



# CBDC Projects - Overview

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DR MOUSTAFA EWEDA  
CBDC GIS AND DATA MANAGER



# Cumbria Bumblebee Atlas

## Collating Bumblebee Records:

CBDC

BWARS

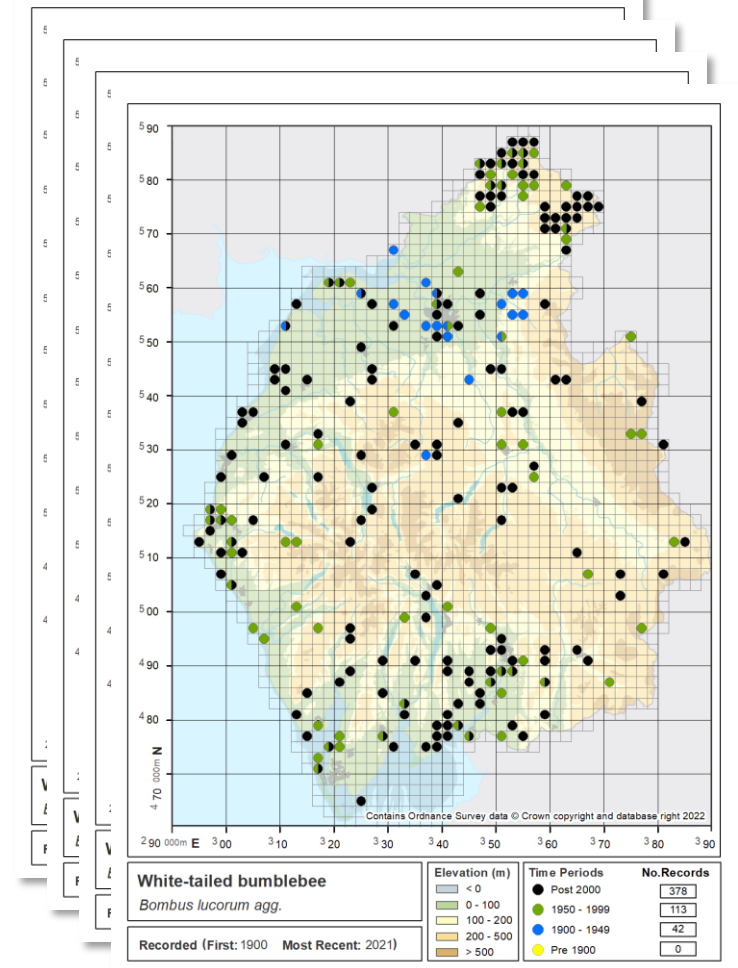
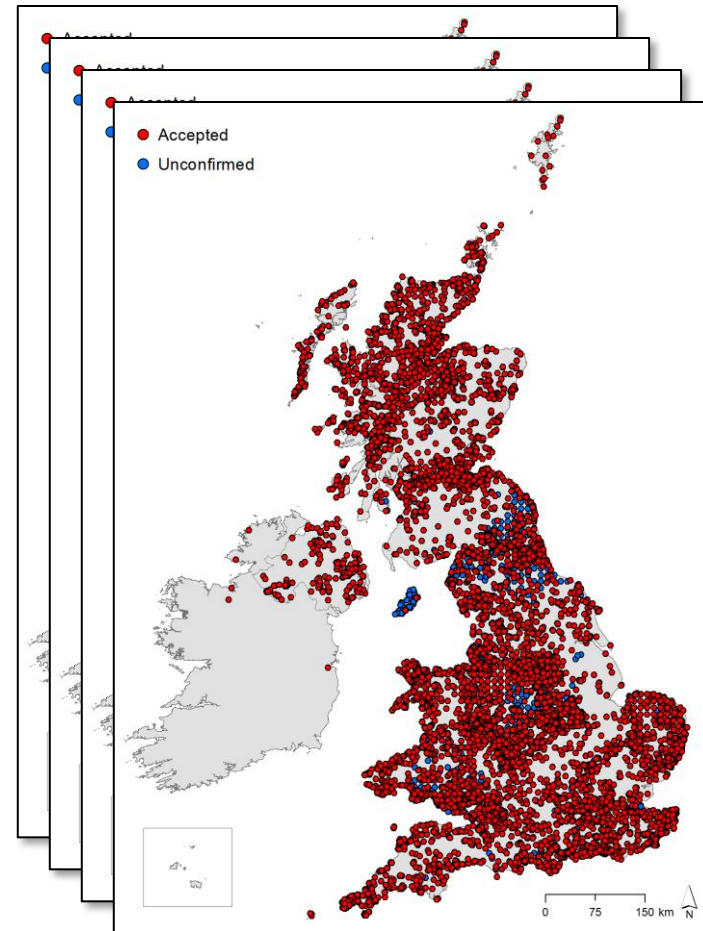
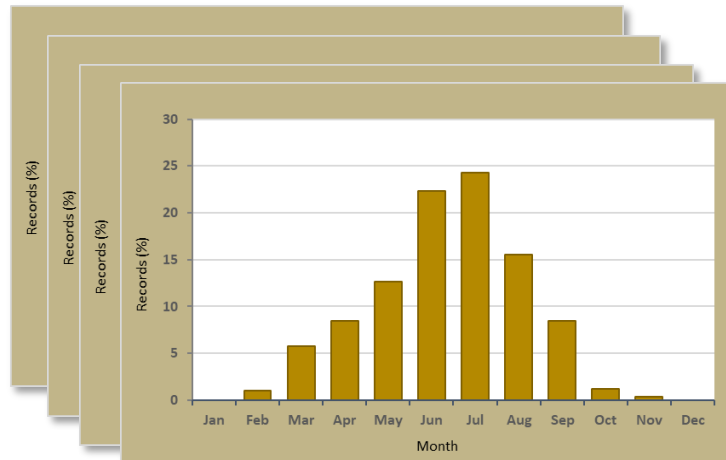
iNaturalist

iRecord

NBN

Neil Robinson dataset

## Creating Atlas Maps and Charts:



# Cumbria Bumblebee Atlas

## Account management:

Writers

Editor

[Ben Hargreaves]

Template

Cumbrian Species accounts	Writers
<b>Social Bumblebees</b>	
1. Garden Bumblebee	Vivian Russell
2. Great Yellow Bumblebee	Alex Playford
3. Brown-banded Carder Bee	Carolyn Postlethwaite
4. Tree Bumblebee	Charlotte Rankin
5. Heath Bumblebee	Vivian Russell
6. Red-tailed Bumblebee	Charlotte Rankin
7. White-tailed Bumblebee aggregate	Ryan Clark
8. Bilberry Bumblebee	Carolyn Postlethwaite
9. Moss Carder Bee	Vivian Russell
10. Common Carder Bee	Amelia Bennett-Margrave
11. Early Bumblebee	Phoebe Ney
12. Red-shanked Carder Bee	Carolyn Postlethwaite
13. Broken-belted Bumblebee	Alex Playford
14. Shrill Carder Bee	Carolyn Postlethwaite
15. Buff-tailed Bumblebee	Phoebe Ney
<b>Cuckoo Bees</b>	
16. Barbut's Cuckoo Bee	Alex Playford
17. Gypsy Cuckoo Bee	Ryan Clark
18. Field Cuckoo Bee	Vivian Russell
19. Red-tailed Cuckoo Bee	Charlotte Rankin
20. Forest Cuckoo Bee	Vivian Russell
21. Vestal Cuckoo Bee	Ryan Clark

### BOMBUS HORTORUM – SMALL GARDEN BUMBLEBEE - CUMBRIAN ATLAS

#### DESCRIPTION AND LIFE CYCLE – 145

##### DESCRIPTION

What distinguishes the Garden Bumblebee (*Bombus hortorum*) from all the other common species is its elongated face and exceptionally long tongue. This allows the bee to slip into slender flowers with long tubular corollas. In flight this species is easy to spot, with its pendulous tongue suspended in mid-air. When approaching a flower for nectar, the tongue is fully and impressively extended, but tucked up out of the way when collecting pollen.

