



# **The particular challenges of restoring meadows on floodplains**

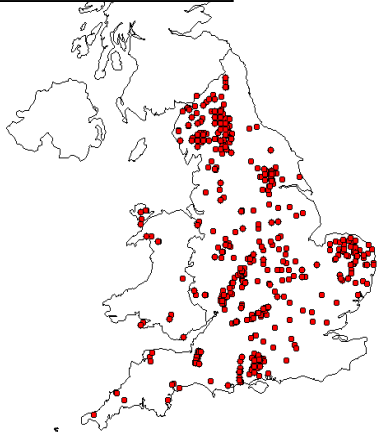
**Emma Rothero and Irina Tatarenko**



# Floodplains are the prime lands for the most productive and species-rich hay meadows

Traditionally managed Lammas meadows, Hams, Ings

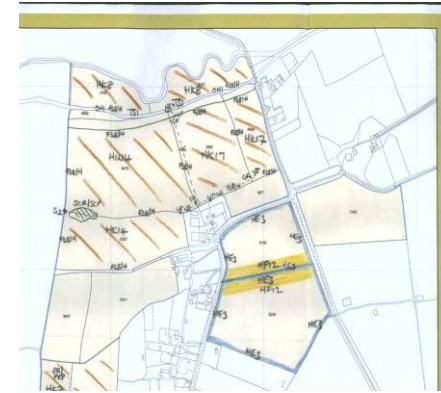
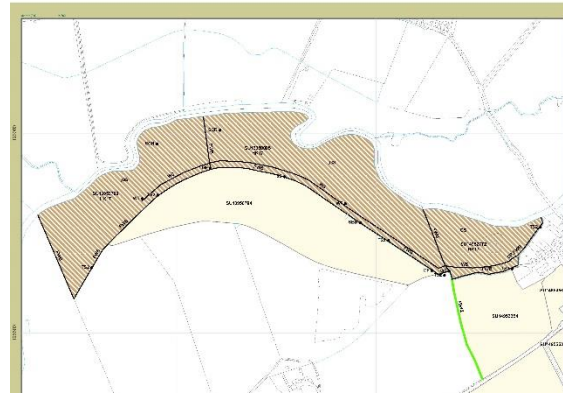
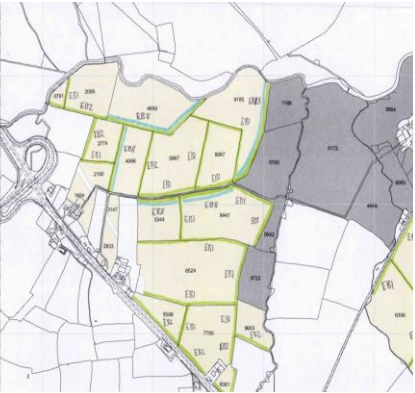
2980 ha remain  
1350 ha MG4  
1160 ha MG8  
500 ha\* the rest





**98% of meadows were lost in 20<sup>th</sup> century**

**How much has been restored?**



**FMP project – 2015-2018**

**Visit restoration sites, survey,**

**small capital fund available**

**John Ellerman Foundation**



# The great range of restoration projects differ by:

- Management history prior restoration
- Restoration technique
- Restoration success

