# Wild British Orchids

## Sex cheats and scroungers

Natural history, conservation, with some odds and ends.

# Outline

- Orchid family key features and biology – why scroungers and sex
- Touch on history of names and use
- Introduce selected species by habitat
- Conservation issues – some examples
- Questions

- Will try to note when I show a species found locally in Castlemorton

# Fascinated by orchids













# Early purple orchid – the archetypal orchid?

- Flowers April onwards
- Woodland and lime rich grassland
- Purple flowers and spotted leaves



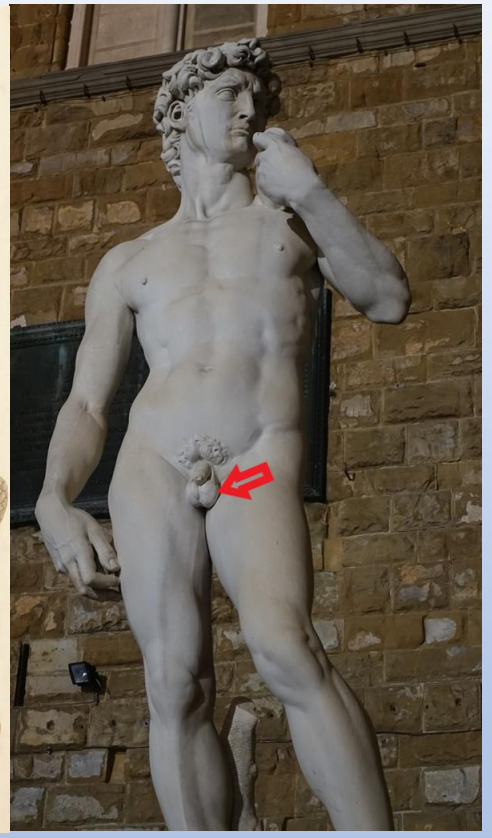




# Orchid – what's in a name?







Ὄρχις Orchis

testicolo di canne (*it*)

coyon de perro (*sp*)

# Early purple orchid names

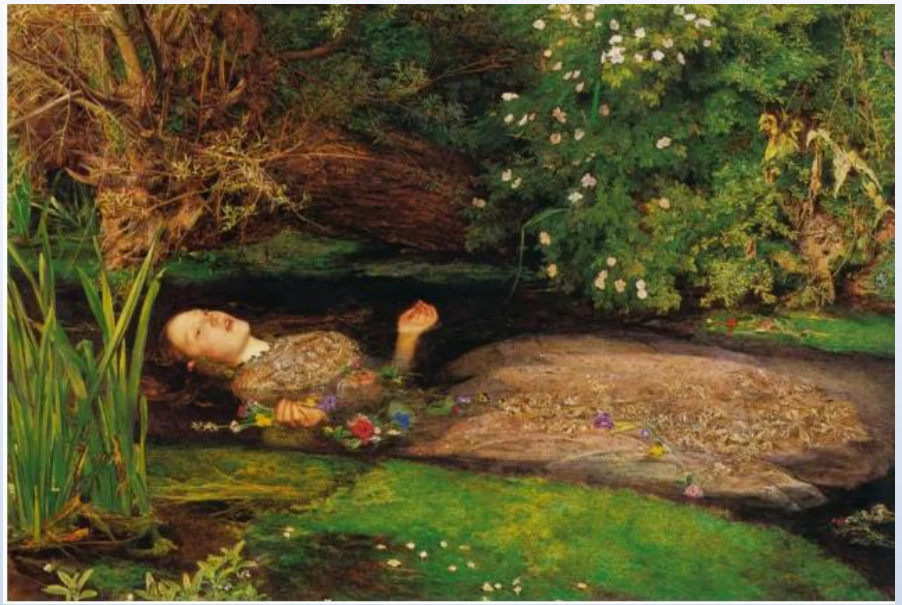
Scientific name: Orchis mascula

Middle English:  Ballockwort

Local ‘country’ names include:

Devil’s pintle; dog stones; fool stones; bull’s bag; ducks and drakes; lords and ladies; Adam and Eve; lady’s fingers; dead men’s fingers; spotted dog…. etc.

(Geoffrey Grigson, The Englishman’s Flora)



“There were fantastic garlands did she come
Of crow-flowers, nettles, daisies **and long purples**
**That liberal shepherds give a grosser name**,
But our cold maids do dead men’s fingers call them”

*Hamlet*

# Saloop



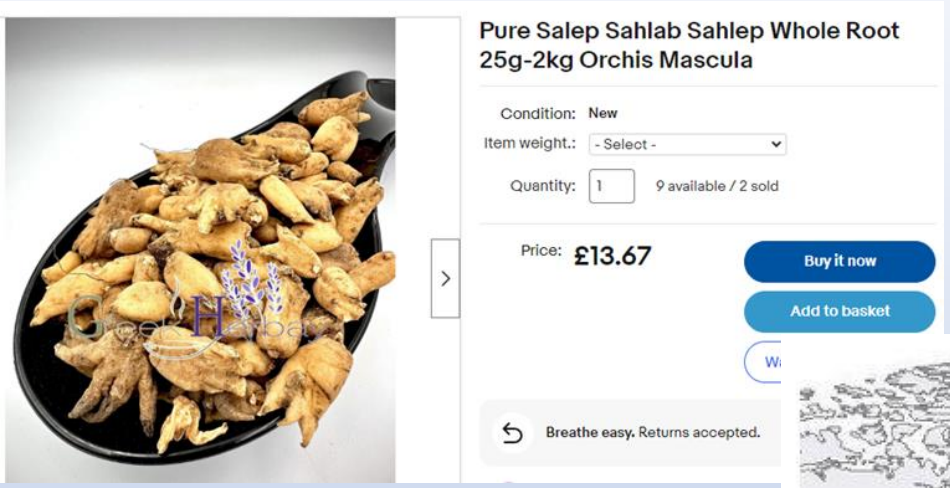

Sahlab – 16th century drink introduced from Ottomans (Turkey)