The Garden Bumblebee is a medium size bee with three bright yellow bands and a white tail. A quick way to identify it is to look at the midriff where two of the yellow bands sit side by side like double yellow parking lines. The only other bumblebee we have in Cumbria with this distinctive midriff is the Heath Bumblebee (*Bombus jonellus*), but this is a much smaller species, with a chubby face and short tongue.

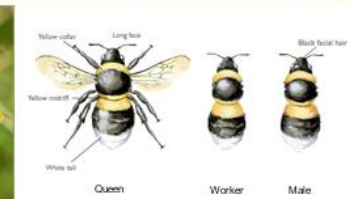
The queens, workers and males all share the same uneven coat and colour pattern. Variations do sometimes occur, including a dark, melanistic form, but this bee will always have its signature long face and tongue. (180)

##### LIFE CYCLE

Garden Bumblebee queens are quite late to emerge from their over wintering sites but are often seen here with full pollen

#### Small Garden Bumblebee

*Bombus hortorum*, (Linnaeus, 1761)



#### Description and Life Cycle:

##### Description

What distinguishes the Garden Bumblebee (*Bombus hortorum*) from all the other common species is its elongated face and exceptionally long tongue. This allows the bee to enter narrow flowers with long tubular corollas other bumblebees cannot access. In flight this species is easy to spot, with its pendulous tongue suspended in mid-air. When approaching a flower for nectar, the tongue is fully and impressively extended, but tucked up out of the way when collecting pollen.

The Garden Bumblebee is a medium size bee with three bright yellow bands and a white tail. Size can be variable though, and workers can be larger than a small queen depending on how much food they received as larvae [1]. A quick way to identify it is to look at the midriff where two of the yellow bands sit side by side like double yellow parking lines. The only other bumblebee we have in Cumbria with this distinctive midriff is the Heath Bumblebee (*Bombus jonellus*), but this is a much smaller species, with a chubby face and short tongue.

The queens, workers and males all share the same uneven coat and colour pattern. Variations do sometimes occur, including a dark, melanistic form, but this bee will always have its signature long face and tongue.

##### Life cycle

Garden Bumblebee queens are quite late to emerge from their over wintering sites but are often seen here with full pollen baskets by mid-April before the other species. They are known to choose unusual nesting sites both above and below ground, and this versatility may give them an advantage.

Nests are established under the cover of trees, plant roots, leaf litter or dried grass exposed to sunlight, or 50cm or so below the soil surface in spent mouse burrows for example. They also exploit a variety of cavities, including compost bins, dedicated nests for bumblebees filled with

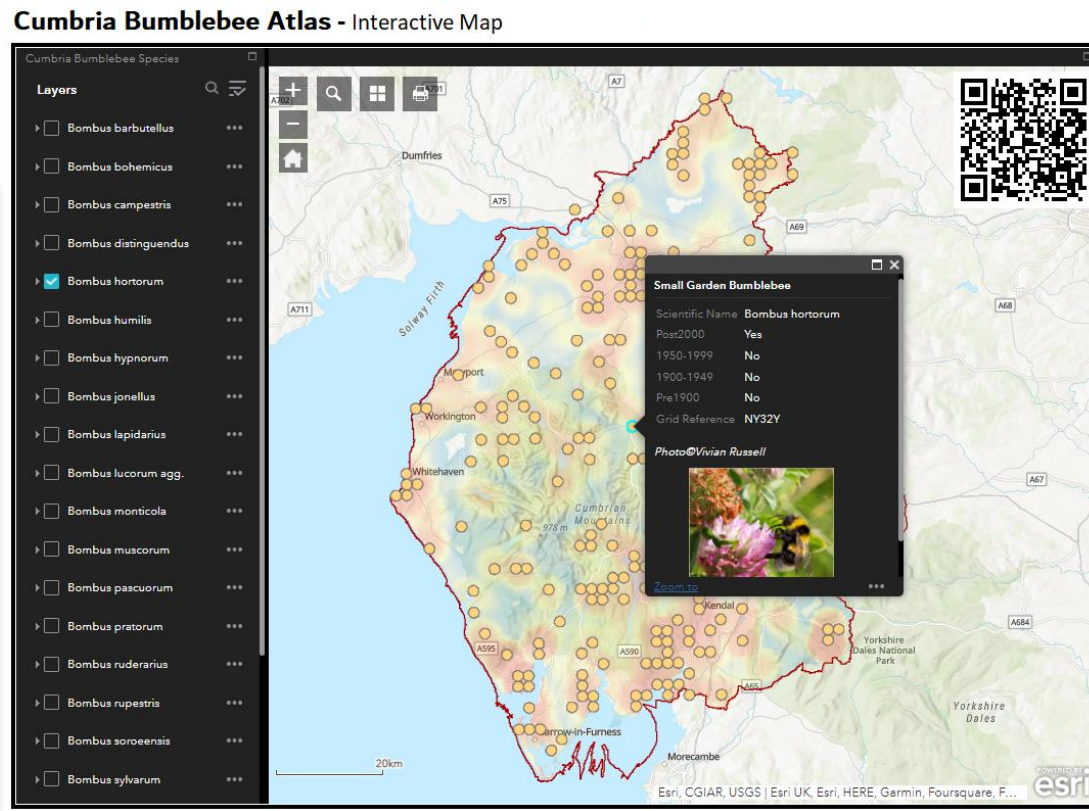
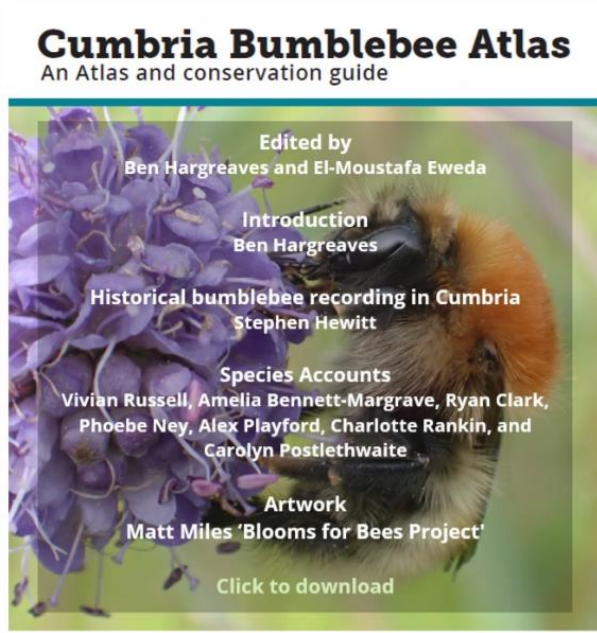