# Floodplain meadow ecosystem

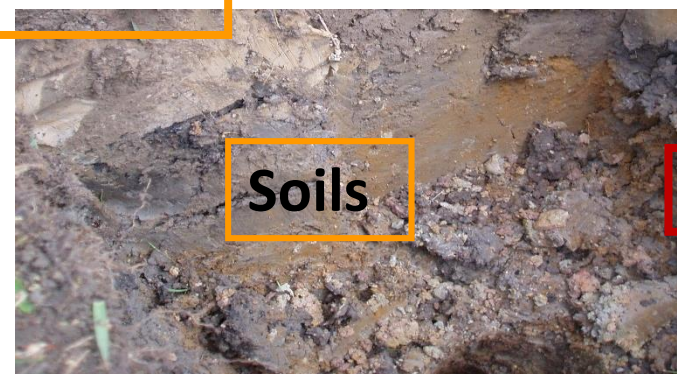


Nesting birds

Pollinators

Grazers

Management



Worms

Microbes

Fungi



**Soil structure is of great importance...**

**... but often neglected**

Jean Widdows





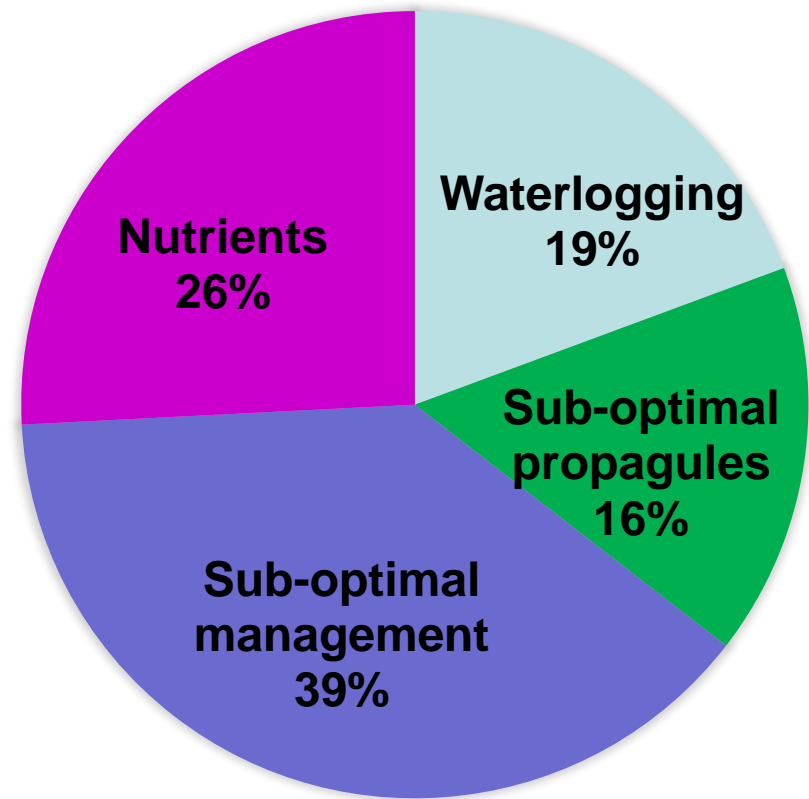
