

# The Fairfield Association



## Fairfield's Wetlands

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# Wetlands and their importance

## ***Wetland:***

*Water at or near the surface for much of the year,  
supporting aquatic species*

## ***Importance:***

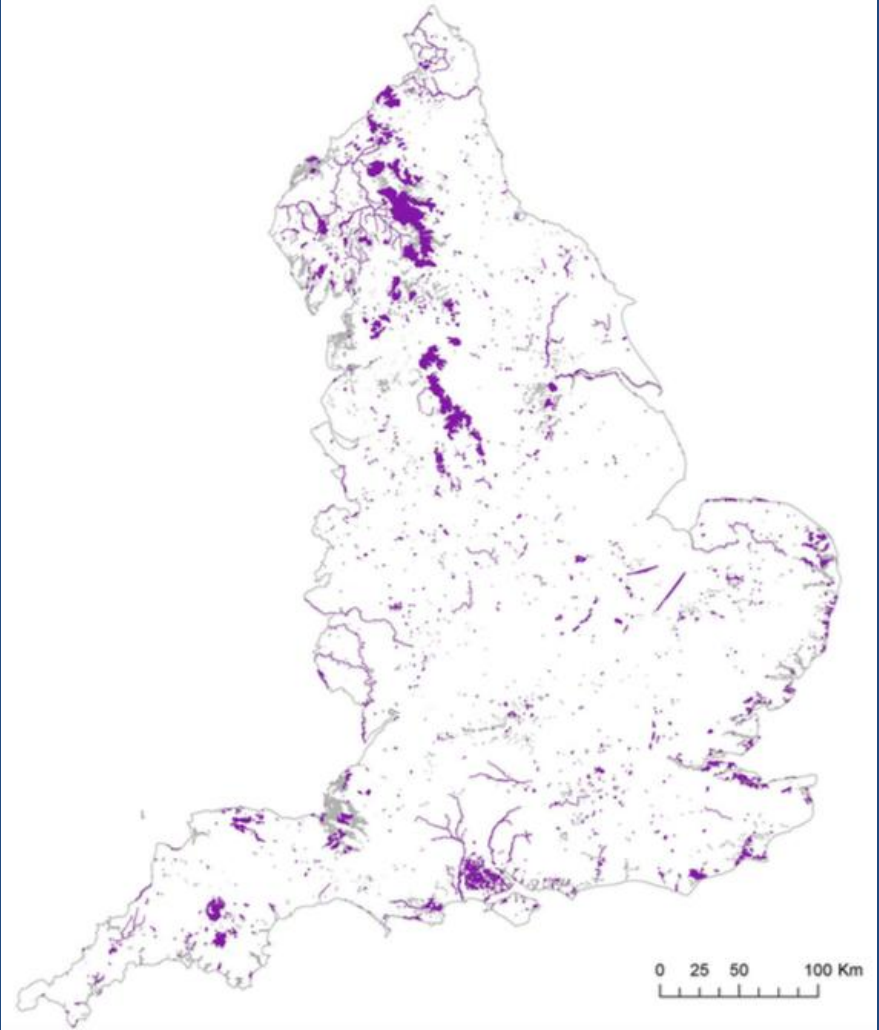
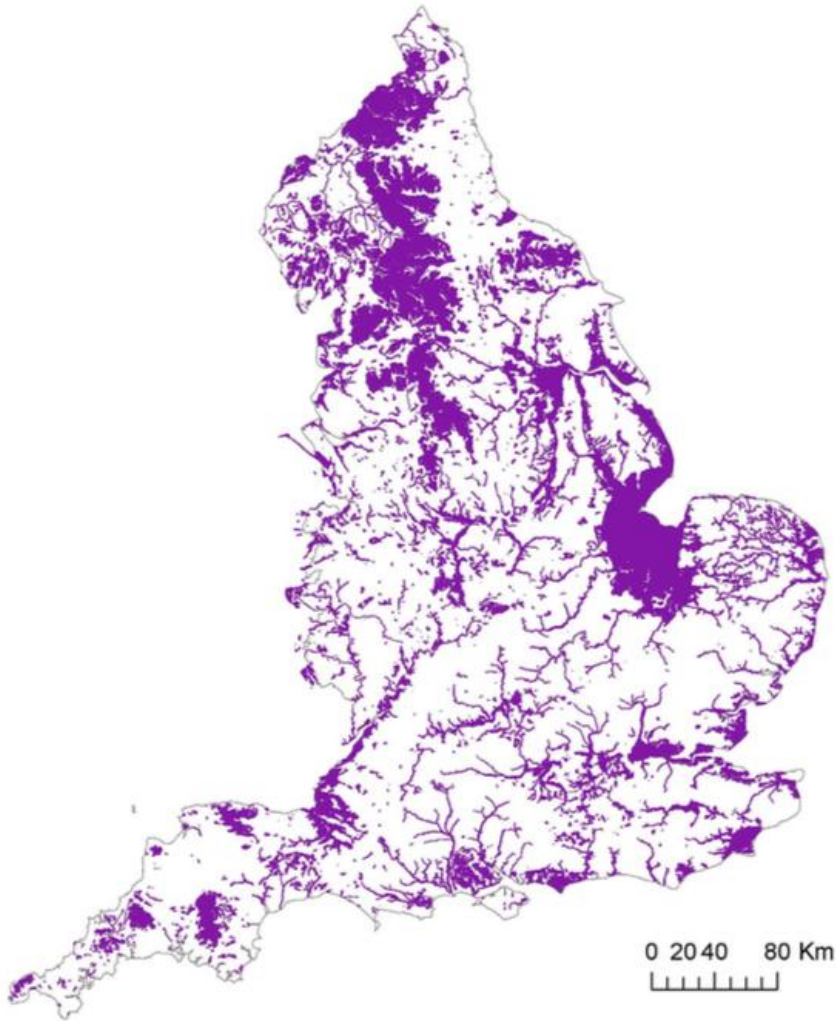
Biodiversity