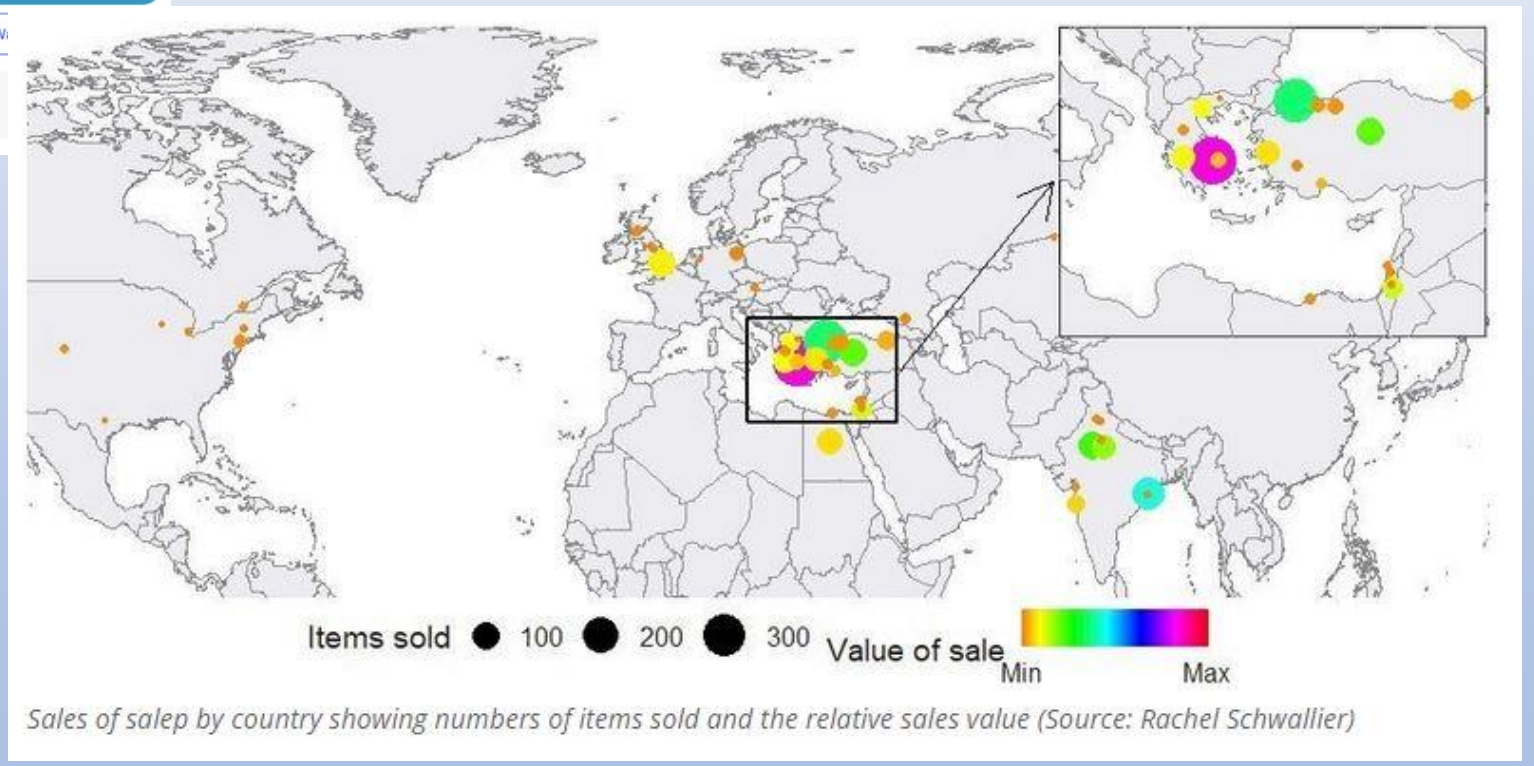
A restorative drink, aphrodisiac and a venereal cure

*"enough orchids grow in Cobham Park Kent to pleasure all the seamen's wives in Rochester"*

(Robert Turner Botanologia 1664)

# Salep trade today




*Sales of salep by country showing numbers of items sold and the relative sales value (Source: Rachel Schwallier)*

# What is an orchid?

Family of monocots – related to lilies, grasses etc

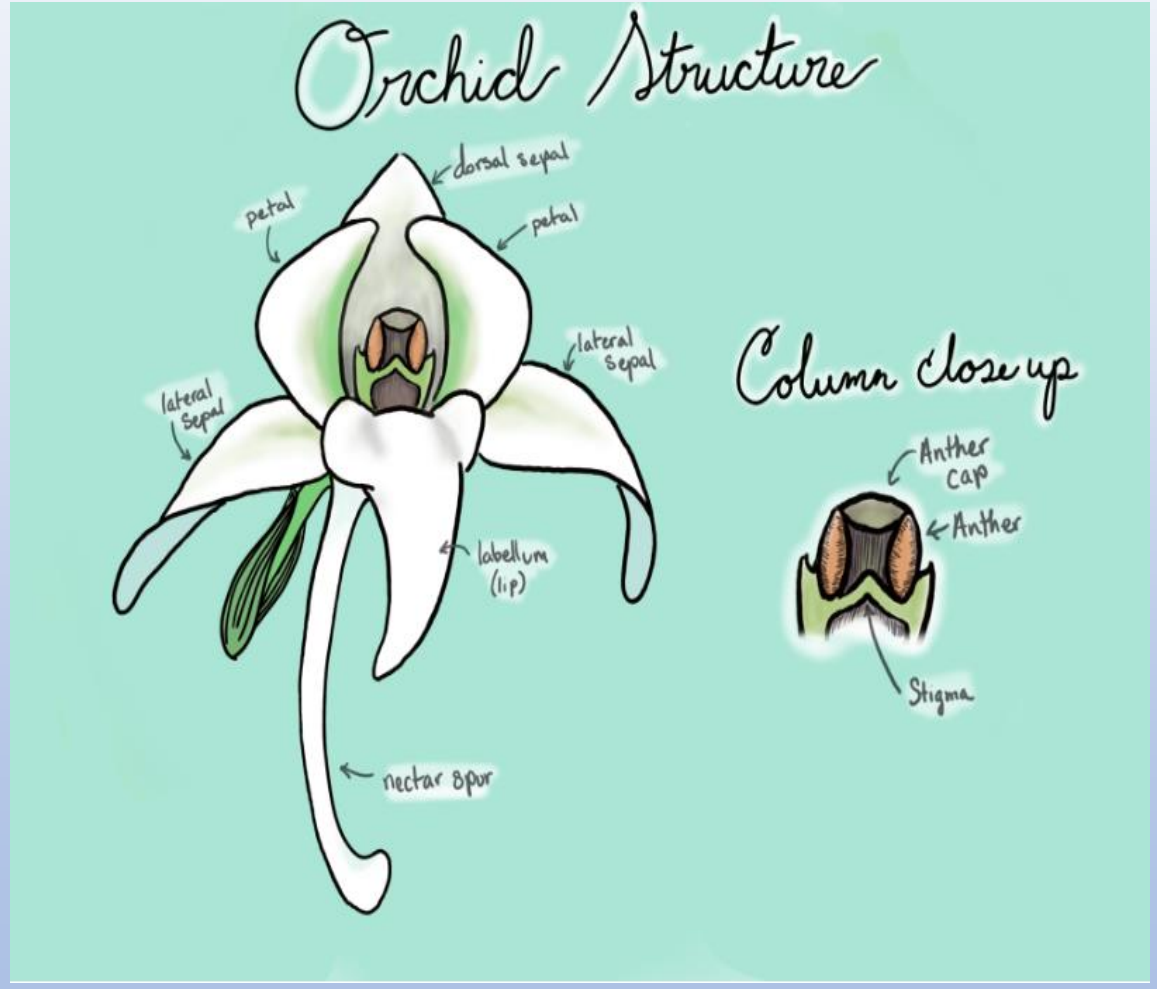
Strap or sword like leaves with parallel veins

Flowers bilaterally symmetrical

3 sepals - 3 petals

Fused stamen and carpel - column

A modified petal forms a lip (labellum)



# Orchid family

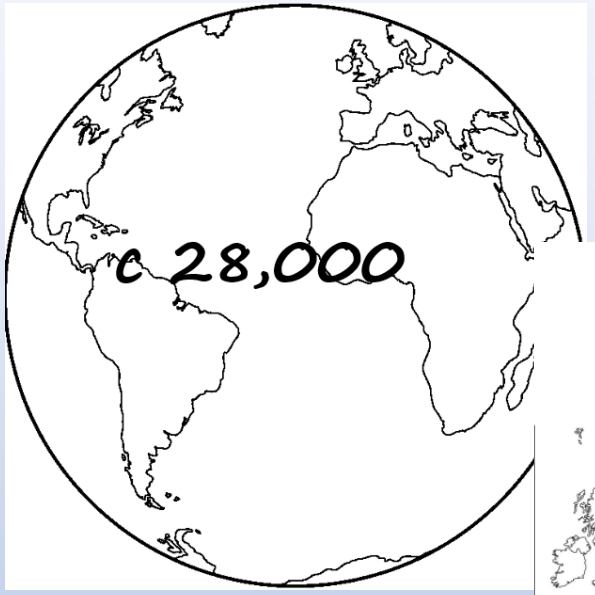
- Largest or 2nd largest plant family
- About 8% of all flowering plant species are orchids.
- Earliest orchids date back to age of dinosaurs - >66m years ago.
- Flowering plant revolution c 35m years ago.
- UK orchids all grow on the ground – but worldwide most orchids are tropical and grow on trees.