Pollinating Broad Beans



# Cumbria Bumblebee Atlas

- Online Atlas webpage and interactive map
- Bumblebee Atlas hard copy



[https://www.cbdc.org.uk/about-us/projects/bumblebee\\_atlas/](https://www.cbdc.org.uk/about-us/projects/bumblebee_atlas/)

# ELMS\* – Forgotten Lands - Species Mapping

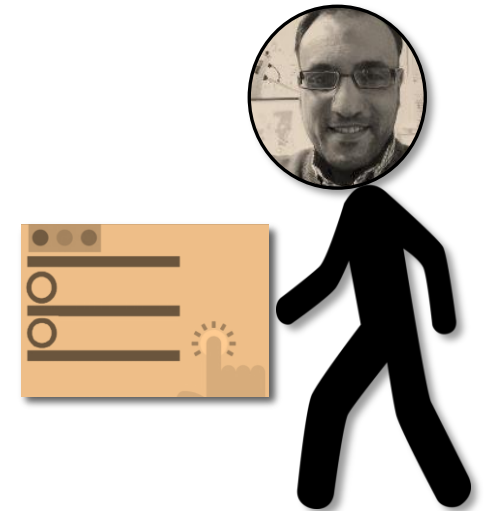


CBDC RECORDS DATABASE

OVER 600



RECORDING SPREADSHEET

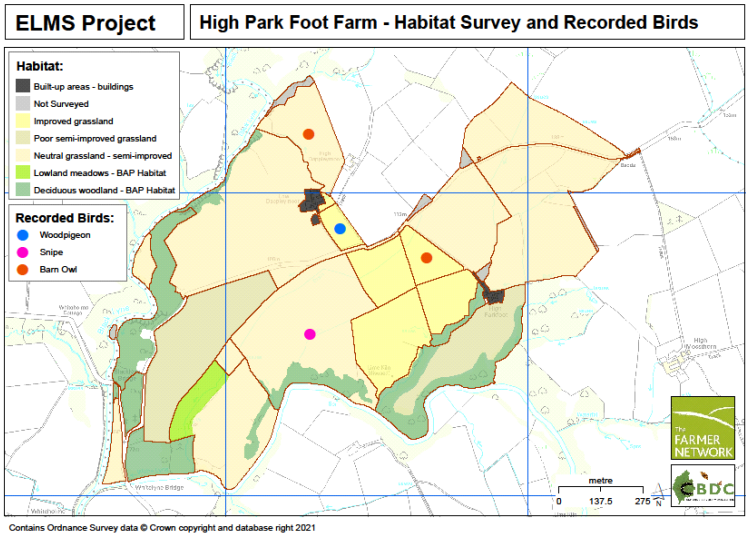
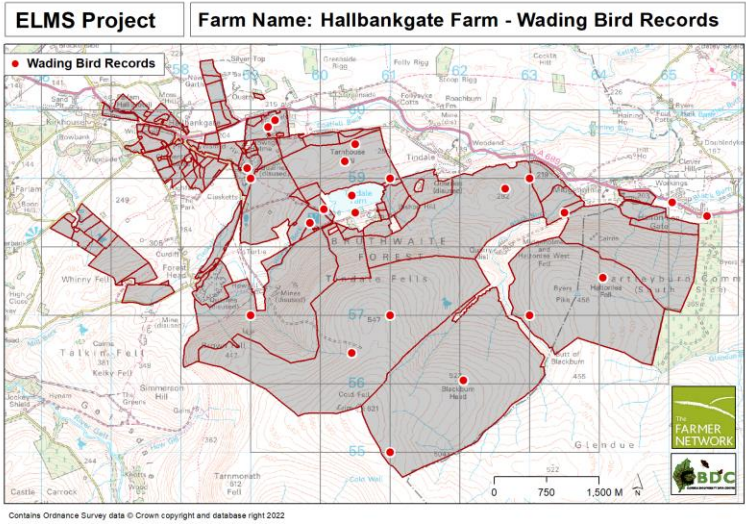


ONLINE RECORDING FORM

\*ELMS: Environmental Land Management Schemes



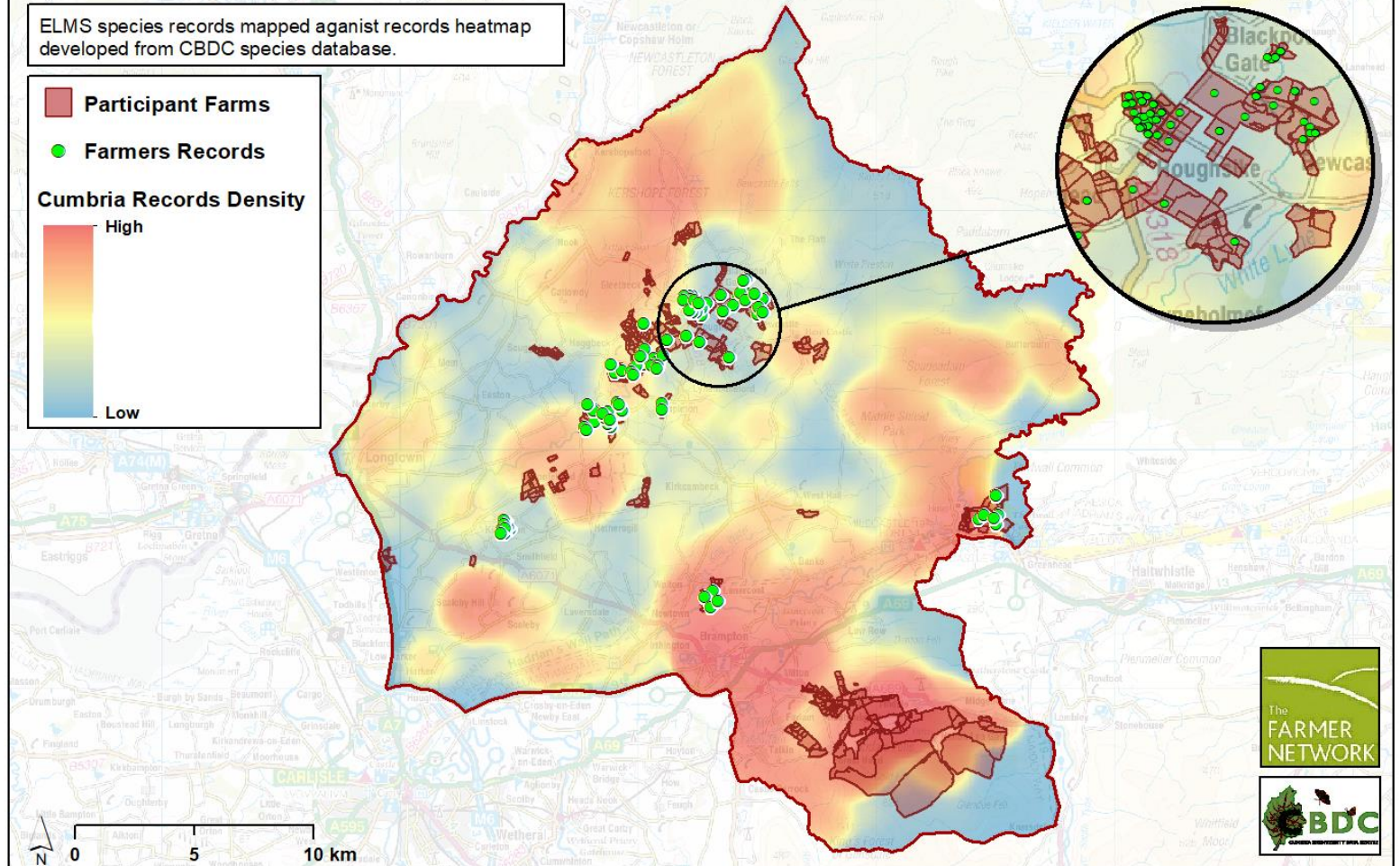
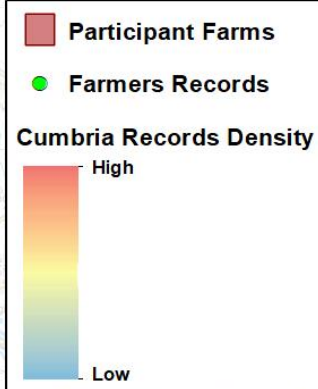
# ELMS – Forgotten Lands - Species Mapping



