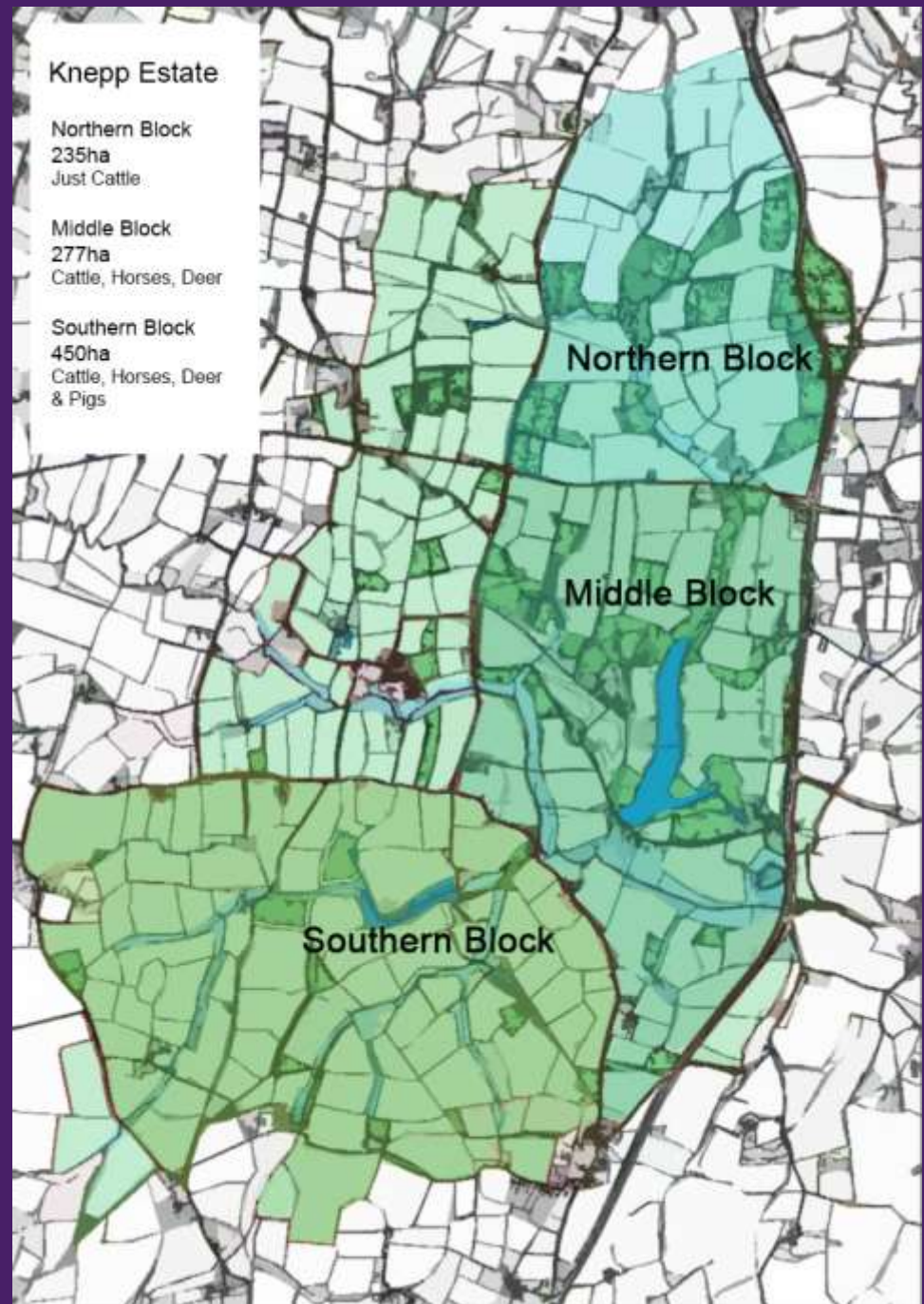


# Rewilding Knepp



# KNEPP ESTATE

1,400 ha



**DIG FOR VICTORY: 1941, when these pictures were taken, Knepp's land had mostly reverted to scrub**





Fine Wheat Crop. Duke of Gloucester reviews Canadian 3<sup>rd</sup> Div. 1943

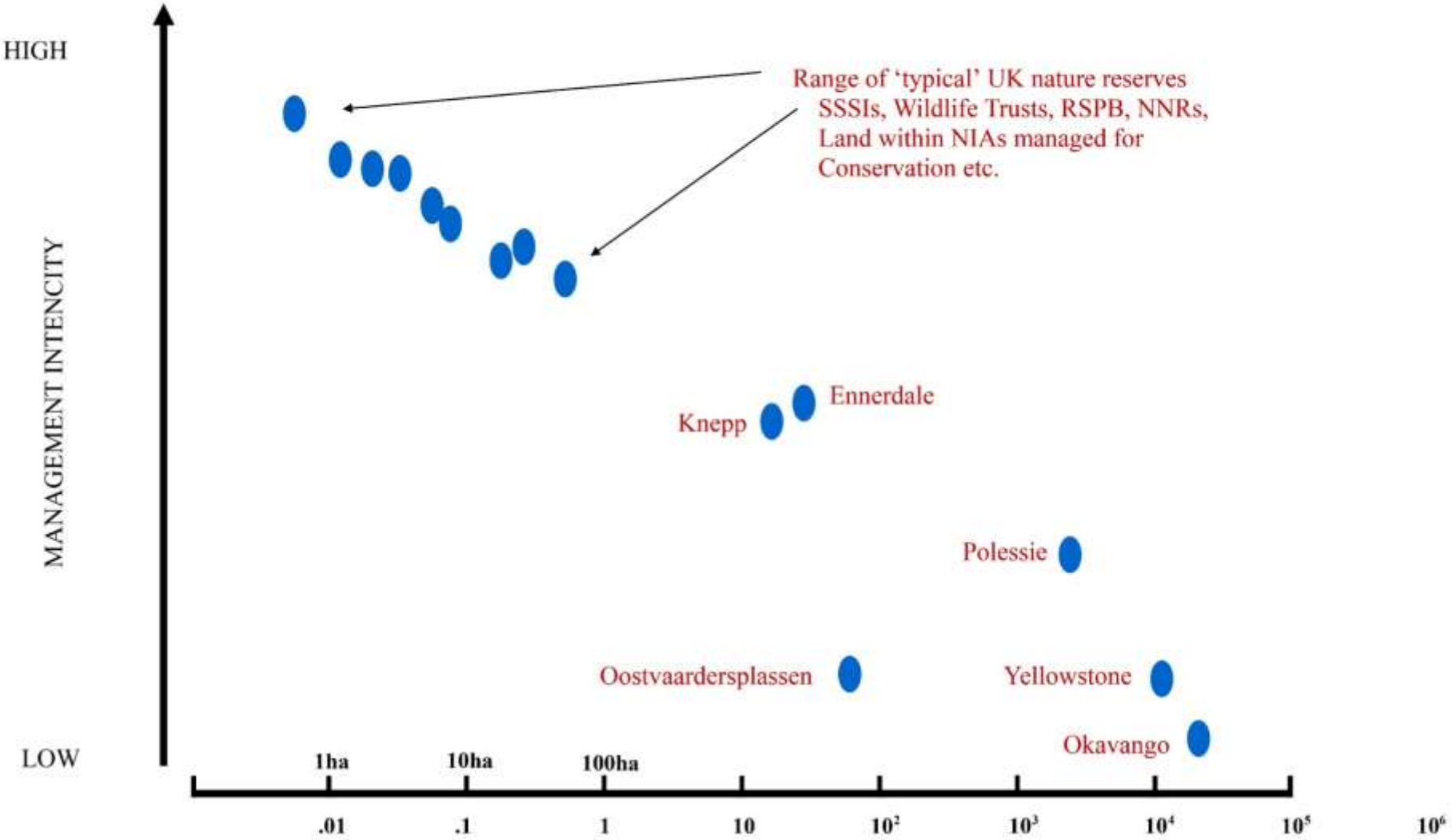




# KNEPP'S DRIVERS



# “Cartoon” spectrum of protected areas scaled by size and by qualitative indication of management intensity



# OUR GREEN AND PLEASANT LAND

Soil has been destroyed  
Now dirt requiring chemicals  
60 years of harvests left globally

Towns not linked to nature  
Intensively farmed land right  
up to towns & villages

Hedges cut to nearly nothing  
little use for nature

Roads fragmenting nature

Animals routinely wormed,  
killing invertebrates and  
soil biota

Where is the space for nature in this landscape?

Crop monocultures –  
even pasture might  
have only 2 or 3 species  
of grass, and no  
broadleaves

Single species plantations  
Small, isolated and fragmented

Canalised rivers  
carrying nitrates and pesticides



# **the UK is ranked 29<sup>th</sup> lowest out of 218 countries using the 'biodiversity intactness index': we are among the most nature-depleted countries in the world**

- we lost 75,000 miles of hedgerows between WW2 and the 1990s
- we've lost 97% of our wildflower meadows since WW2
- we lost 90% of wetlands, in England alone, since the Industrial Revolution
- we've lost 80% of Britain's lowland heathland since 1800 – ¼ of that acreage in the last 50 years
- compared to 2.75million ha in France, England has only 94,400 ha (364 square miles) conserved for nature (even Estonia manages over 258,000 ha)
- there were 40 million more birds in our skies in the UK in 1966
- moths have declined 88%, ground beetles 72% and butterflies 76% since 1970
- one plant species goes extinct every other year in 16 counties in the UK
- more than half our species declined in numbers between 2002-2013
- we are in imminent danger of losing 10-15% of our species overall

