on TV and online

On iPlayer Not available

On TV No upcoming broadcasts

Find us at f t i

Chris Blake

Map reveals surprising number of names for a very common garden species

7 nature stories you need to know about

Find out more about our home

S.O.S

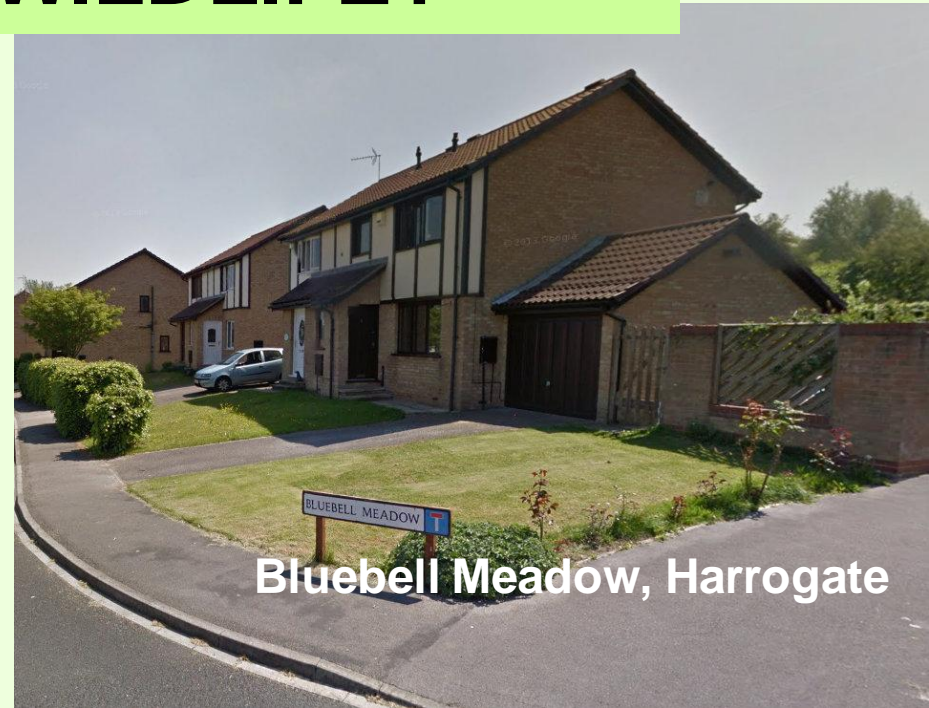
PUBLIC ENGAGEMENT WITH WILDLIFE

- **COUNTRYFILE 4.7 MILLION VIEWERS**
- **SPRINGWATCH 2.4 MILLION VIEWERS**

(June 2014 data)

- **BLUE PLANET II**
10.6 MILLION VIEWERS
– more than Strictly Come Dancing!

VIRTUAL WILDLIFE?



REWILDING: LARGE-SCALE CONSERVATION AIMED AT RESTORING AND PROTECTING NATURAL PROCESSES AND CORE WILDERNESS AREAS.