Ecosystem services

- Water quality
- Water supply
- Flood control
- Urban air quality
- Carbon sink
- Human wellbeing

***Worldwide decline 65-70% during 20<sup>th</sup> century***

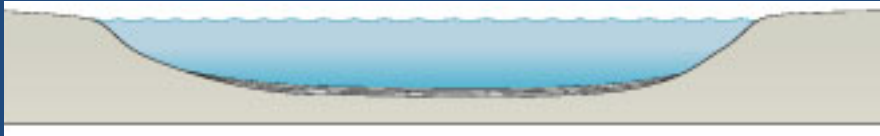
# Wetland Then and Now



# Why have we lost wetlands?

- Human intervention
  - Agricultural Drainage
  - Flood control ... flood diversion!
  - Building and development
  - Climate change
- Natural succession

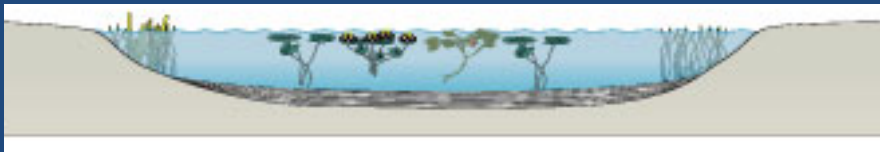
# Pond to Woodland Succession



Deep water, no plants (not enough light / nutrition)