Economic uses: vanilla and horticulture





# Number of species





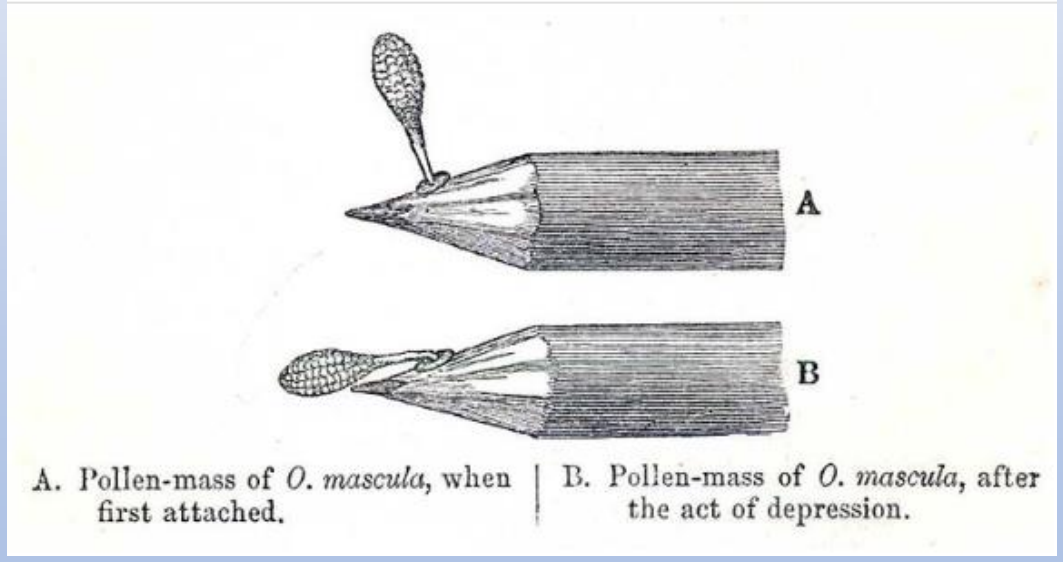


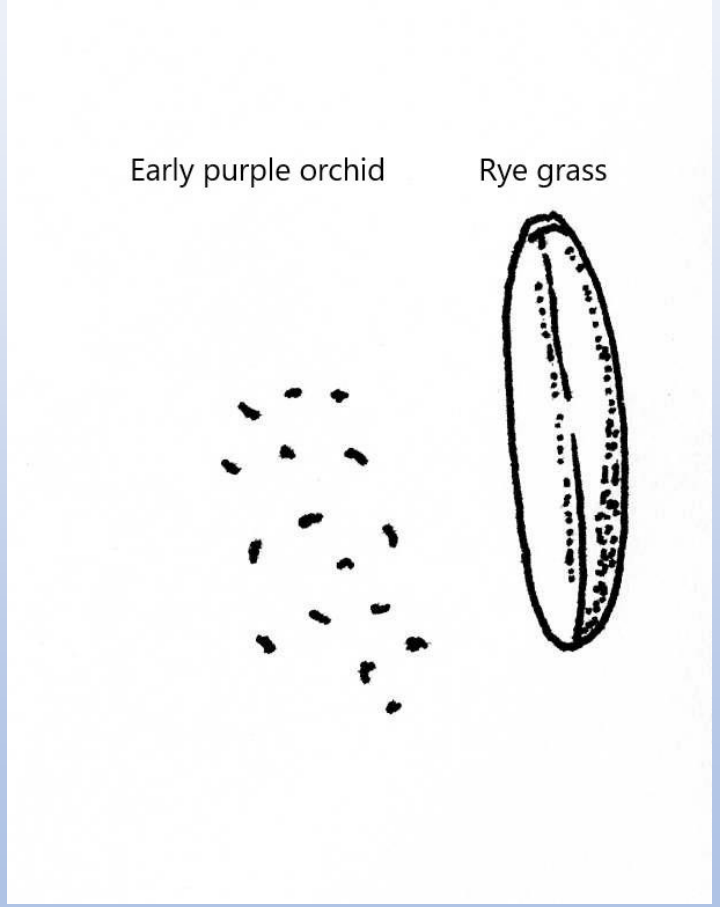




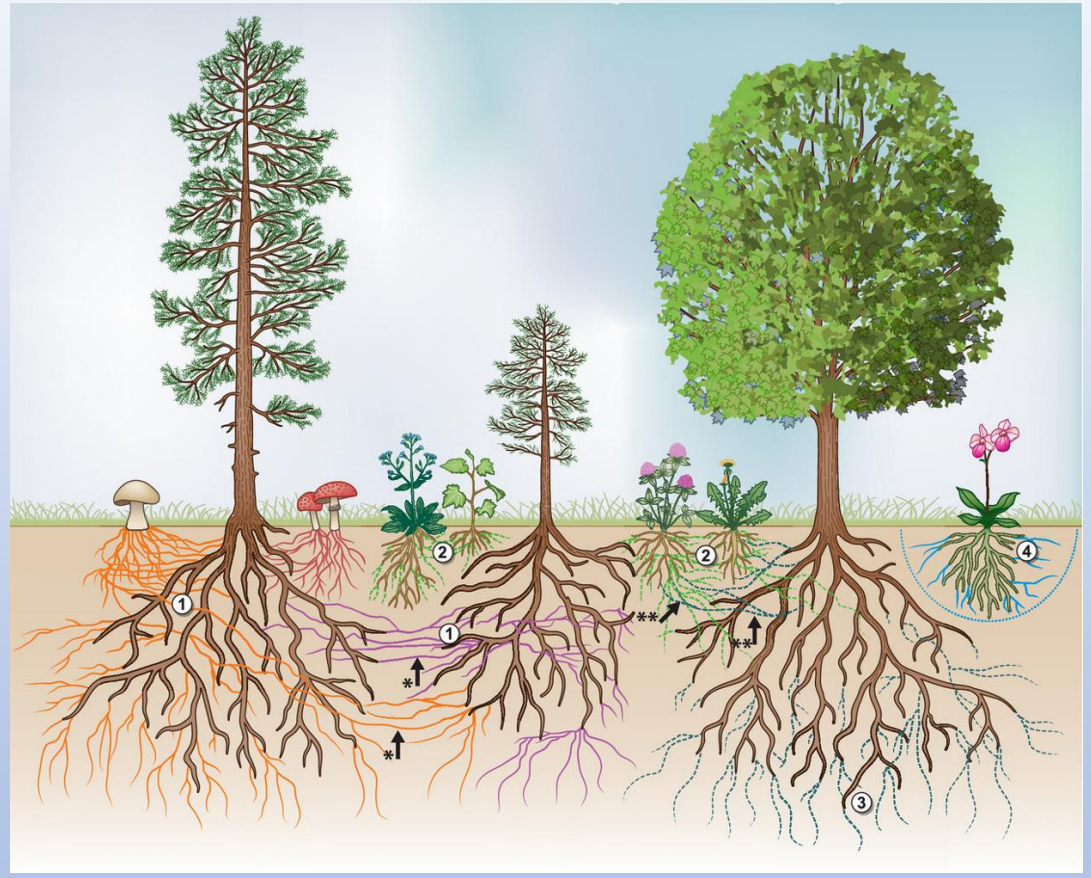

# Special adaptations

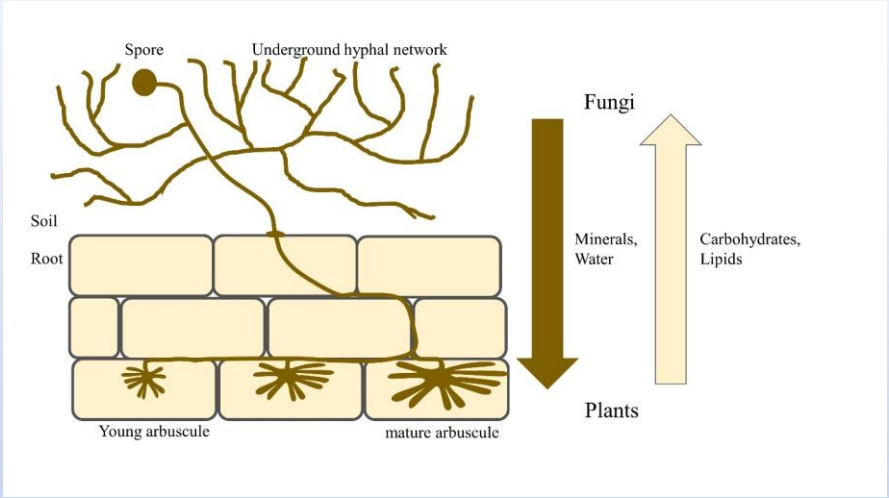
- Pollinia – insect pollination
- Very small seeds – depend on fungi for germination



# Fungal partners – wood wide web






- 40-50,000 species of fungi form mycorrhizal associations with plants.
- Orchids can’t germinate without them – scroungers!

# Bee orchid life cycle

- Seed lands on soil
- Inoculated by the right fungal mycelium
- Germinates and grows into small tuber.
- 3-4 years to produce leaves – fed by fungus
- First flowers year 5-8