# OUR GREEN AND PLEASANT LAND



# Rewilding



# Corridors







# Green bridges

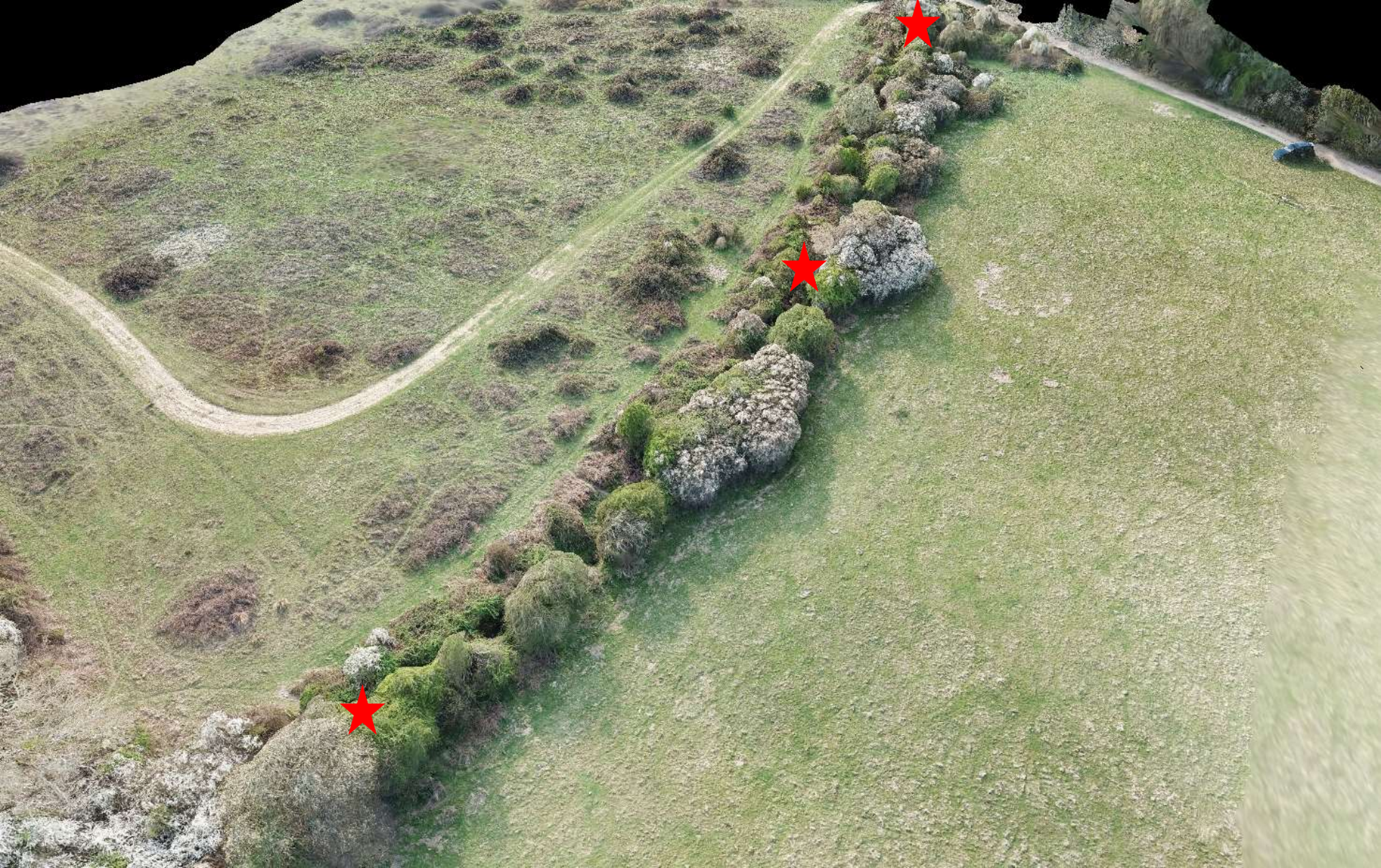






Cutting hedges in longer rotations  
Allow them to billow out  
Greater widths





3 nightingale territories in this 170 meter hedge



Farming for nature – nectar margins, sacrificial crops, bare earth strips for bird dusting, reservoirs for insects that are beneficial to crop management....



## PROCEEDINGS B

rspb.royalsocietypublishing.org

Research



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<http://dx.doi.org/10.1098/rspb.2015.1740>

Received: 20 July 2015

Accepted: 3 September 2015

# Wildlife-friendly farming increases crop yield: evidence for ecological intensification

Richard F. Pywell<sup>1</sup>, Matthew S. Heard<sup>1</sup>, Ben A. Woodcock<sup>1</sup>, Shelley Hinsley<sup>1</sup>, Lucy Ridding<sup>1</sup>, Marek Nowakowski<sup>2</sup> and James M. Bullock<sup>1</sup>

<sup>1</sup>NERC Centre for Ecology and Hydrology, Wallingford OX10 8BB, UK  
<sup>2</sup>Wildlife Farming Company, Bicester OX26 1UN, UK

Ecological intensification has been promoted as a means to achieve environmentally sustainable increases in crop yields by enhancing ecosystem functions that regulate and support production. There is, however, little direct evidence of yield benefits from ecological intensification on commercial farms growing globally important foodstuffs (grains, oilseeds and pulses). We replicated two treatments removing 3 or 8% of land at the field edge from production to create wildlife habitat in 50–60 ha patches over a 900 ha commercial arable farm in central England, and compared these to a business as usual control (no land removed). In the control fields, crop yields were reduced by as much as 38% at the field edge. Habitat

“...yields at the field scale were maintained—and, indeed, enhanced for some crops—despite the loss of cropland for habitat creation.”