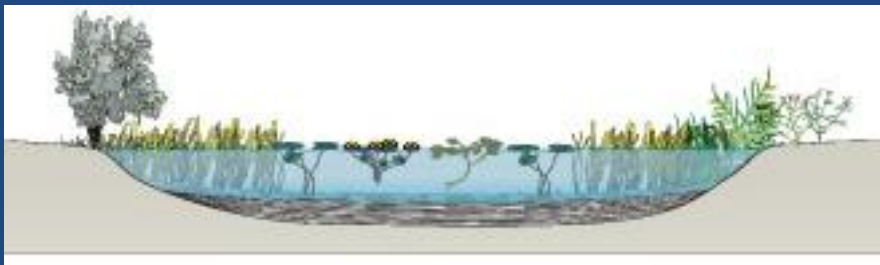
Sediments washed in, or algae bloom on surface and decay; some plants start to grow



More sediment, more plants, reeds and grasses grow in shallows



Marsh emerges at margins, reeds & grass take over more of the pond



Soil dries out at edges, trees like willow and alder establish

# Managing wetlands for nature...

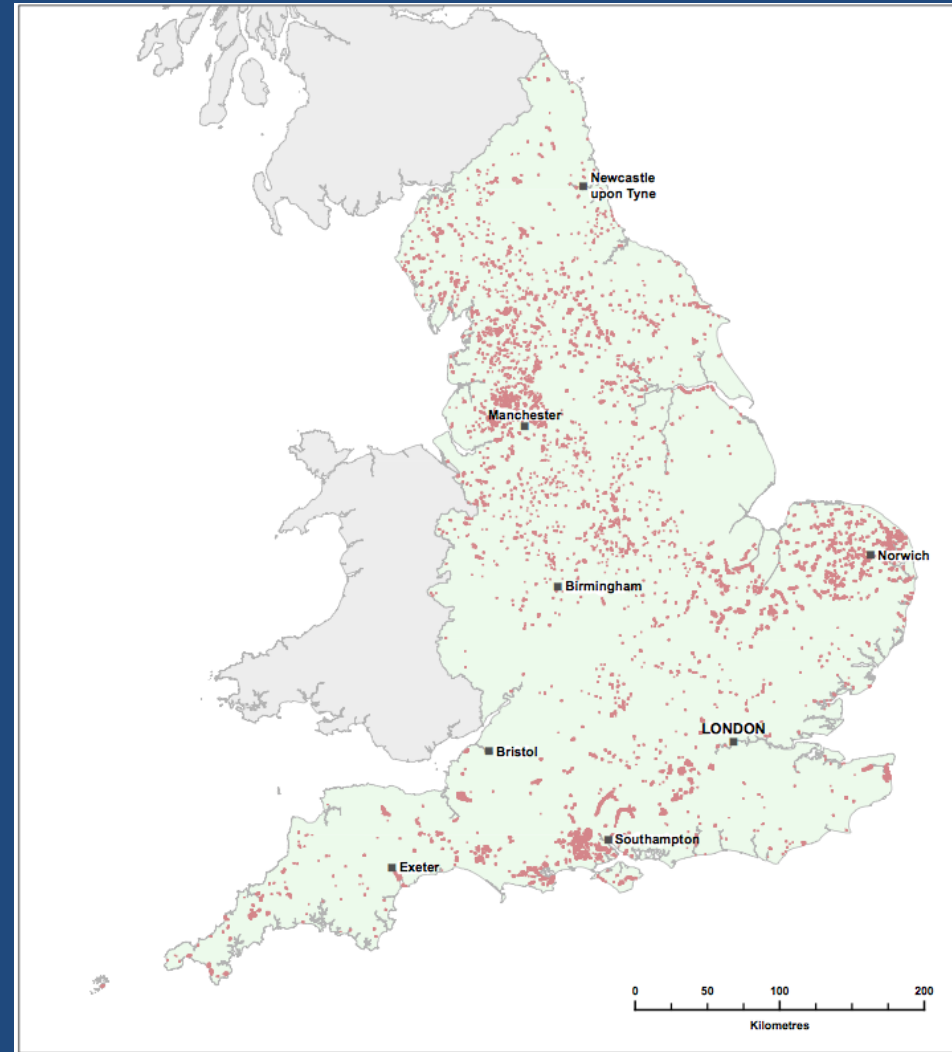
... can be a constant battle against natural processes!