- Several flowering seasons but not long lived
- Self pollinated in UK





# Birds nest orchid



- Grows in deep shade
- No chlorophyll
- All nutrition comes from mycorrhizal fungi
- Total scrounger!



# Pollination – butterfly orchids



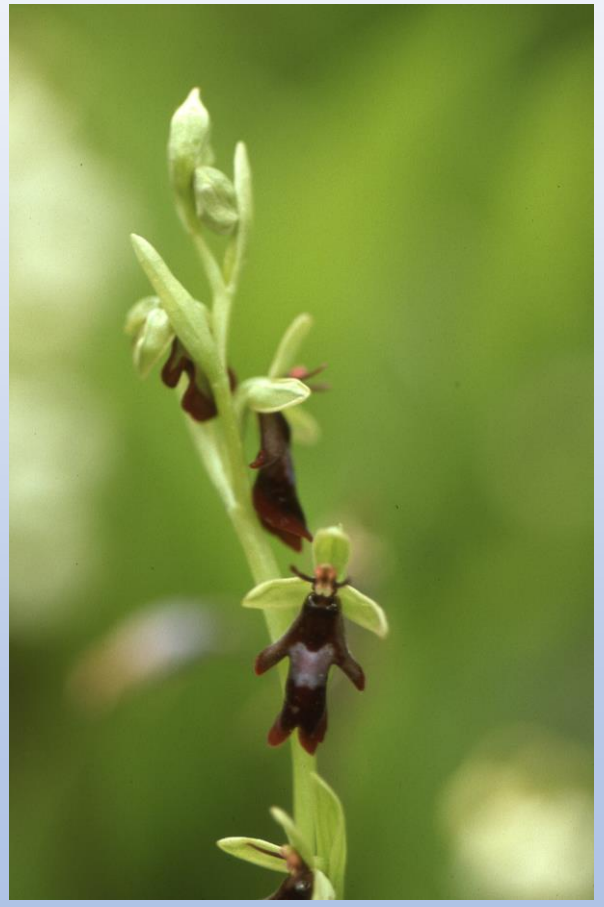






- Night flowering
- Attractive scent
- Nectar in long spur – moths with long tongues
- Lock and key pollinia line up with head

# Pollination - insect mimics

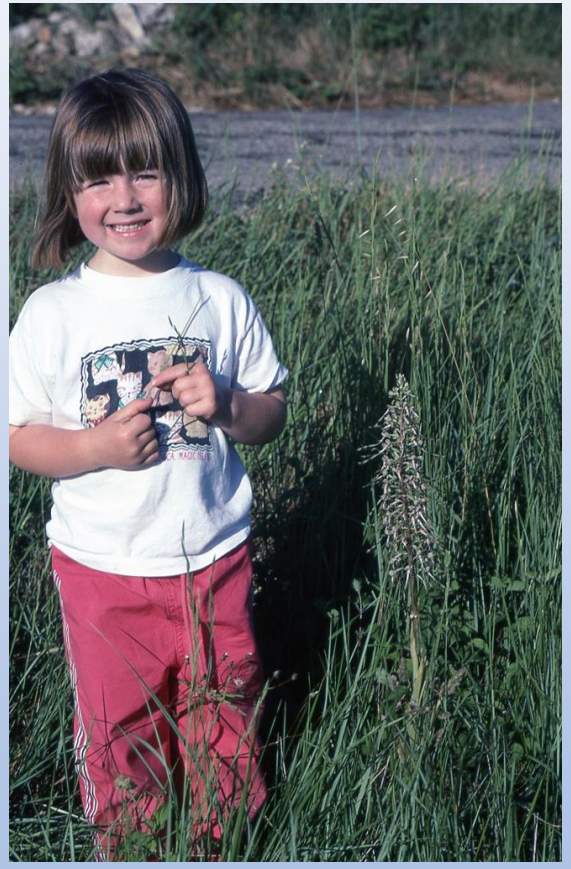


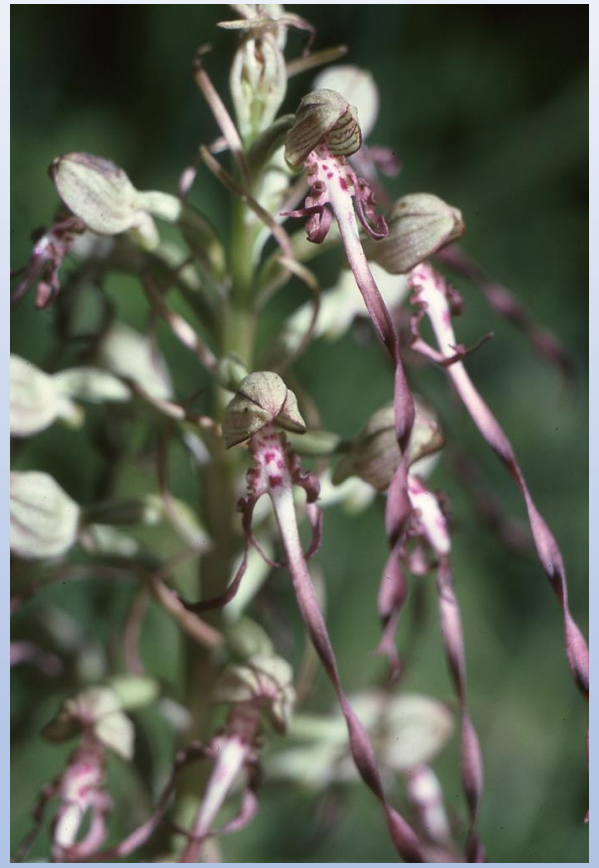




- Fly orchid
- Scent and shape attractive to male digger wasp – mimics female wasp hormones
- Timing of flowers to match flight of *males*
- Pseudocopulation – sex cheat!