## ELMS Project

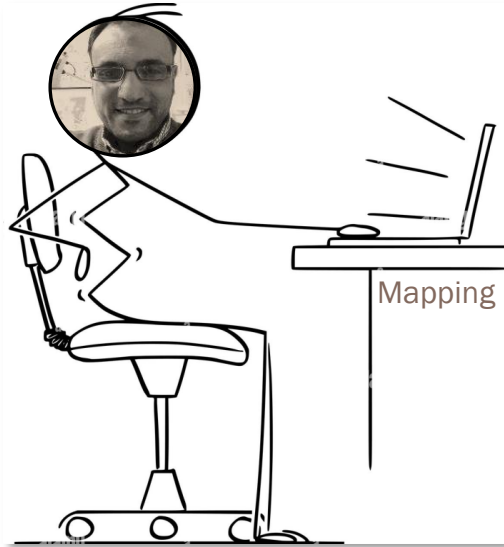
## Forgotten Lands - Species Records

ELMS species records mapped against records heatmap developed from CBDC species database.



Contains Ordnance Survey data © Crown copyright and database right 2022

# ELMS – Forgotten Lands - Habitat Mapping



17 FARMS



HABITAT SURVEY DATA

## Priority Habitats:

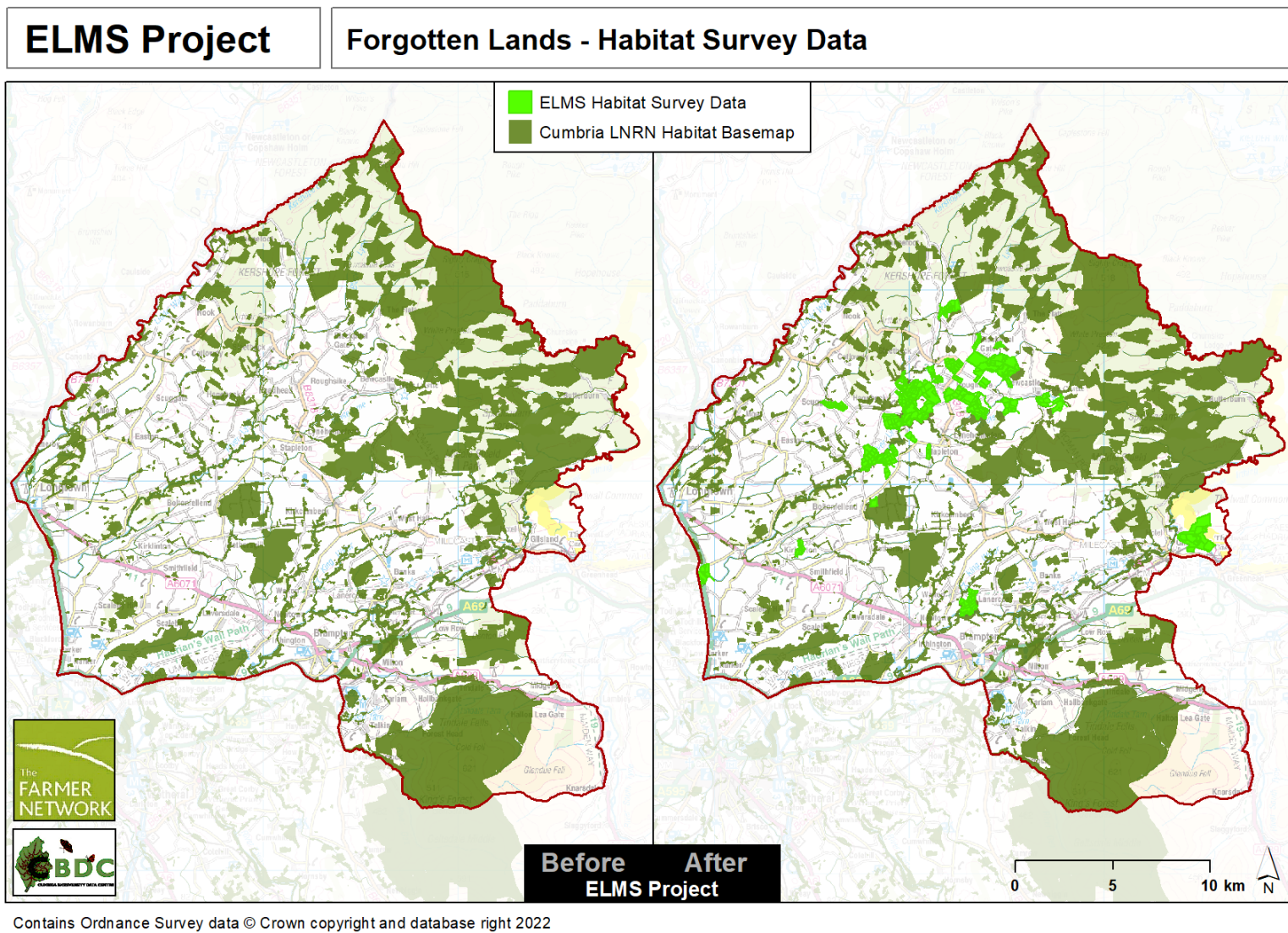
• Deciduous woodland	• Purple moor grass and rush pastures	• Lowland meadows
• Upland hay meadows	• Lowland fens	• River
• Hedgerows	• Wood pasture and parkland	• Pond