## In 2016, visited 52 restoration fields = 222.36 ha

Nutrients e.g. high soil P  
resulting in dominance of few  
species

Waterlogging e.g. flooded after  
sown

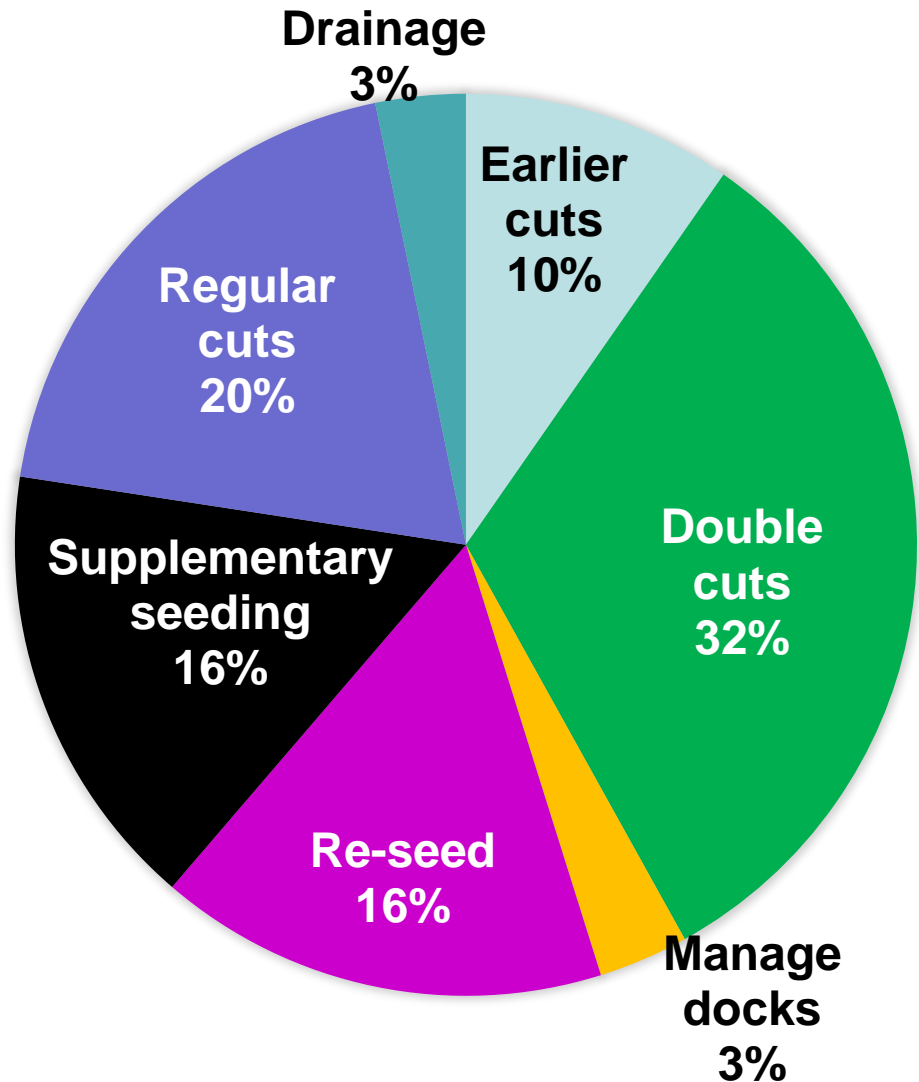
Sub-opt management e.g.  
sown too deep, insufficient  
bare earth, not annual hay cut