# Lizard orchid





- Widespread in Europe
- Rare in UK but spreading northwards from Kent stronghold
- Scent and possibly pattern on flower attracts insects
- No nectar so no reward for pollinator.
- Deception pollination – scrounger!

# Grassland - meadows



- Green winged orchid
- Butcher; bloody butcher; bloody-man's thumbs

(Botany of Worcestershire 1906)



# Grassland – spotted orchids

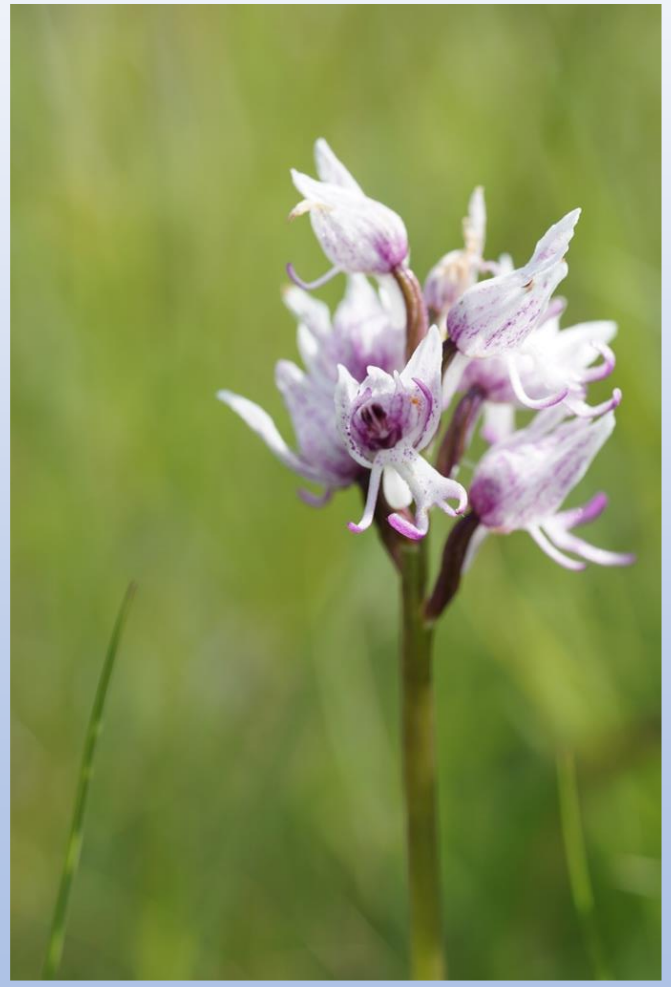






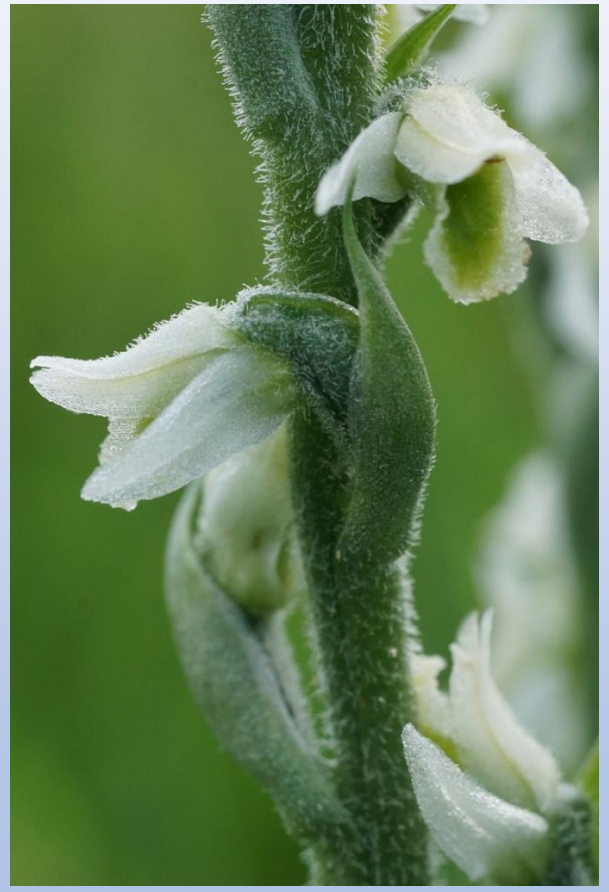
# Grassland – chalk and limestone







# Autumn ladies’ tresses





# Marsh orchids

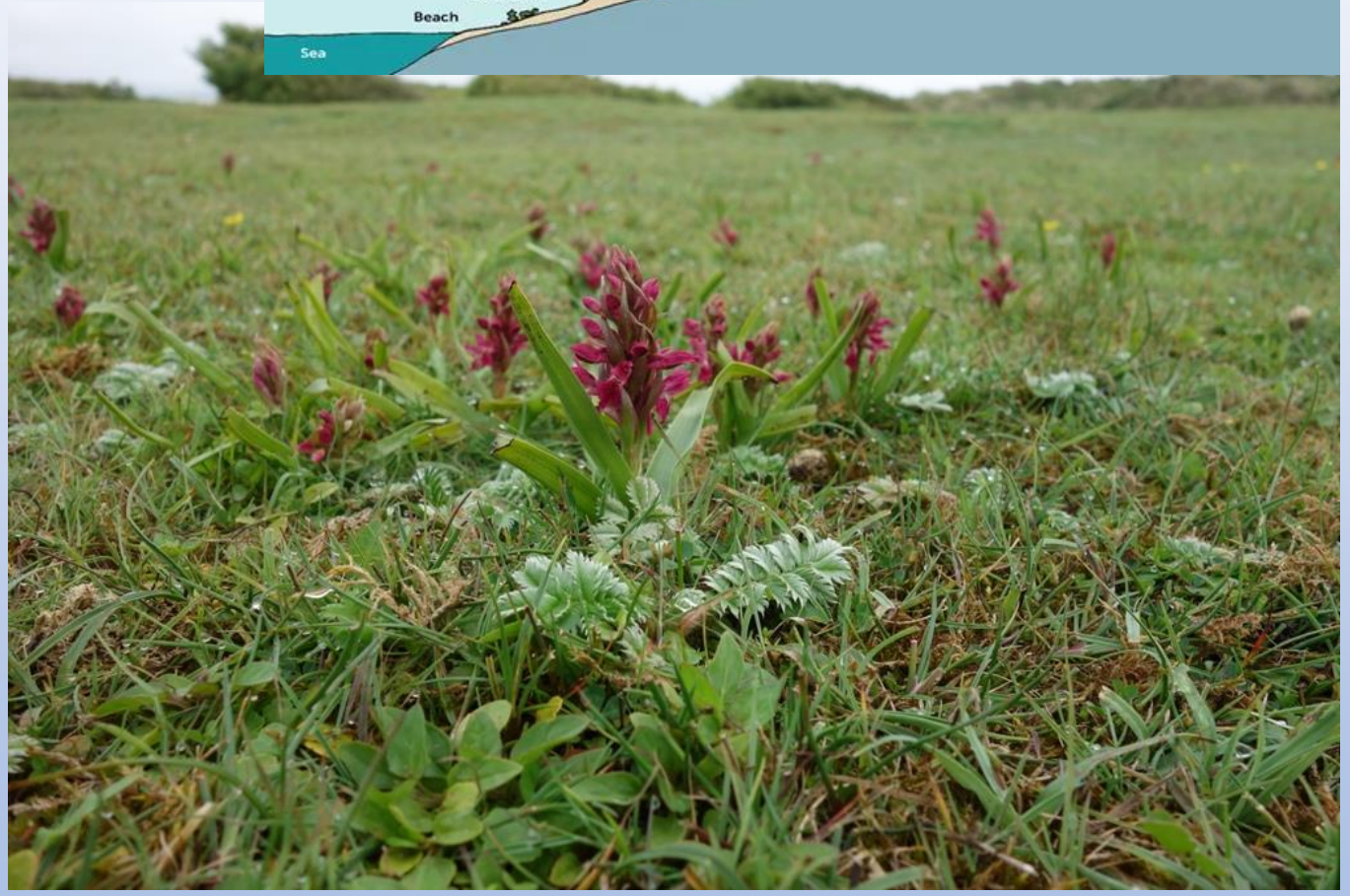


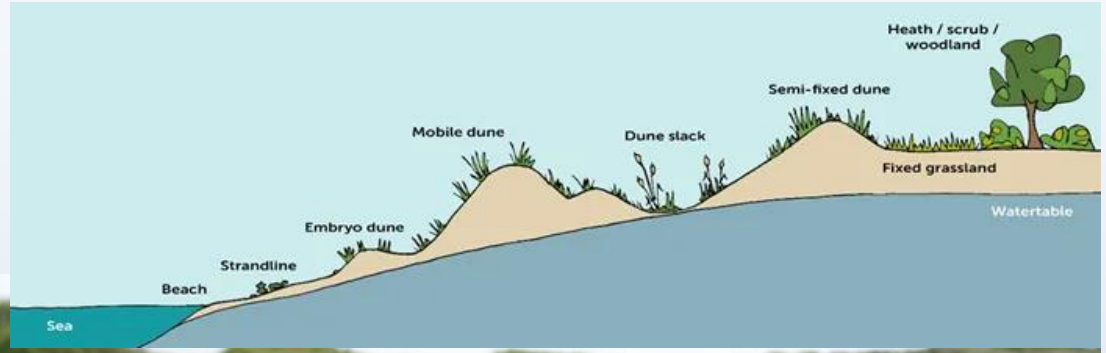




# Dune habitats







# Limestone pavement





# Woodland



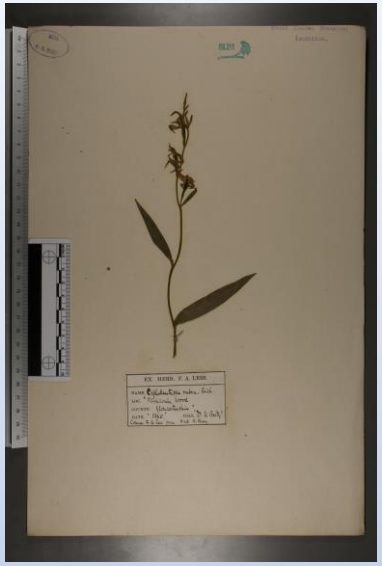






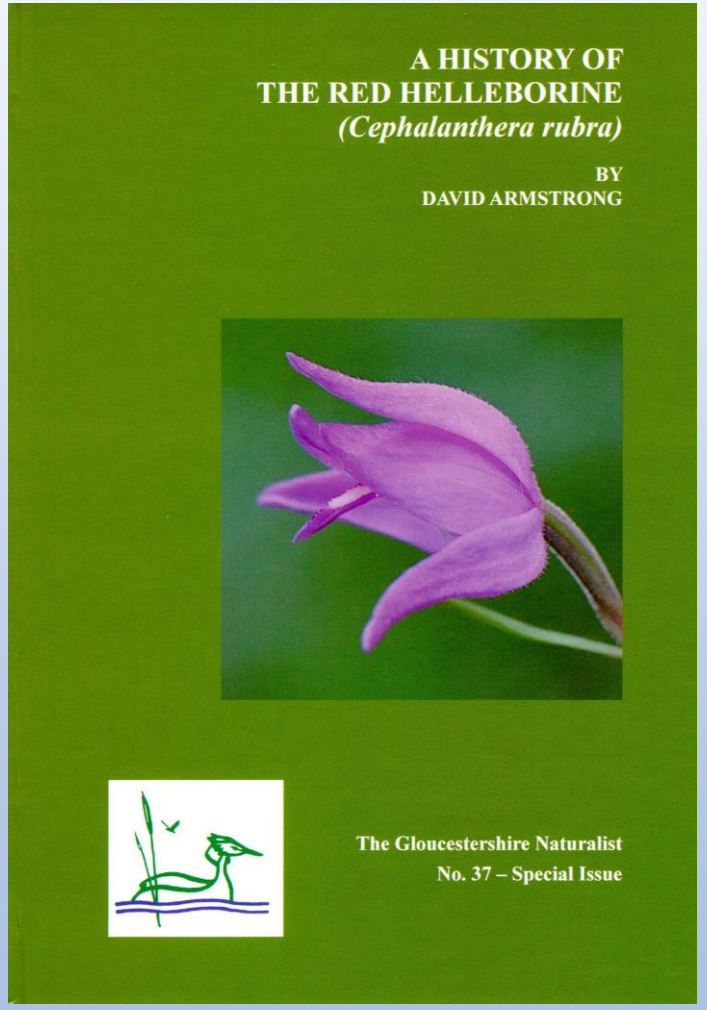
# Red helleborine





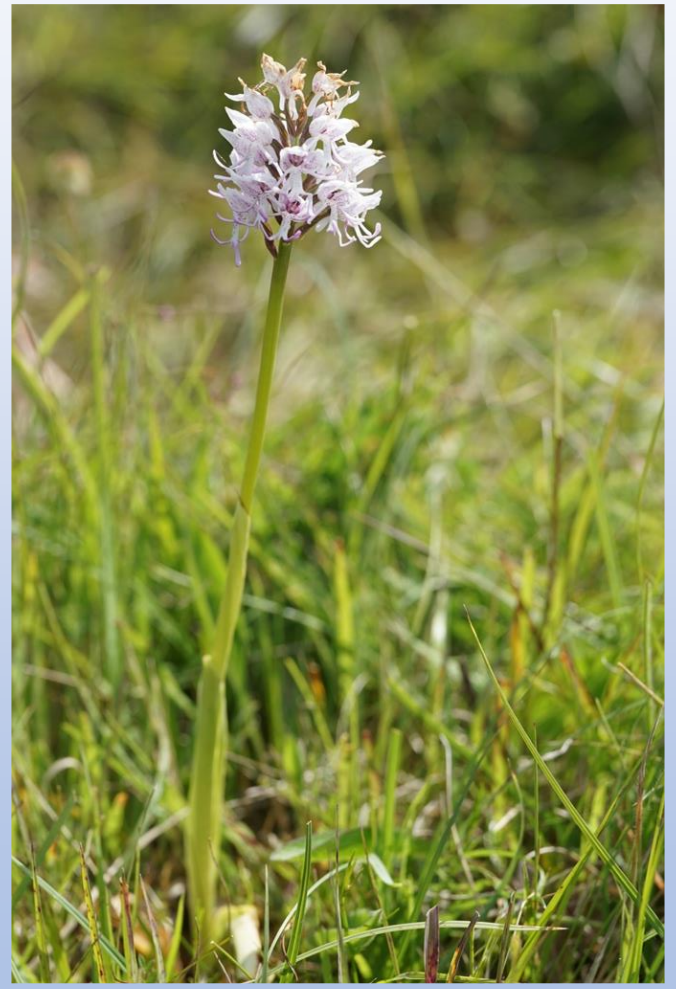






# Lady orchid



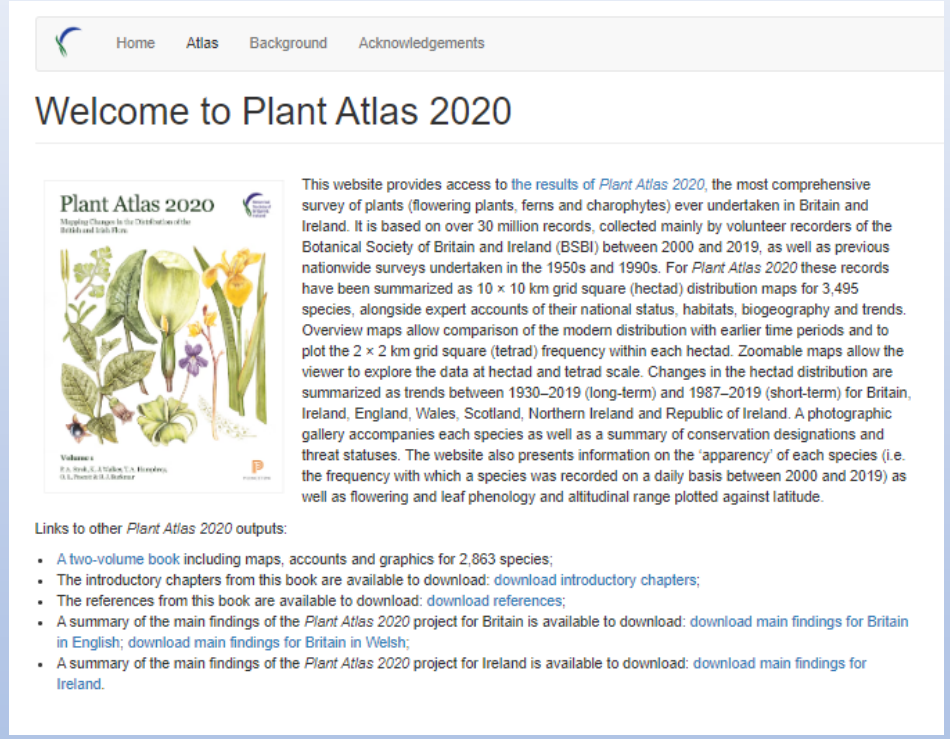