8/6/2018  
2001 2018



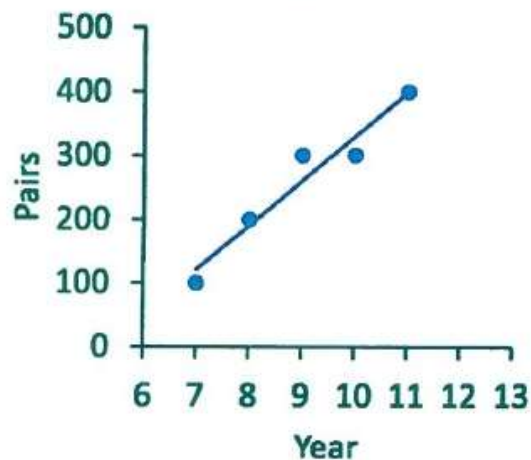
Google Earth

Imagery Date: 8/6/2018 50°52'57.69" N 0°30'31.63" W elev. 0 m eye alt. 3.20 km

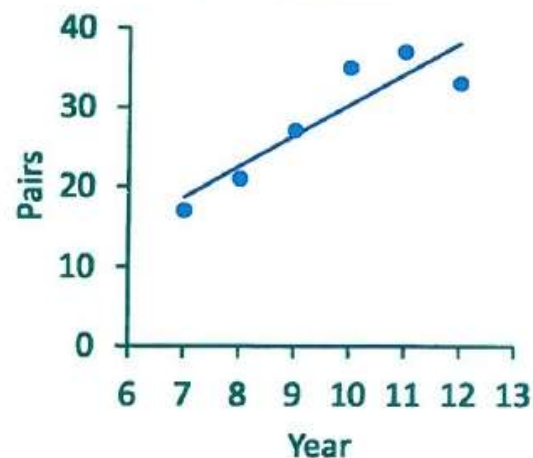
2001

# At Peppering other **Red Listed** birds have also recovered dramatically.

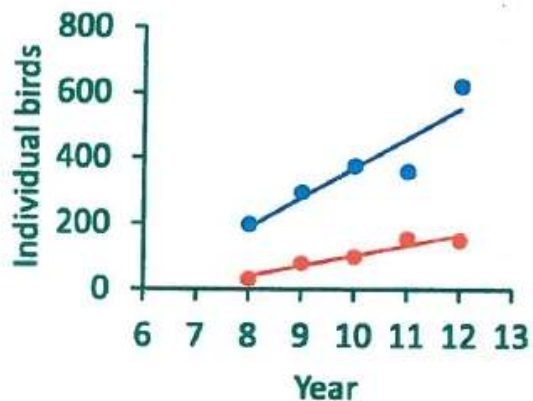
### Skylark pairs



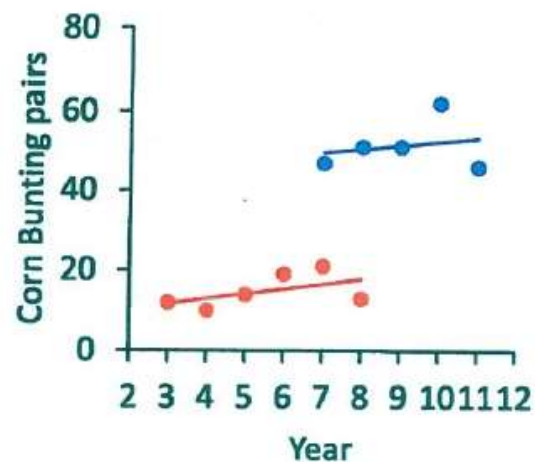
### Lapwing pairs



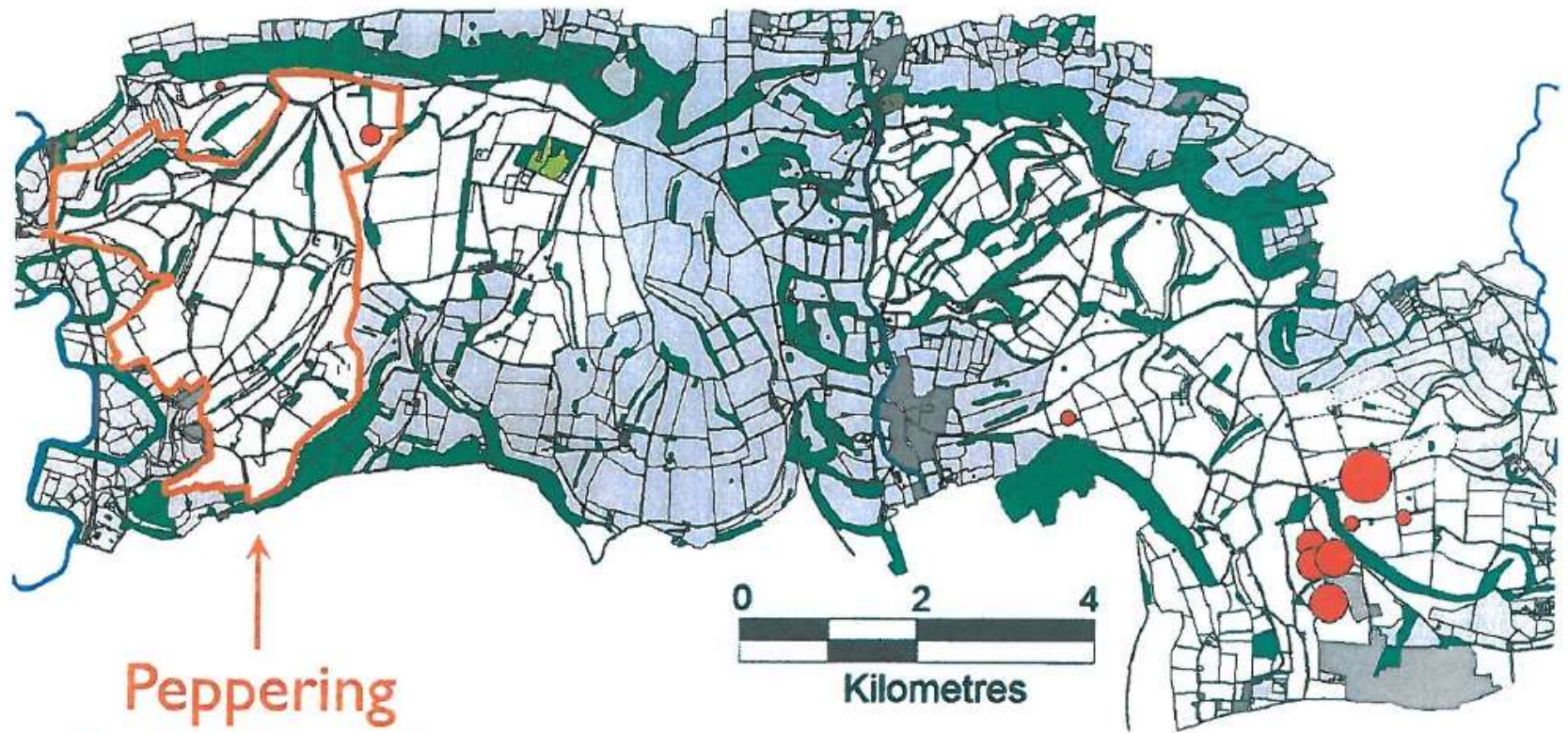
### Winter Linnets (Blue) Yellowhammer (Red)



