

Managing the Seed Resource from Native Grasslands

NATURAL
ENGLAND



Overview

- The importance of diversity in grassland
- Grassland management spectrum
- Local provenance?
- Seeds and where they come from
- Doing your own seed
- Legislation



Diversity

NATURAL
ENGLAND



The Spectrum of Grassland Management

NATURAL
ENGLAND



Temporary
leys



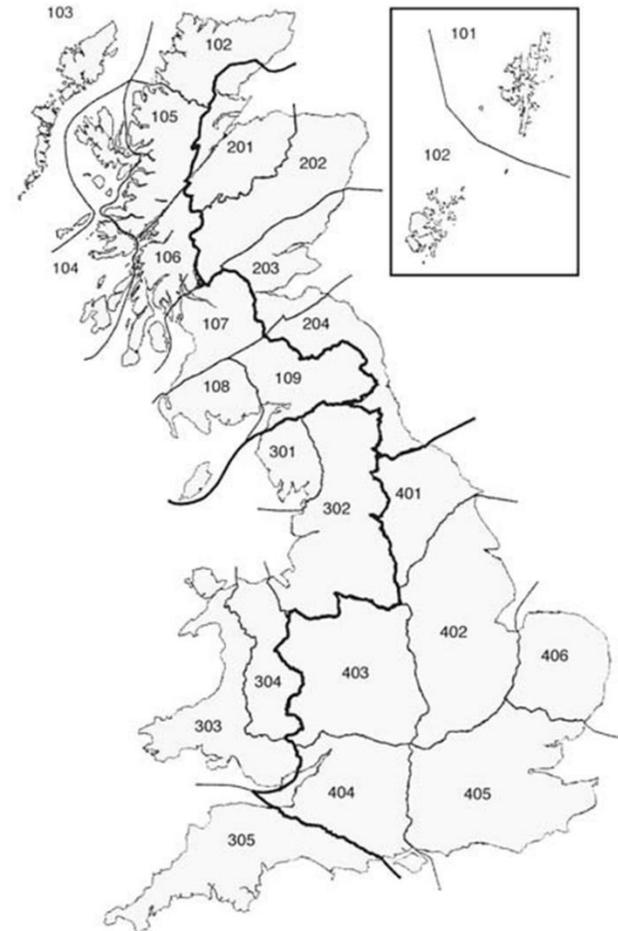
Improved
Permanent



“Natural”
Grassland

Management

Is local provenance important in habitat creation?

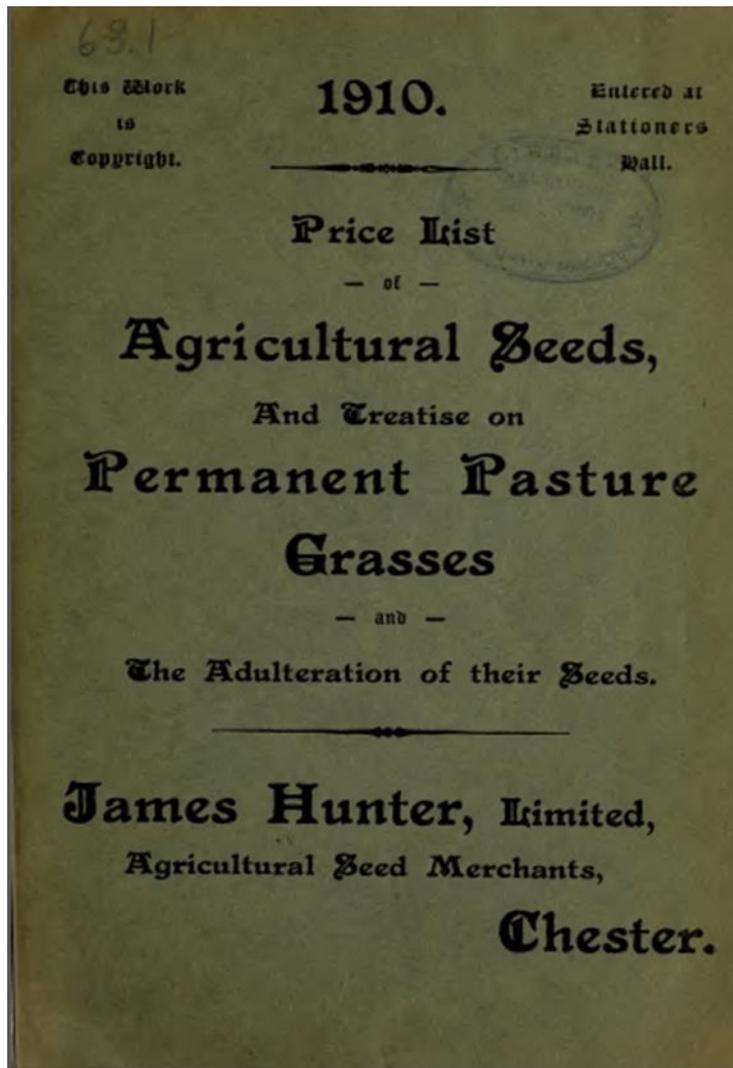


Adaptive approach

- Local populations may contain low genetic variability for the restored populations to adapt to climate change.
- Mix seeds from various sources to increase genetic variability and adaptive potential
- Use seeds from populations that have a similar climate as predicted for the locality