## Other Habitats:

• Scrub	• Unimproved grassland	• Mixed woodland
• Semi-improved grassland	• Improved grassland	• Wet Grassland

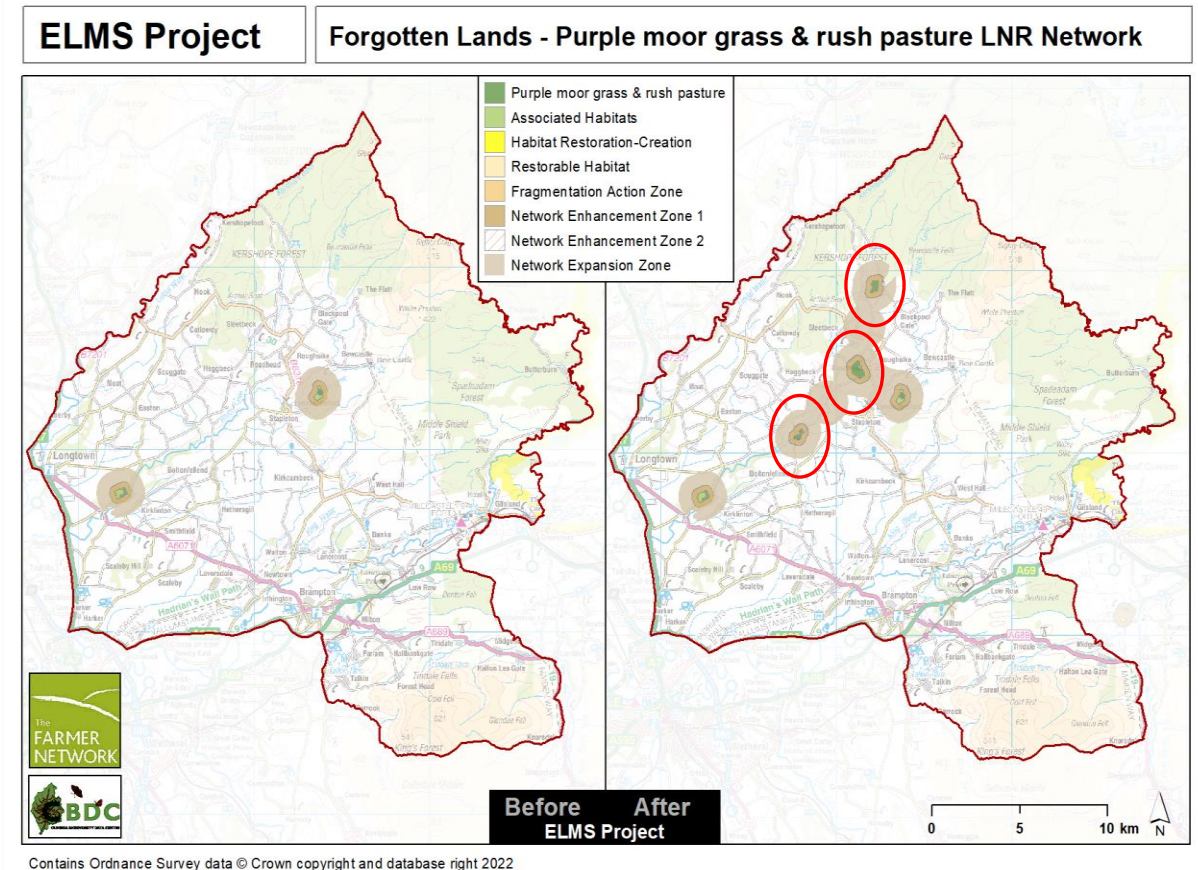
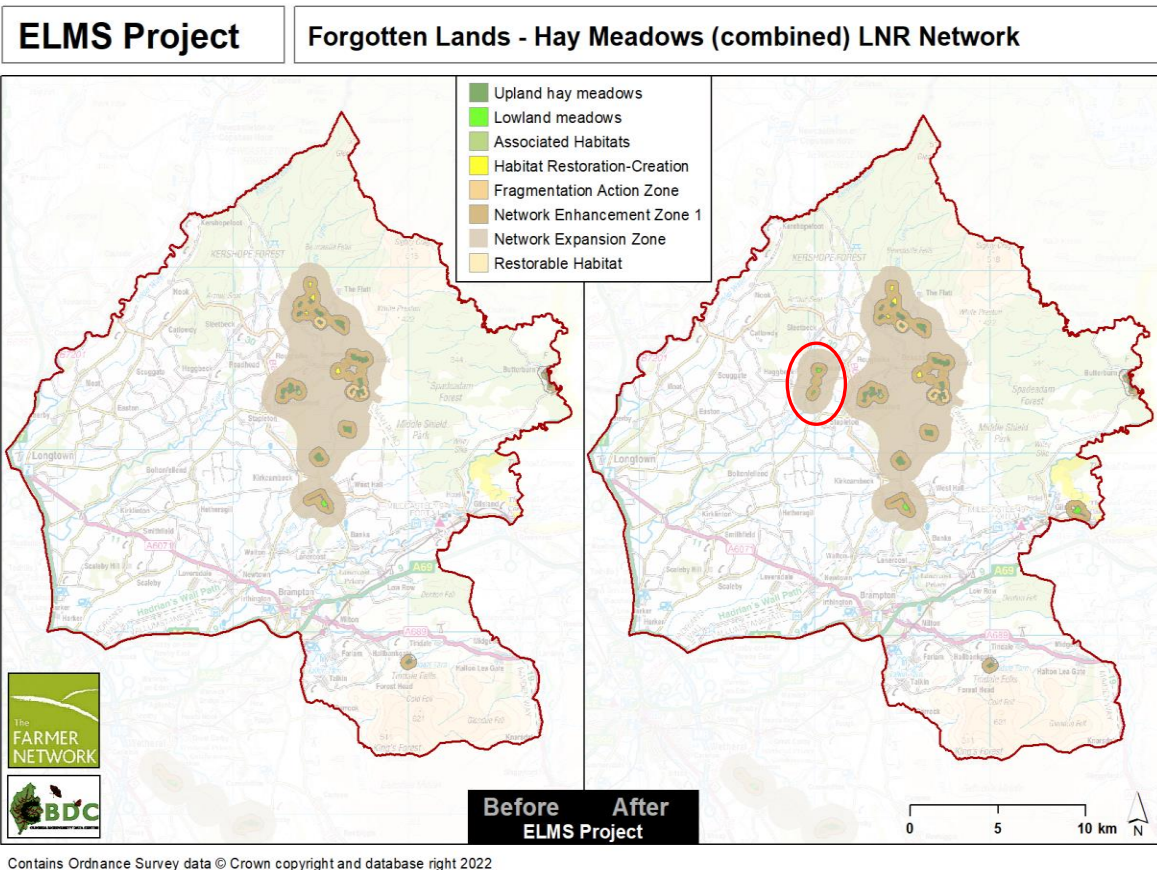