### Corn Bunting Pairs

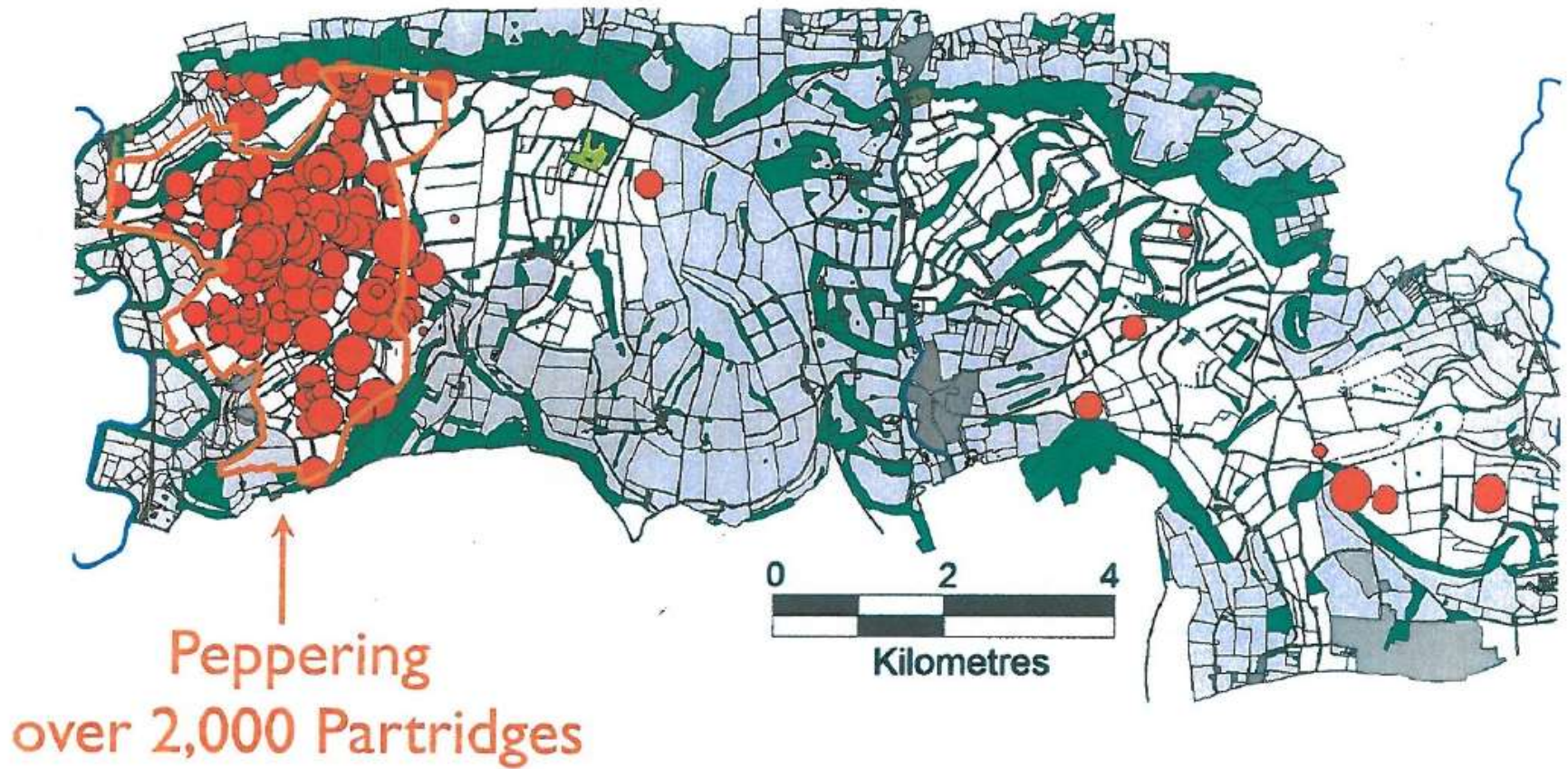


## Autumn counts 2003



Peppering  
only 11 Partridges

## Autumn counts 2014



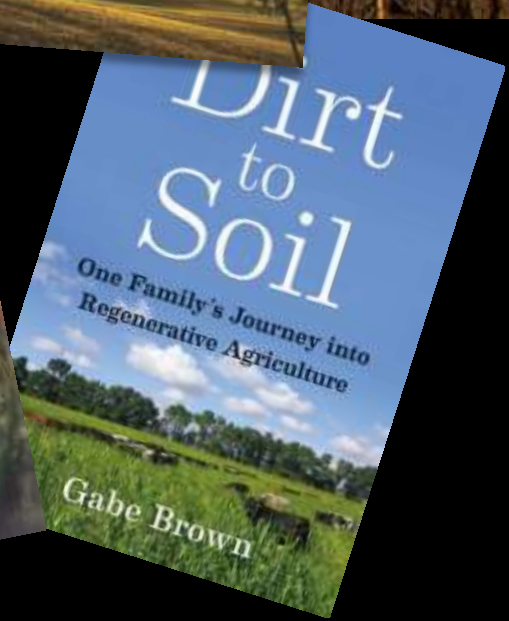
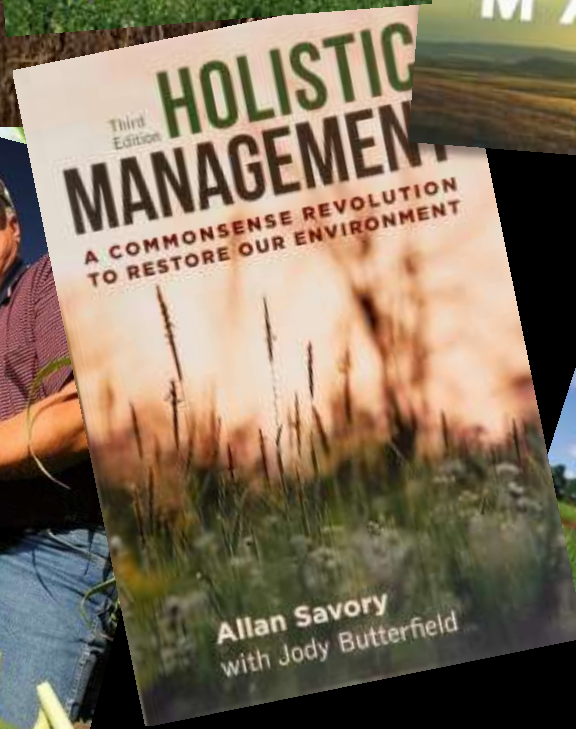
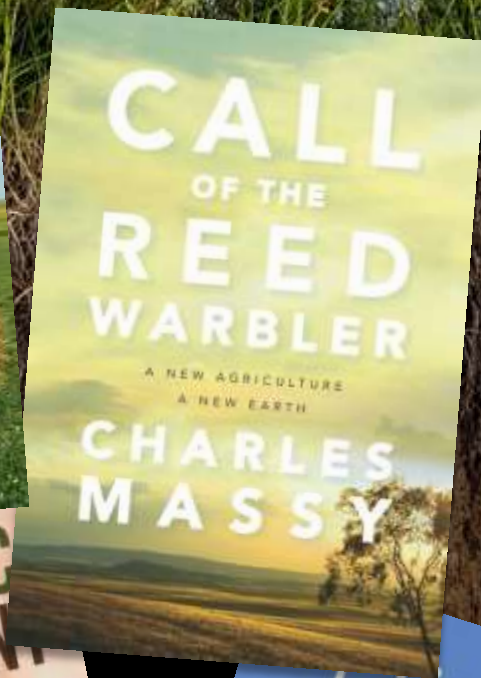
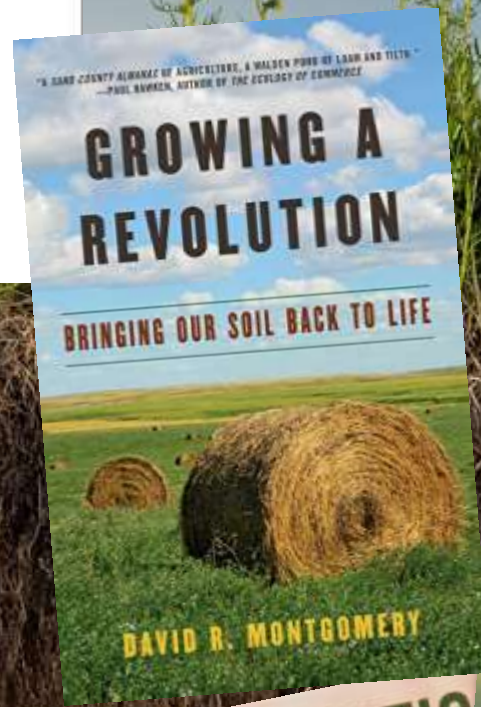


# Regenerative farming, Conservation Farming....





# Groundswell





Wood pasture – one of the most diverse habitats there is







Beavers and braided rivers – re-meandering rivers, freeing up river systems, retaining water on floodplains – soil, trees and grassland acting like a sponge