Sub-opt propagules e.g. some  
harder to germinate species  
not germinated

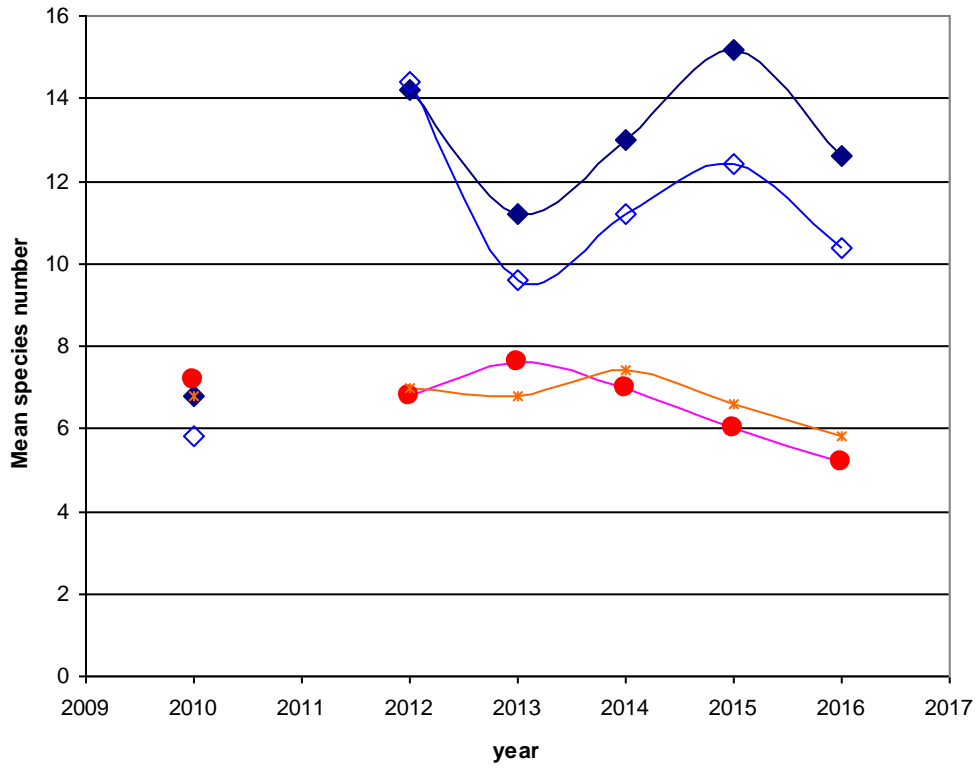




**Management advice given to 31 floodplain meadow restoration sites in England in 2016**



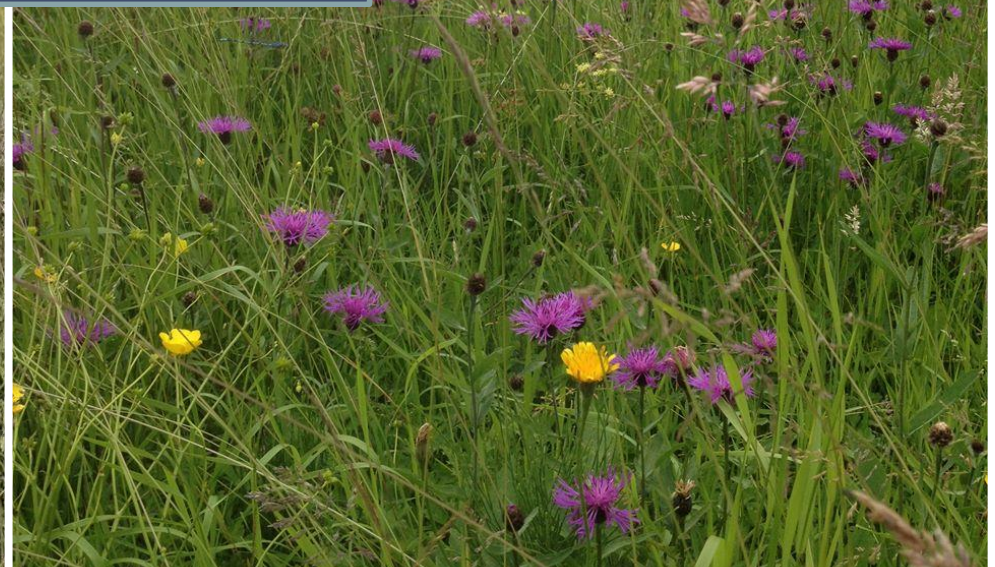
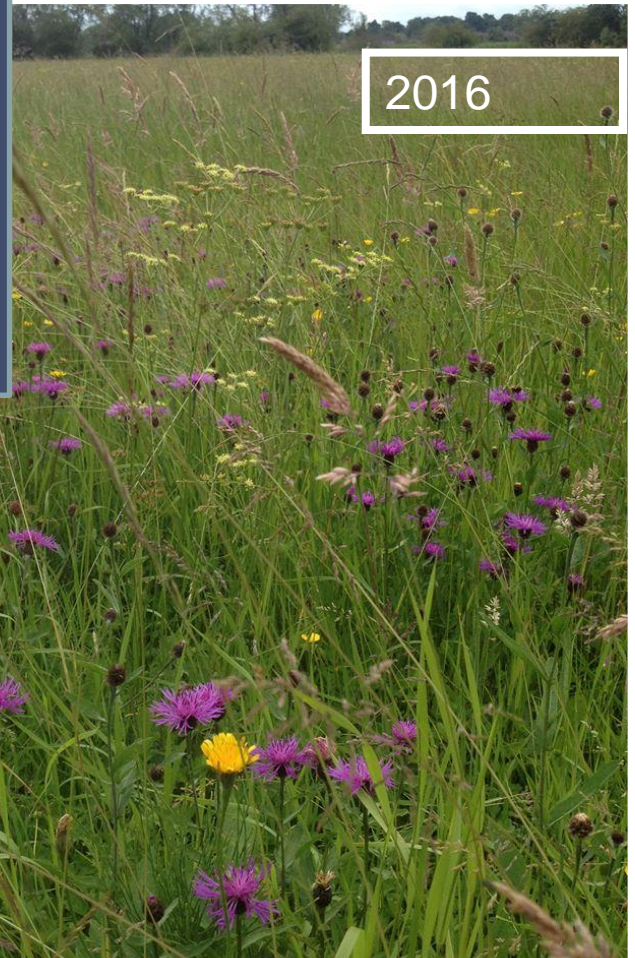