# Some Important Types of Wetland

- **Fen**
- **Bog**
  - Blanket bog
  - Raised bog
- **Coastal / estuarine**
- **Carr / wet woodland**
- **Reedbed / swamp**
- **Wet meadow / wet pasture**
- **Open water**

# Fen

- Water from multiple sources (groundwater, surface run-off and river flooding, as well as rainfall)
- Water level close to the surface throughout the year
- Chemistry from acid to alkaline, nutrient from low to high





# Bog

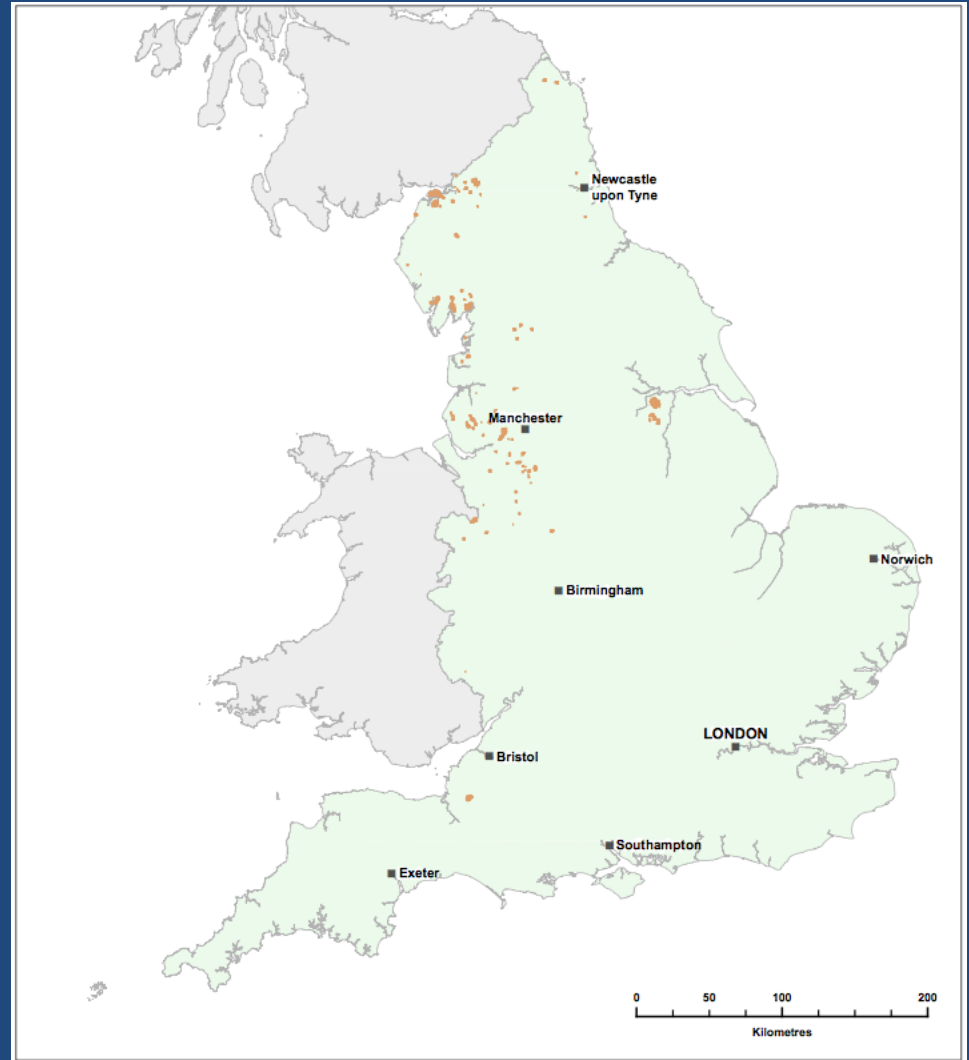
- Rain fed
- Acidic
- Low nutrient
- Sphagnum moss and acid loving plants dominate