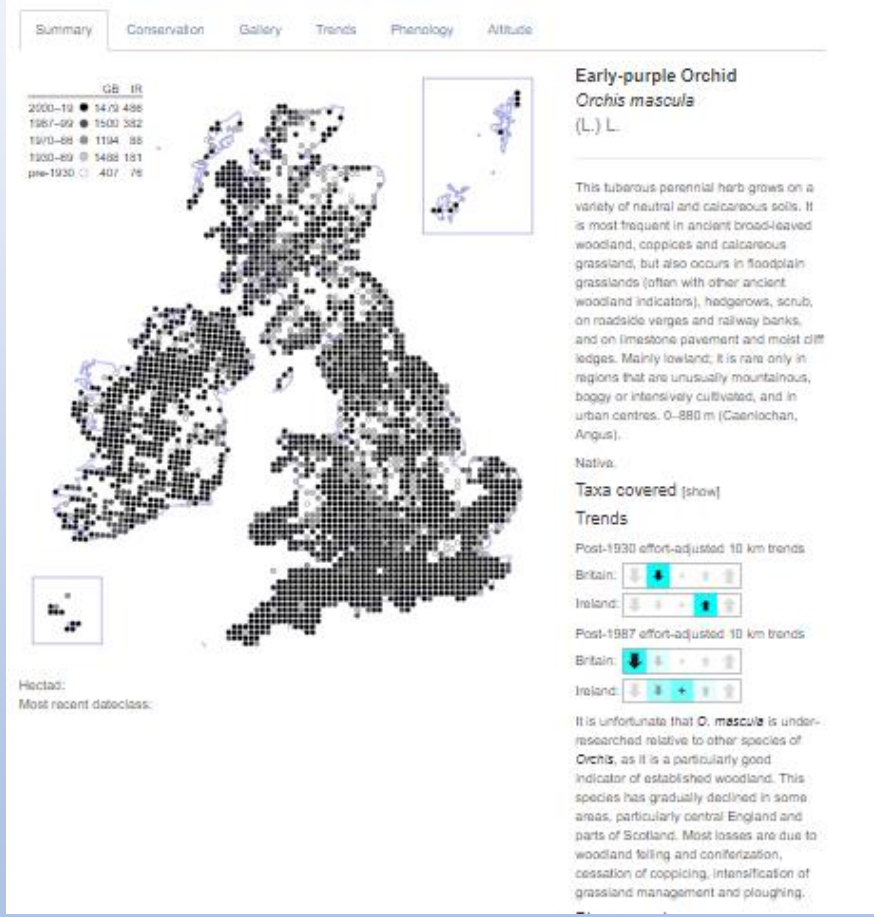
# Biodiversity loss

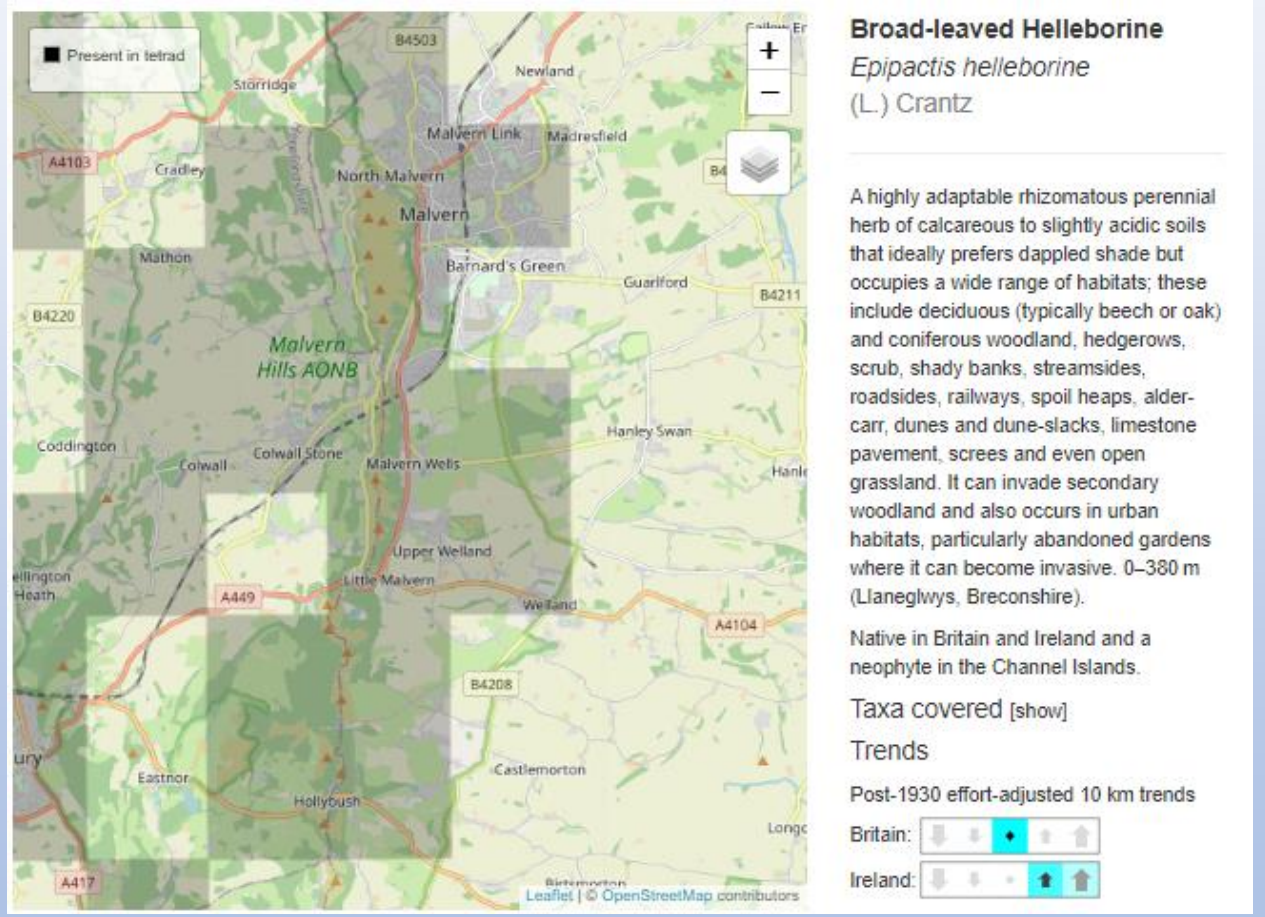
- 53% of our native plants have declined (BSBI plant atlas)
- c5% of our lowland wildflower meadows left
- c15% of lowland heathland left
- c20% of wildflower rich chalk and limestone downland left
- 95% reduction in actively coppiced woodlands

## Data - BSBI citizen science 1962, 2002, 2020 online



# BSBI Plant Atlas 2020 (pub 2023)



# Conservation

- Habitat creation and restoration
- Nature reserves and protected sites
- Targeted species action
- Species Recovery Funding (Govt) support for some orchid plans
- Kew successful in tissue culture to grow ladies' slipper orchid



STATUTORY INSTRUMENTS

**2023 No. 91**

ENVIRONMENTAL PROTECTION, ENGLAND

The Environmental Targets (Biodiversity) (England) Regulations 2023

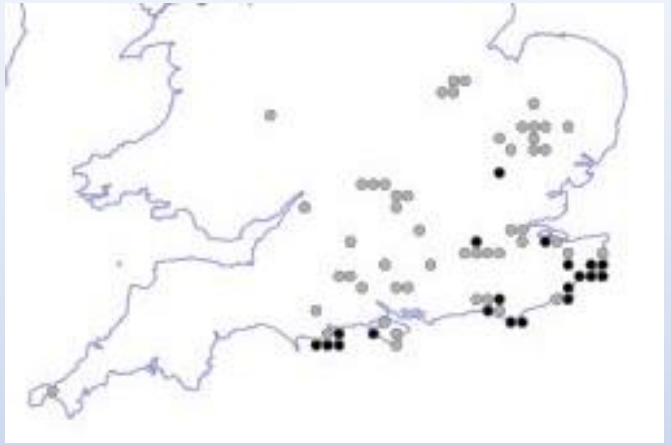
| | |
|---|---|
| *Made* | *29th January 2023* |