2015



2016

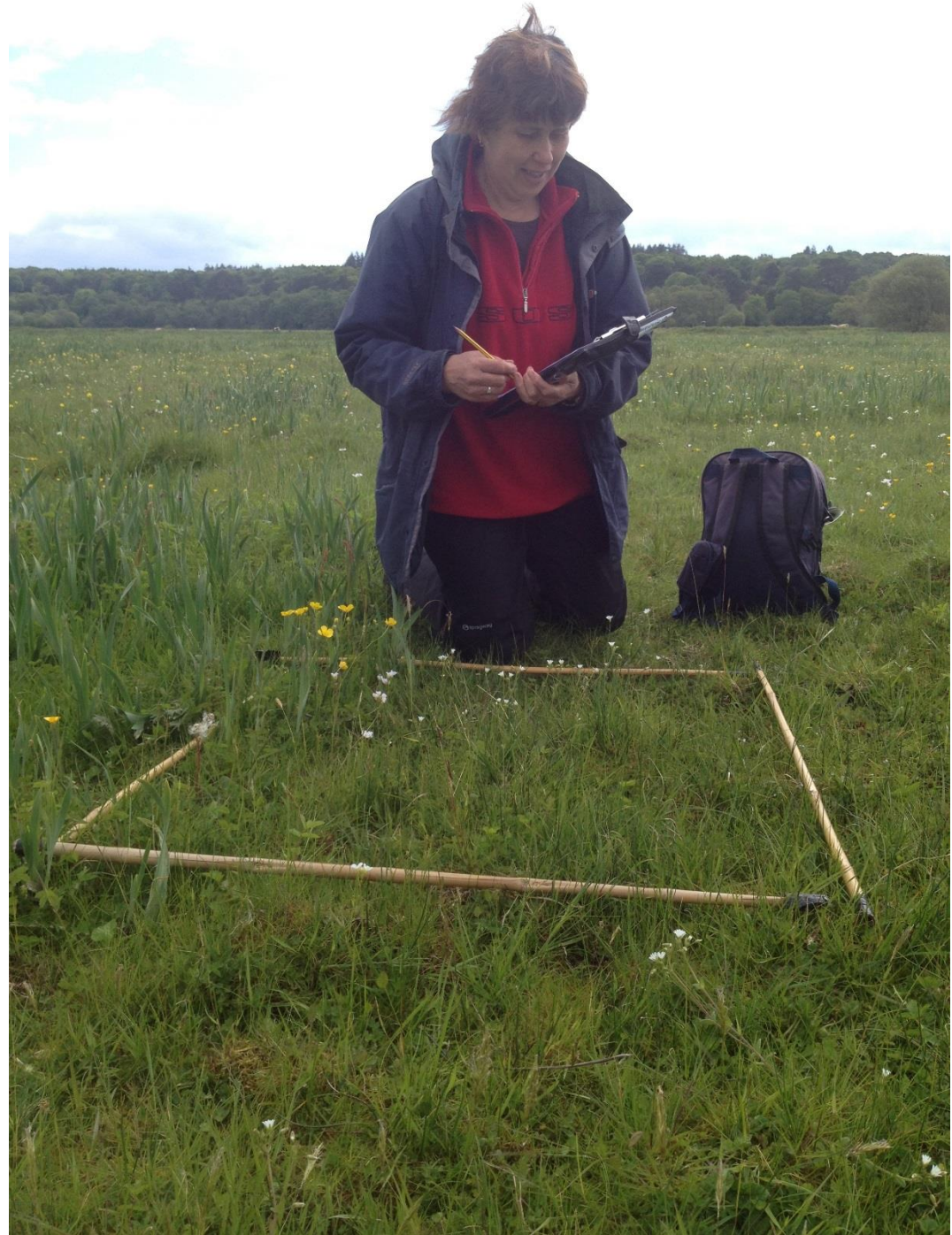


## Sub-optimal management

Was - nettle and reed neglected  
rank grassland on peat

Conservation grazing re-instated -  
15 yrs ago

2016      MG8  
            21-23 sp/m<sup>2</sup>



# Soil compaction

If evidence (plants) indicates compaction, soil pit.

