Upland hay meadow restoration in the North Pennines AONB

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Introduction

Upland hay meadows

Traditional management practices

Upland hay meadow restoration:
• Hay-Time
• Nectarworks
• Plugging the Gaps
• Tees-Swale: naturally connected
Where is the North Pennines AONB?
What is an upland hay meadow?
Traditional management practices

Spring grazing

‘Shut-up’ period

15th July
Haytimning cut date

Aftermath grazing with cattle

Some autumn grazing with sheep

Farmyard manure applications
Silage making rather than hay – quicker, earlier cutting times
Adding chemical fertilisers rather than farmyard manure
Faster machines, faster cutting times, greater compaction
Uniform cutting times
Species-rich upland hay meadows

The Big Five!
- Wood crane’s-bill
- Melancholy thistle
- Lady’s-mantles
- Great burnet
- Globeflower
Flower-rich meadows, good for bumblebees

Meadow buttercup
Sweet vernal grass
Yellow rattle
Red clover
Eyebright
Hay-Time project 2006 – 2012
Botanical surveys of upland hay meadows

97% of flower-rich grasslands have disappeared across the UK

900ha species–rich meadows left in the North Pennines (40% of what’s left)

Surveyed over 1,200 upland hay meadows = 1000 ha

Found that species-rich meadows are rare (<100 across North Pennines) = 110ha

200+ are good for bumblebees = 250ha

Floristic diversity is declining with intensive farming
Seed harvesting and spreading
Seed was spread on 93 meadows = 236 hectares
Adding seed has been successful!

- All meadows have had baseline surveys and monitored after seed addition
- Number of species increased by an average of three
- Positive indicator species increased in 87% of meadows

Wildflowers:
  - Annuals:
    - Yellow-rattle
    - Lesser trefoil
    - Eyebright
    - Changing forget-me-not

Perennials:
  - Red clover
  - Ribwort plantain
  - Meadow buttercup
  - Pignut

INCREASED!

Where’s “The Big Five”?
Nectarworks project; March 2013 – August 2017

How important are flower-rich banks?

- 117 flower-rich banks surveyed and monitored
- Walk along bottom then top of bank
- Record all plant species
- Habitat maps
Diversity of flower-rich banks

- Flower-rich
- Wet mires
- Wet and dry grasslands
- Acid grassland
- Limestone grassland
- Calcareous flushes
- Teesdale assemblage
- Riverbanks
- Road verges
Where are the Big Five?

**Bar Chart**

- **Y-axis**: Number of quadrats recorded
- **X-axis**: Bank vs. Meadow
- **Species**: Lady's-mantle, Melancholy thistle, Wood crane's-bill, Great burnet, Globeflower

- **Lady's-mantle**: Bank: 18, Meadow: 6
- **Melancholy thistle**: Bank: 5, Meadow: 5
- **Wood crane's-bill**: Bank: 24, Meadow: 1
- **Great burnet**: Bank: 26, Meadow: 2
- **Globeflower**: Bank: 25, Meadow: 8

Legend:
- **Bank**
- **Meadow**
Unique machine called ‘Banksy’

- New machine designed by contractors
- Spread seed onto 39 meadows = 132 hectares
- Focus on THE BIG FIVE
- Monitoring summer 2016 and 2017; 5 – 6 plants recorded in each meadow.
Plugging the Gaps!

April 2017 – April 2019

A hands-on community project to restore flower-rich areas

Over 140 people participated

12 Seed collecting workshops

14 Seed sowing workshops
Seed sorting and sowing workshops

Seeds sown into a mixture of peat-free compost, grit and sand.

Bigger pots for deep-rooted perennial plants

30 volunteers looked after 400 trays during the winter 2017/18
Volunteers built a Wildflower nursery in Allendale, April 2018

Shed
Polytunnel
Watering system
Growing beds
Rabbit-proof fencing
Seating area
Looking after seedlings and plug plants

Wildflower nursery warden team

Watering every day

Weeding

Pricking out

Potting on

Betony

Lady’s-mantle

Great burnet

Wood crane’s-bill
Plug planting in meadows and community areas

Plug planting days throughout Sept – Nov 2018

Plug plants establish well at the edges of meadows

12,300 plug plants

28 meadows and community sites
Future plans
Tees-Swale: naturally connected

Development, until Feb 2020
Delivery, Sept 2020 – Sept 2025

Deep engagement with the farmers and landowners

Peer-to-peer learning

Training for farmers and contractors

Farmer/conservationist knowledge-exchange

Ecosystem services and natural capital

Working with volunteers
More, bigger, better, joined: Landscape-scale habitat restoration

Mosaics of habitats

Meadows
Banks
Mires
Blanket bogs
Peatlands
Heather moorlands
Rush pastures
Woodlands
Sikes
Rivers

Making space for nature, Prof. Sir John Lawton
Many thanks to National Lottery Heritage Fund and National Lottery players

Thanks to the huge numbers of helpful volunteers

Any Questions?

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