History of seed production and marketing

NATURAL
ENGLAND



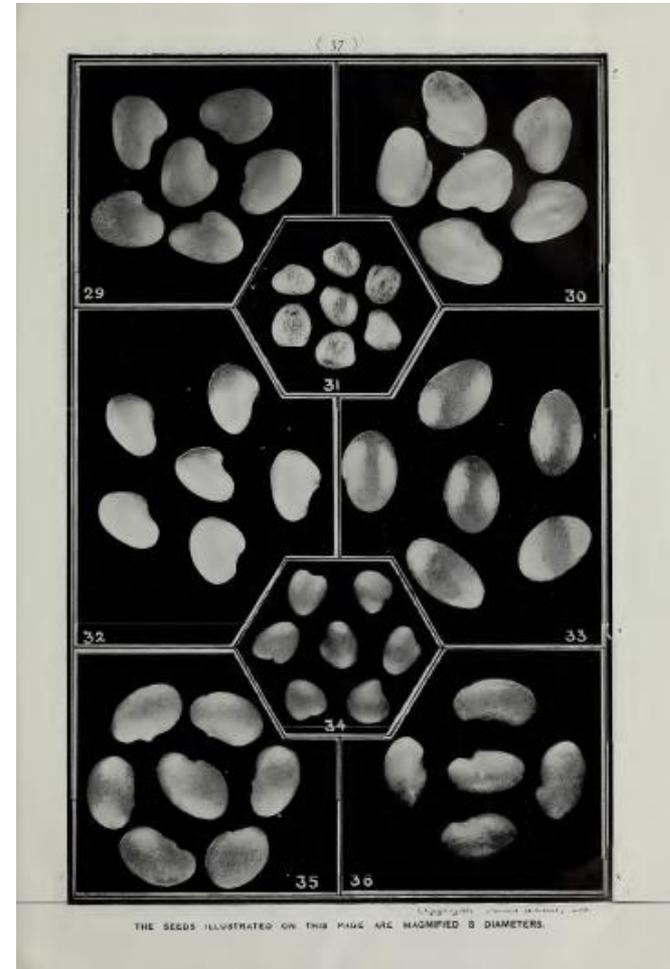
Marketed grasses



- Cocksfoot
- Meadow fescue
- Tall fescue
- Meadow Foxtail
- Timothy
- Tall oat grass
- Golden oat grass
- Crested dogstail
- Hard fescue
- Sheeps fescue
- Rough stalked meadow grass
- Smooth stalked meadow grass
- Wood meadow grass
- Sweet vernal grass
- Italian ryegrass
- Perennial ryegrass

Legumes

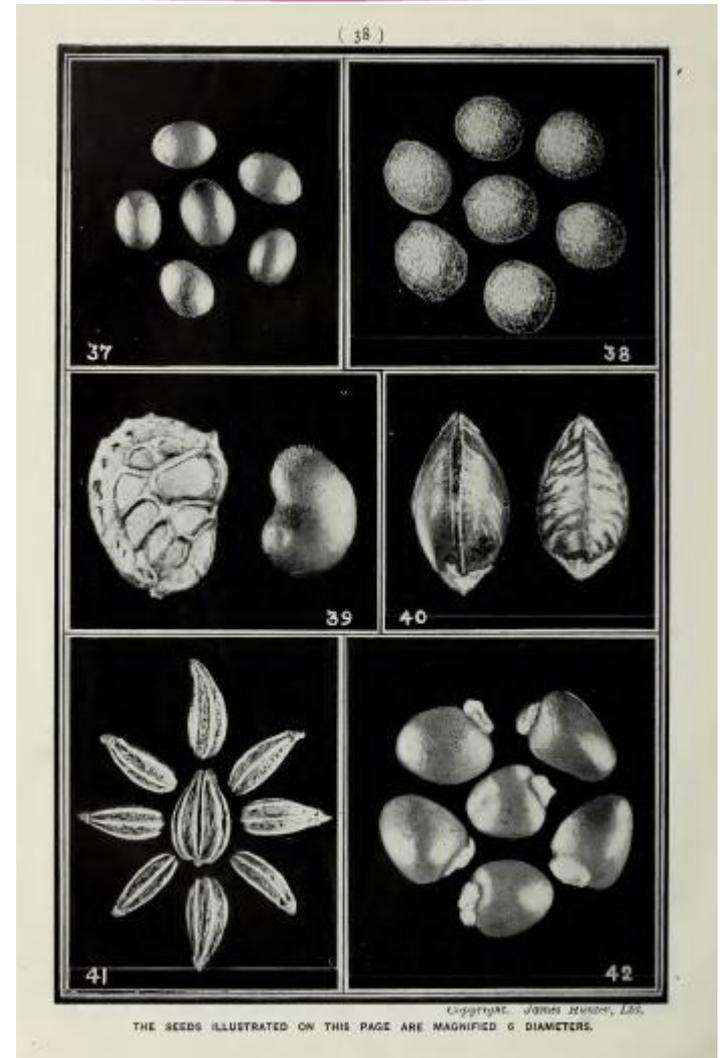
- Red clover
- Perennial red clover
- Late flowering red clover
- White or “Dutch” clover
- Wild white clover
- Alsike or Swedish clover
- Trefoil or yellow clover
- Crimson Clover
- Kidney vetch
- Sainfoin
- Lucern