If compacted – drainage, FYM, sub-soiler, hay cut



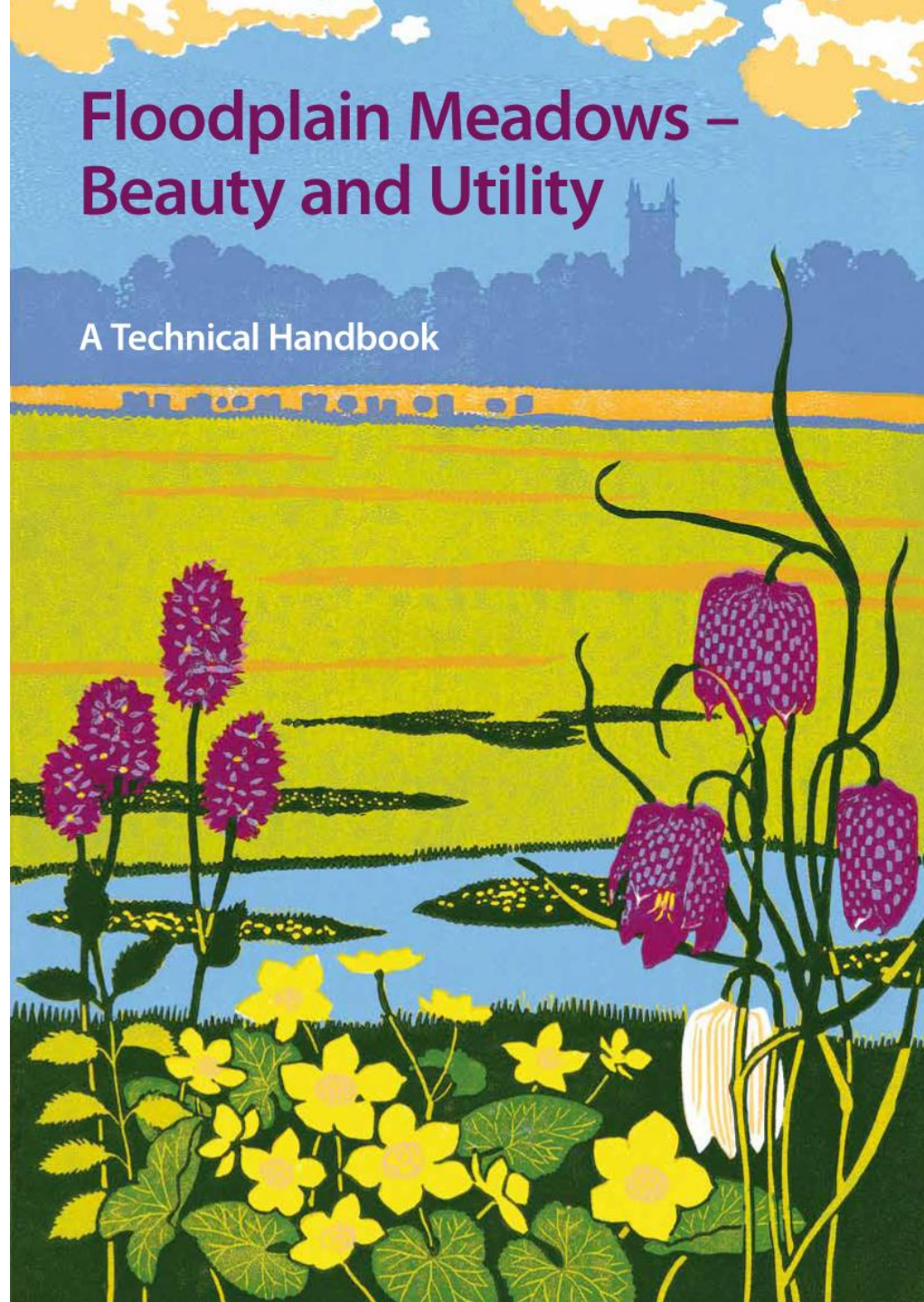
## The value of (even basic) pre-restoration information

	Ideal range for restoration/creation	If not...
<b>Soil fertility</b>	5-25 mg/l P	Two hay cuts a year over a number of years will reduce P levels.
<b>Soil pH</b>	pH > 5.5	Look at flood regime. Look elsewhere.
<b>Soil water levels and flooding</b>	Roughly matching those described in FMP handbook for (e.g.) MG4 or MG8 type community.	Look at internal drainage grips and management of structures
<b>Soil texture and structure</b>	Good soil structure (not compacted), soil profile indicates fluctuating water levels in appropriate zone.	If soil is compacted, may not be worth attempting restoration.

# Floodplain Meadows Partnership



[www.floodplain meadows.org.uk](http://www.floodplain meadows.org.uk)



# Floodplain Meadows – Beauty and Utility

A Technical Handbook