| *Coming into force* | *30th January 2023* |

The long-term biodiversity target for the restoration or creation of wildlife-rich habitat is that on or after the day these Regulations come into force, in excess of 500,000 hectares of a range of wildlife-rich habitats are to be restored or created by 31st December 2042.

# Climate change - early spider orchid



- Short lived – half-life of 2.25 years (some plants lived >20 years)
- Historic losses – ploughing etc
- Appropriate management critical
- Sexual reproduction - <15% set seed
- Flowering 2 weeks earlier but has not expanded north – why?
- Warming may disrupt bee-plant life cycle timings.

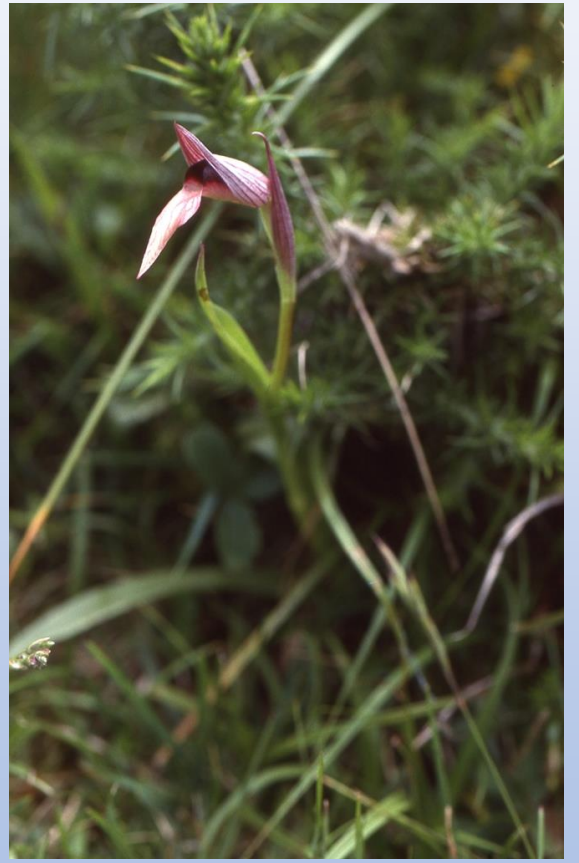


| | |
|---|---|
| Dark dots | 2000-2019 |
| Grey dots | Earlier records |

# Climate change – newcomers

- Sawfly orchid – Dorset 2014.
- Tongue orchid – several sites Essex and a green roof in City of London!
- Some orchids may expand northwards





# Organisations to join

Botanical Society of Britain & Ireland

Plantlife




Worcestershire Wildlife Trust

- BSBI Atlas and species accounts online.
- National conservation charity dedicated to plants.
- Growing British orchids and seeing them in the wild.
- Local wildlife charity with nature reserves many orchid rich.

# Places to go

- Worcestershire – meadows
- Herefordshire – Marcle ridge, Haugh Wood
- Cotswolds
- Wales for sand dunes
- Classics - Chilterns, South Downs, Kent, Cumbria, Yorks
- Mainland Europe
- Castlemorton – 9 or 11 species?






# Castlemorton orchids

| Grassland | | Woodland |
|---|---|---|
| Heath spotted orchid | Twayblade | Violet helleborine |
| Common spotted orchid | Early purple orchid | Broad leaved helleborine |
| Southern marsh orchid | | |
| Green winged orchid | | |
| Autumn ladies' tresses | | |
| | | |
| Bee orchid? | | |
| Pyramidal orchid? | | **9-11 species** |

Thank you

Any questions