# ELMS – Forgotten Lands - Habitat Mapping



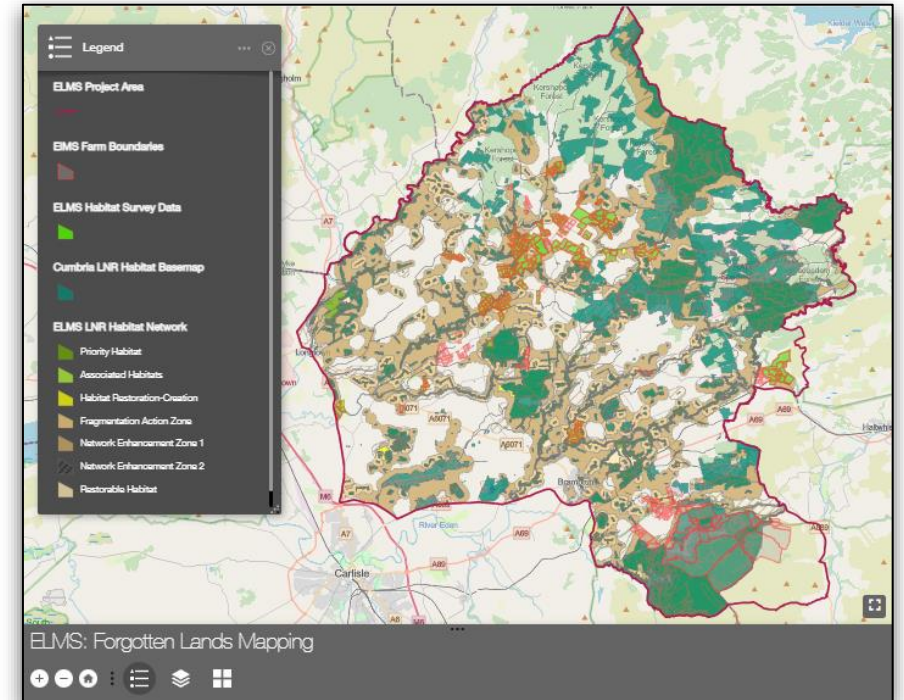


# ELMS – Forgotten Lands - Habitat Mapping





# ELMS – Forgotten Lands - Webpage

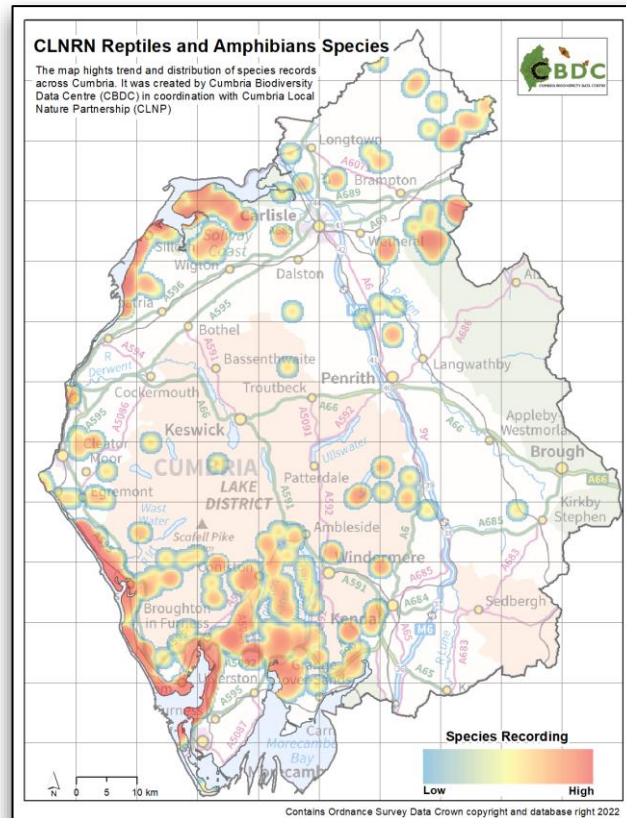


[https://www.cbdc.org.uk/about-us/projects/elms\\_forbidden\\_land\\_mapping/](https://www.cbdc.org.uk/about-us/projects/elms_forbidden_land_mapping/)