Herbs

- Chicory
- Burnet
- Yarrow
- Parsley

No Plantain (Ribgrass) – “Ribgrass is only a weed and should never be sown for permanent pasture except perhaps on poor, light or sandy soils”



History of seed importation

- In 1712, Blundell bought 230lbs of grass seed from London.
- In 1754, a Somerset farmer was producing and selling red clover seed.
- In 1780, 9,000 cwt of clover seed was imported into the UK (900,000 pounds). In 1800, 44,000 cwt was imported (4,400,000 pounds).



Comments on Ryegrass

- “It makes an excellent show the first year, but after that time, and more particularly on poor light soils, it begins to deteriorate, and gradually disappears during the second and third years”.
- “Being a shallow-rooted grass the Perennial Rye-grass soon suffers from drought....preference should be given to Cocksfoot.



Comments on Ryegrass

- “Ray-grass still continues to be the only grass whose seed can be purchased for the purpose of laying down meadow and pasture land and how inadequate that grass is, for such a purpose, is known to every intelligent farmer” (1805).
- “most probably it owes its introduction to being a common grass whose seeds are easily collected.”



Meadow Restoration - Sources of seed?



- Natural regeneration -from the soil seed bank or from colonisation
- Directly harvested mixtures - brush harvested seed or green hay
- Mixtures or individual species from field cropped seed

Harvesting from “Native” species-rich grasslands

NATURAL
ENGLAND

- Most species-rich grasslands contain some species (mostly grasses and some legumes) that are also on the prescribed National List of Varieties
- This is to assure identity validation, germination, purity, etc. to build customer confidence and to support trade

Plant Varieties and Seeds Gazette

Special Edition of Plant Breeders' Rights
and the UK National Lists

Eastbrook
Shaftesbury Road
Cambridge
CB2 8DR

Seed regulations

- Fodder Plant Seed (England) Regulations 2002
- Any seed of certain grass and legume species must go through a variety testing procedure and be entered on the National List of Varieties (species not appearing on the prescribed lists can be marketed without certification)



Seeds requiring certification before you can market them



- The Seed Marketing Regulations 2011 – Schedule 1

Fine grasses:

velvet bent, brown top, red top, creeping bent grass, sheep's fescue, red fescue, chewings fescue, hard fescue, annual meadowgrass, smooth-stalked meadowgrass, rough-stalked meadowgrass

Fodder grasses:

tall oatgrass, cocksfoot, tall fescue, meadow fescue, Italian ryegrass, perennial ryegrass, timothy, festulolium

Small-seeded legumes:

birdsfoot trefoil, black medick, lucerne, sainfoin, alsike clover, red clover, white clover

Seed Marketing

You're considered to be marketing seeds if you're doing any of the following:

- holding or keeping them before sale
- offering them for sale, e.g. by advertising
- giving them to someone else



Who's who?

NATURAL
ENGLAND

- Animal and Plant Health Agency (APHA)
- National Institute of Agricultural Botany (NIAB) - runs the seed certification scheme on behalf of the APHA.



Animal &
Plant Health
Agency



What is a “Preservation Mix”

- Preservation mixtures are of species and ecotypes compatible with specific natural and semi-natural habitats and intended for use in preservation of the natural environment and the conservation of plant genetic resources.



Direct Harvested Mixtures

- Brush harvester powered by two-wheel pedestrian tractor

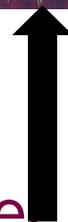


Brush Harvesting

NATURAL
ENGLAND



Brushes sweep seed
against perforated panel



Clean seed falls
through holes



- Keep a detailed collection calendar to record dates, location and field notes
- Ideally, collect throughout the ripening period over no more than 20% of the total area

Seed drying



Spread out seed on clean tarp to allow invertebrates to escape and to start drying process

Complete drying process indoors



Crop Grown Seed

NATURAL
ENGLAND



Summary



- Brush harvested seed from grasslands must follow the “Preservation Mix” regulations to be sold or given away.
- Crop grown wildflower seed does not require any certification before use or trade.
- Green hay is used as a way to avoid seed regulations, but it is not the most efficient way to move seed around.

Sowing Grasslands - Not as easy as scattering seed

NATURAL
ENGLAND