Creag Meagaidh

**Large-scale regeneration in Scotland proves that
reducing deer numbers can produce spectacular results**



**National Nature
Reserve of
4,000 hectares.
Grazing reduced
30 years ago
to allow natural
regeneration of
trees**

REWILDING

South House Moor Ingleborough

**Taken Mid-1980s
Still Grazed**



17 Years After Grazing Removed

Managed Realignment: Alkborough Flats



BEFORE

AFTER

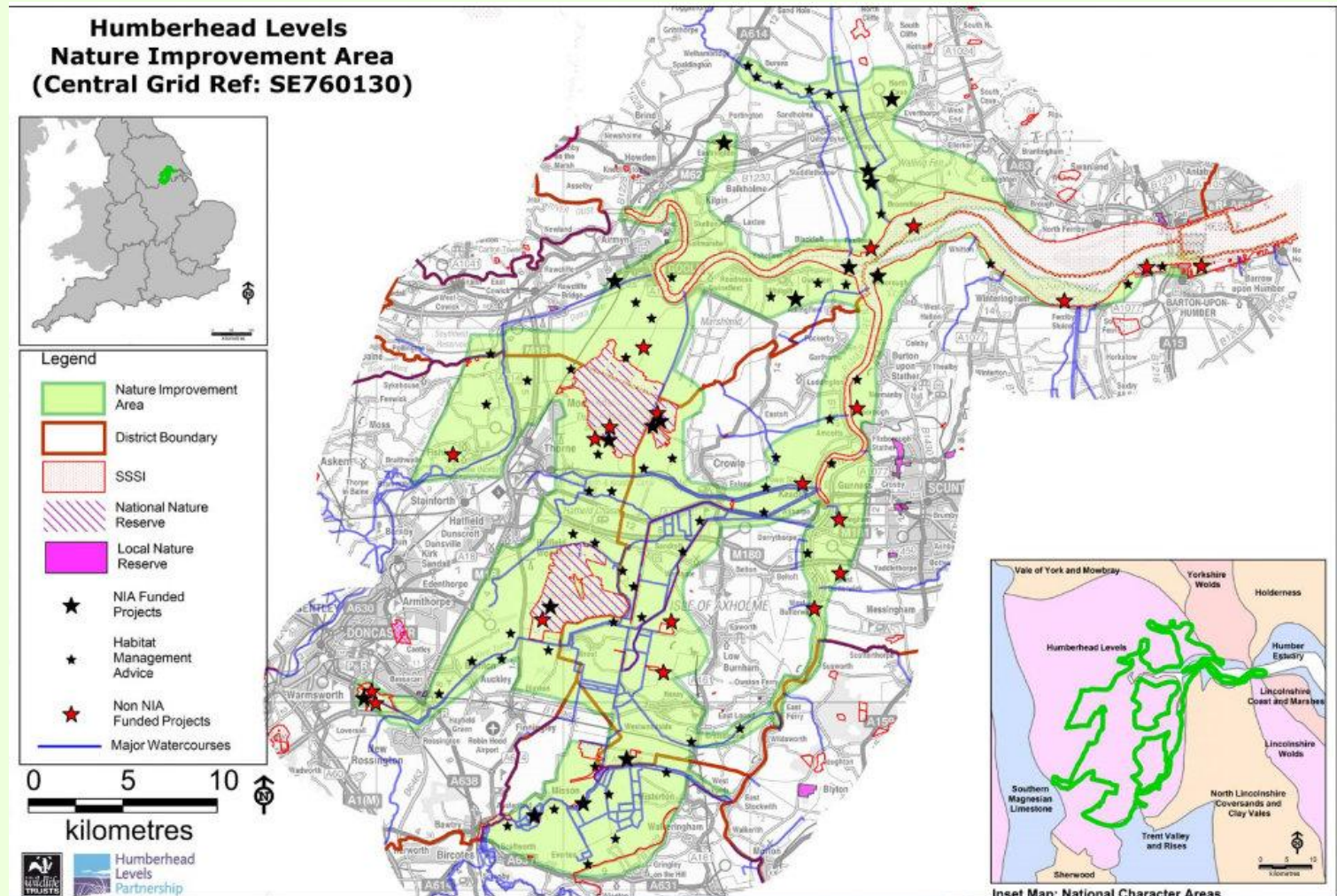


- **440 hectares of intensively managed agricultural land flooded**
- **Largest managed realignment in Europe**

Humberhead Levels Partnership

A landscape scale approach

12 organisations working together for sustainable land management



WALLASEA ISLAND WILD COAST PROJECT

[About the RSPB](#) [Our work](#) [Birds & wildlife](#) [Get involved](#) [Reserves & events](#) [Fun & Learning](#) [Shop](#) [Join & Donate](#)



- **NEW RSPB RESERVE IN ESSEX**
- **USING 3 MILLION TONNES OF MATERIAL EXCAVATED FROM THE CROSSRAIL PROJECT**
- **WILL TRANSFORM 670 HA OF FARMLAND BACK INTO COASTAL MARSHLAND**

CHOLDERTON ESTATE

SUSTAINABLE AGRICULTURE IN PRACTICE

[Home](#) [Contact](#)



- **1000 hectare estate in Wiltshire**
- **Managed to balance farming and wildlife for last 30 years**
- **High value wildlife areas protected**
- **Large blocks allowed to revert to chalk grassland**



Fumaria officinalis



Papaver hybridum

CHOLDERTON ESTATE

SUSTAINABLE AGRICULTURE IN PRACTICE

[Home](#) [Contact](#)



Venus's-looking-glass
Legousia hybrida



What does rewilding look like?

Rewilding produces landscapes with an abundance of plant and wildlife providing opportunities for people to thrive socially and economically



2015

1999



**CARRIFRAN
SCOTTISH
BORDERS
1600 acres
BOUGHT BY PUBLIC
SUBSCRIPTION
MILLENNIUM DAY**

MAR LODGE ESTATE BRITAIN'S LARGEST NNR 29,300 HECTARES



- **HOME TO GOLDEN EAGLE, CAPERCAILLIE, DOTTEREL, SNOW BUNTING AND PINE MARTIN**
- **DEER GRAZING REDUCED 15 YEARS AGO & 200 HA OF PINE WOODLAND REGENERATING**
- **WILL LINK WITH ABERNETHY AND GLENFESHIE**



MORE



MORE
BIGGER



MORE
BIGGER
BETTER



MORE
BIGGER
BETTER
JOINED UP





MORE
BIGGER
BETTER
JOINED UP

MAKING SPACE FOR NATURE
Prof Sir John Lawton 2010