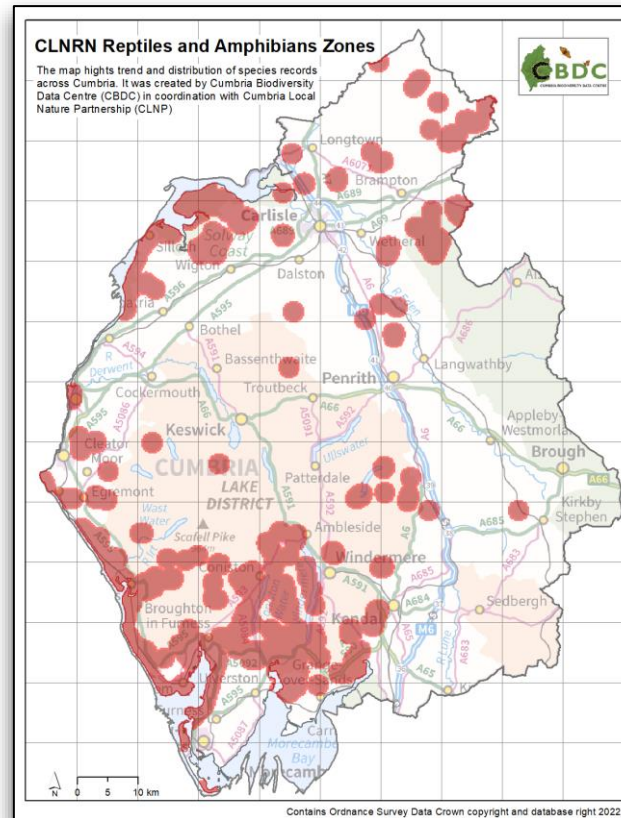


# Species Mapping and CLNRN\* Habitat Networks

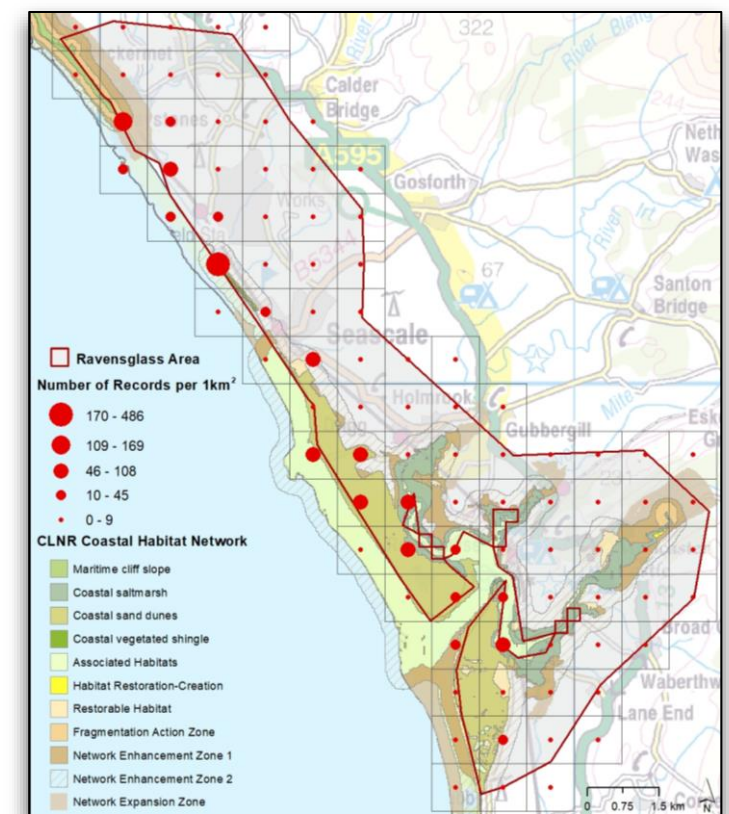
Records analysis



Zone creation



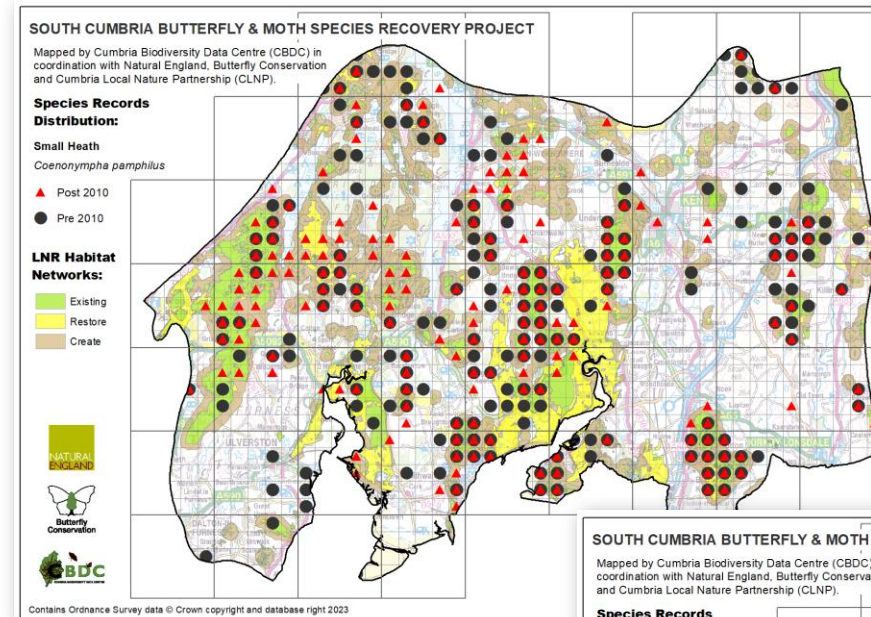
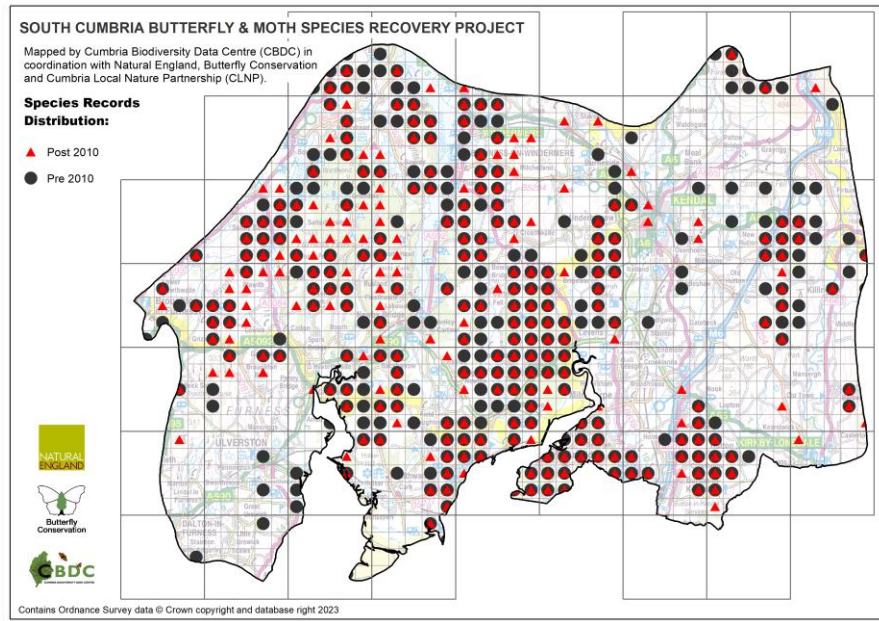
Case study



\*CLNRN: Cumbria Local Nature Recovery Network

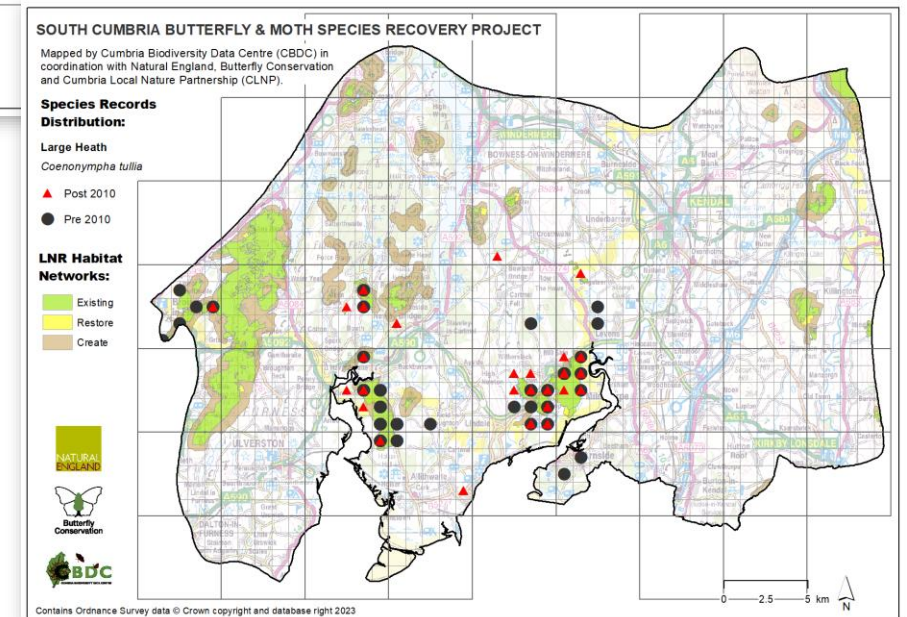
# Species Mapping and CLNRN Habitat Networks

## Species Recovery Programme in Morecambe Bay



Blanket bog  
Lowland heathland  
Lowland raised bog  
Upland flushes fens & swamps