Google Earth

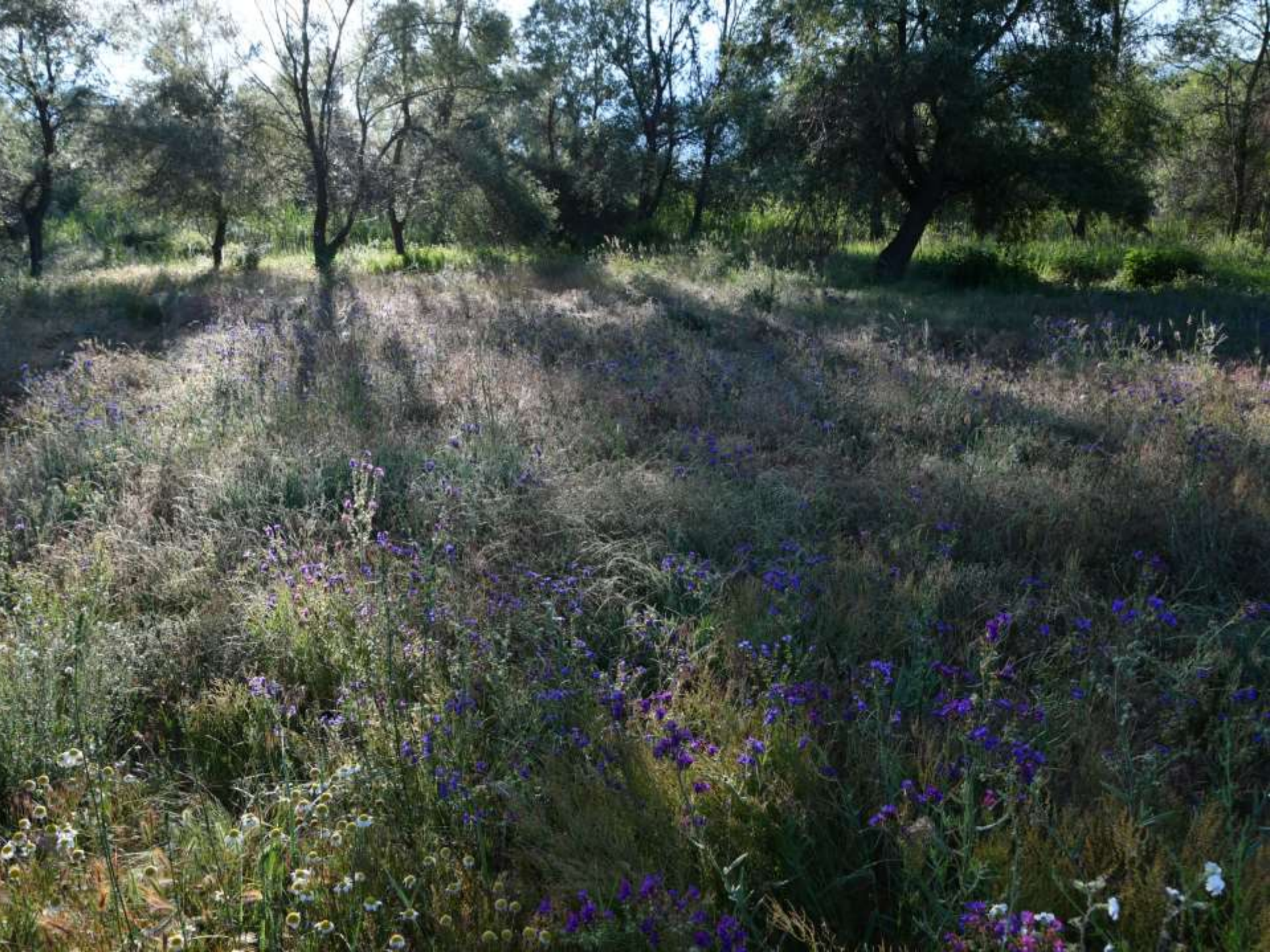
Imagery Date: 8/6/2018 50°58'41.15" N 0°21'23.85" W elev: 0 m eye alt: 1.67 km

© 2004



# Floodplain water meadows and wildflower hay meadows







# Multi-species plantations



# PuRpOsE

(PRotect Oak Ecosystems)

In the UK, *Quercus robur* and *Q. petraea* are under threat from new diseases including Acute Oak Decline (AOD)

1/5 of oaks could be dead by 2050



# OUR GREEN AND PLEASANT LAND







Tony Davis has been ringing birds for 30 years – over a couple of weeks in Sept 2018 he ringed more lesser whitethroats (*Sylvia curruca*) and black caps (*Sylvia atricapilla*) in two fields on Knepp than he has ringed in his entire career



## Does Rewilding restore soil biodiversity and function

Laura Koester genannt Kurwald (MSc Environmental Engineering thesis)  
Dr Mark Pawlett (Supervisor)  
Prof Jim Harris (Supervisor)

[www.cranfield.ac.uk](http://www.cranfield.ac.uk)



# *Knepp's* **SOIL** *compared to arable control*

Total soil carbon	–	more than double
Organic carbon	–	more than double
Soil organic matter	–	more than double
Microbial biomass	–	more than double
Fungal biomarkers	–	more than triple
Fungal/bacterial ratio	–	recovered

## Pop-up Knepps?

MONEY



# Rewilding Knepp turnover 2019 - a **partial budget** on the Home Farm

£191 / ha  
Environmental  
Stewardship  
£220k (13%)