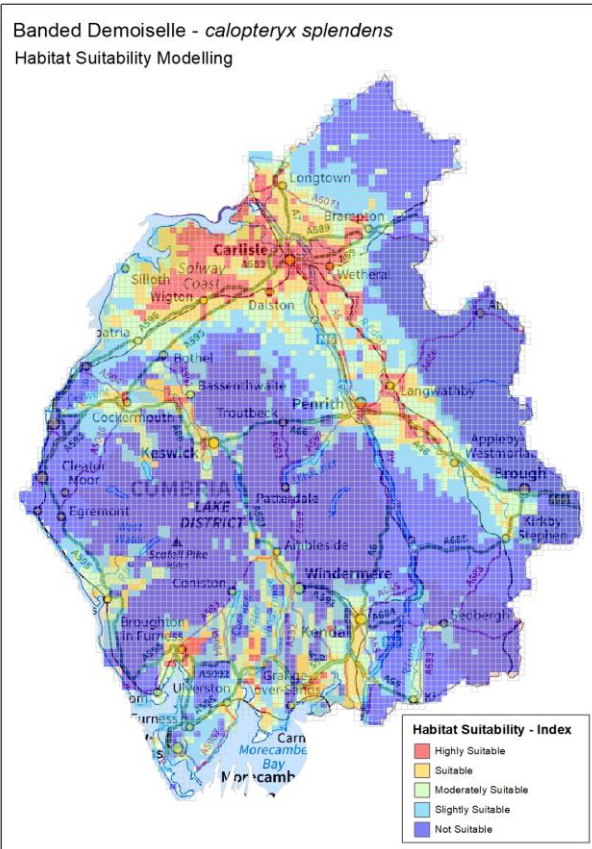
Blanket bog  
Limestone pavement  
Lowland calcareous grassland  
Lowland dry acid grassland  
Lowland fens  
Lowland heathland  
Meadows  
Lowland raised bog  
Purple moor grass & rush pastures  
Upland calcareous grassland  
Upland flushes fens & swamps  
Upland heathland



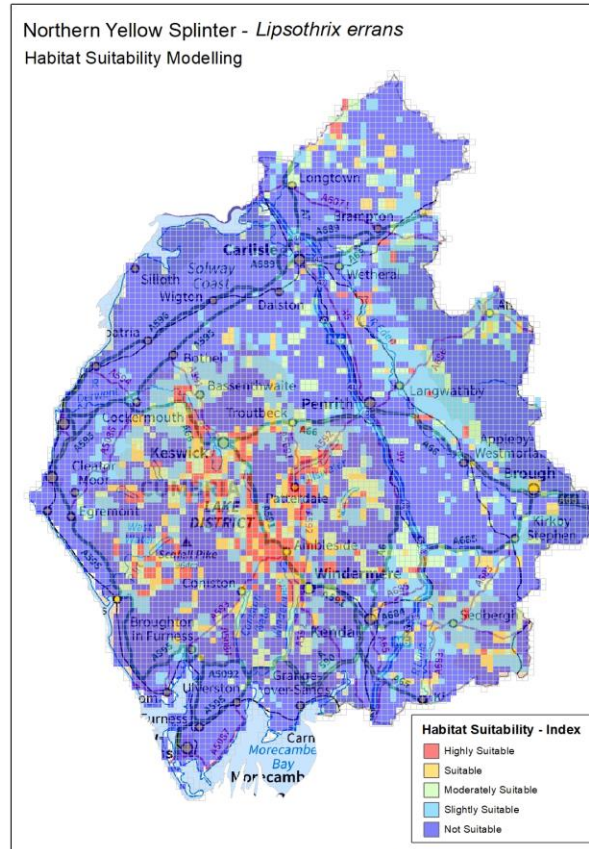


# Species Mapping - Species Distribution Modelling

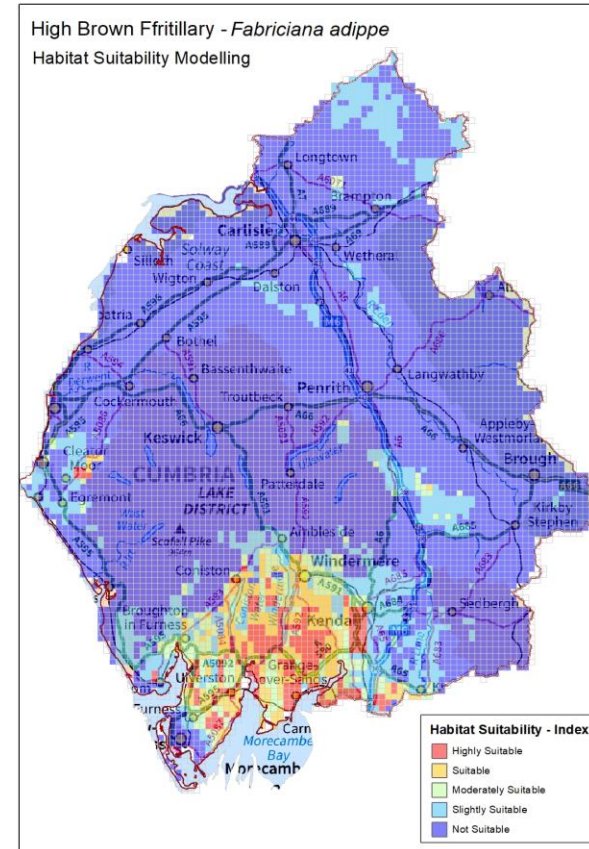
**Climate Data** : Temperature, Rainfall, Humidity, Wind, Sunshine Duration, Snow Lying, Ground Frost  
**Topography** : Slope and Elevation  
**Other Variables** : Soils and Habitats



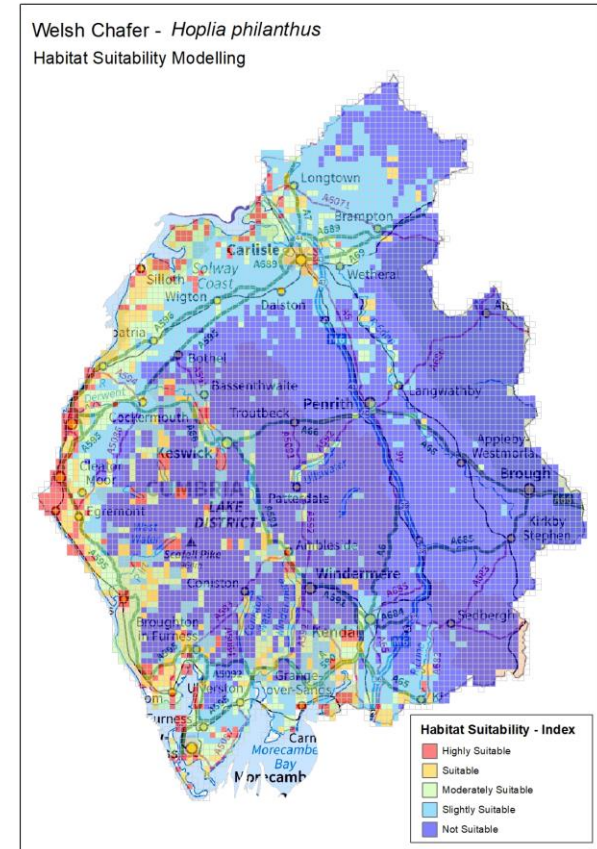
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