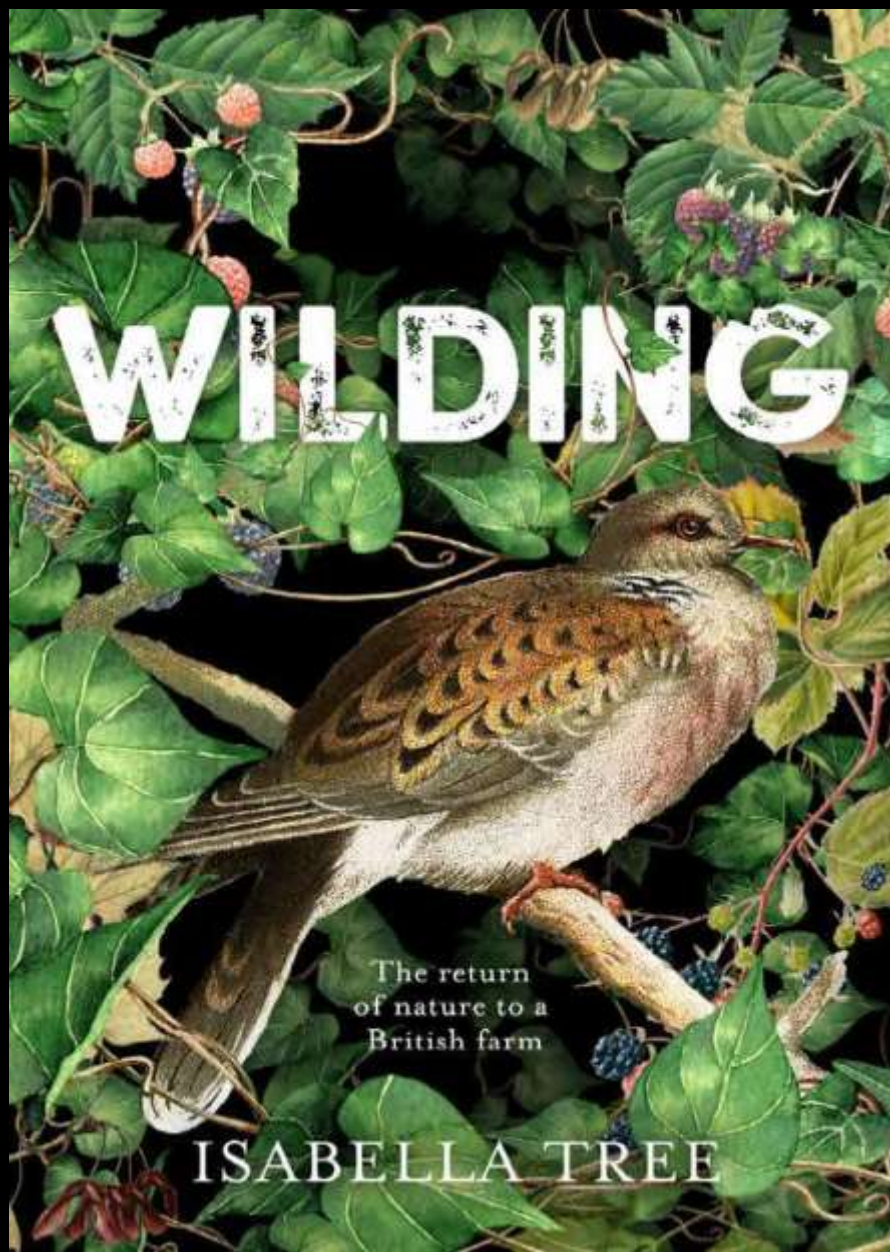
£205 / ha  
Basic Payment  
rpa  
rural payments agency  
£202k (12%)

123,000 sq ft  
Office, Workshop  
Warehouse  
200 full time jobs  
£620k (36%)

7 houses  
released  
from Ag  
£120k (7%)

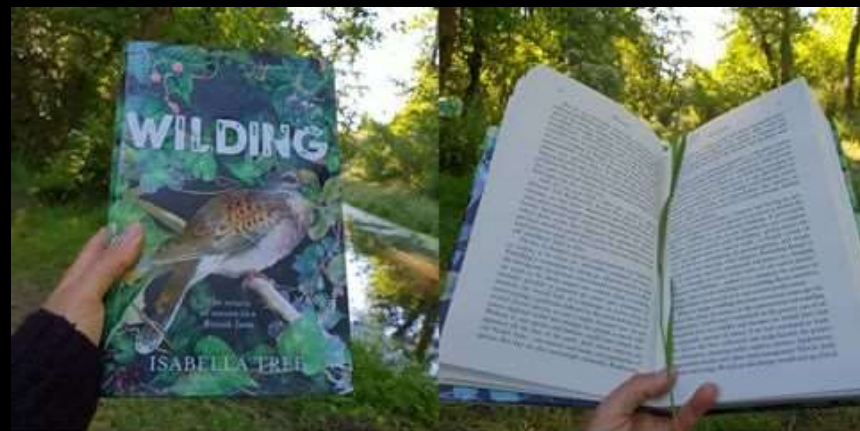
75 tonnes LW  
organic  
free range  
Pasture fed  
£120k (7%)

Tourism  
Camping and  
glamping  
2500 campers – 3000 safari  
£450k (26%)



# WILDING

## The Story of Knepp By Isabella Tree



What would the world be, once bereft  
Of wet and wildness? Let them be left,  
O let them be left, wildness and wet;  
Long live the weeds and the wilderness yet.

Gerard Manley Hopkins, 'Inversnaid', 1881