## Blanket bog:

Upland, permanently wet including slopes

## Raised bog:

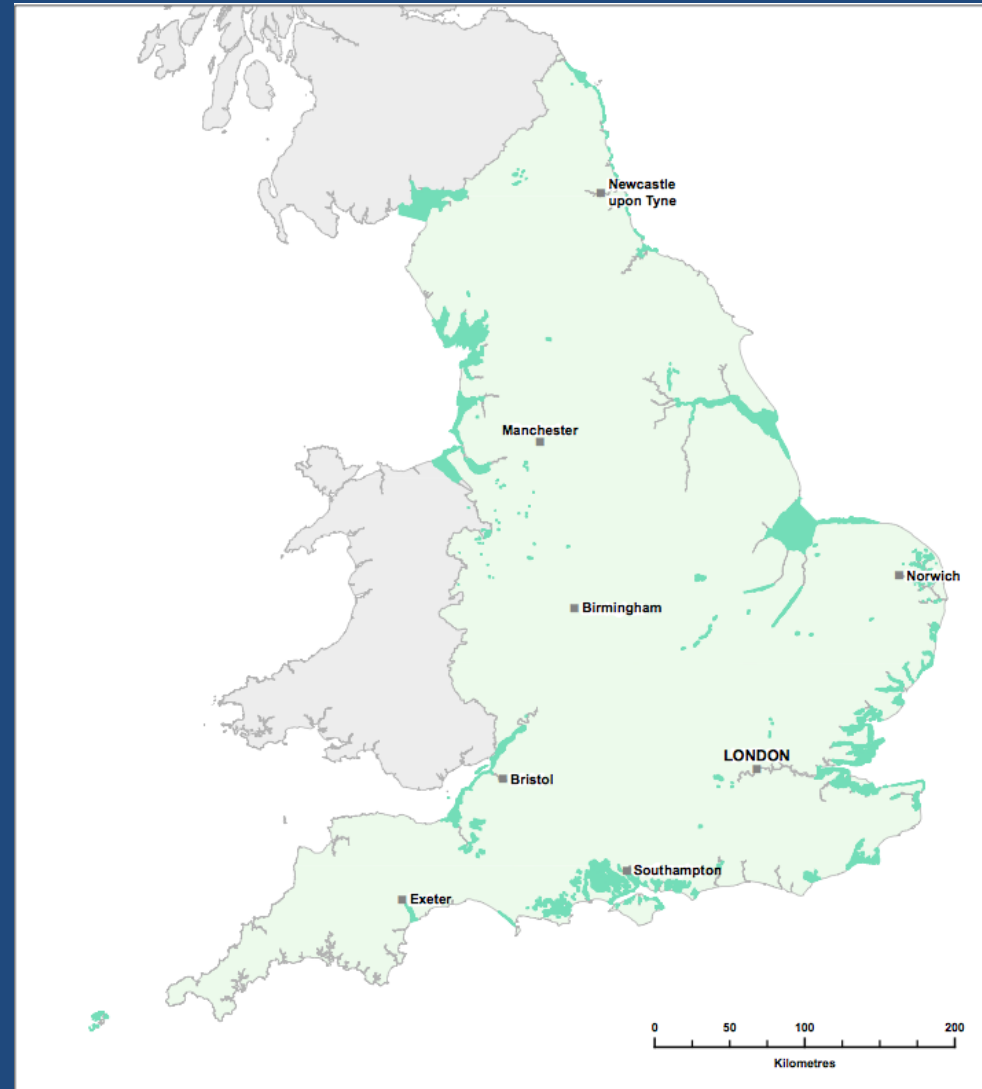
Developed by succession



Lowland raised bogs

# Coastal/Estuarian Sites

- Brackish / salty water
- Specialist plant communities
- International significance for birds
- Ramsar process



Ramsar sites

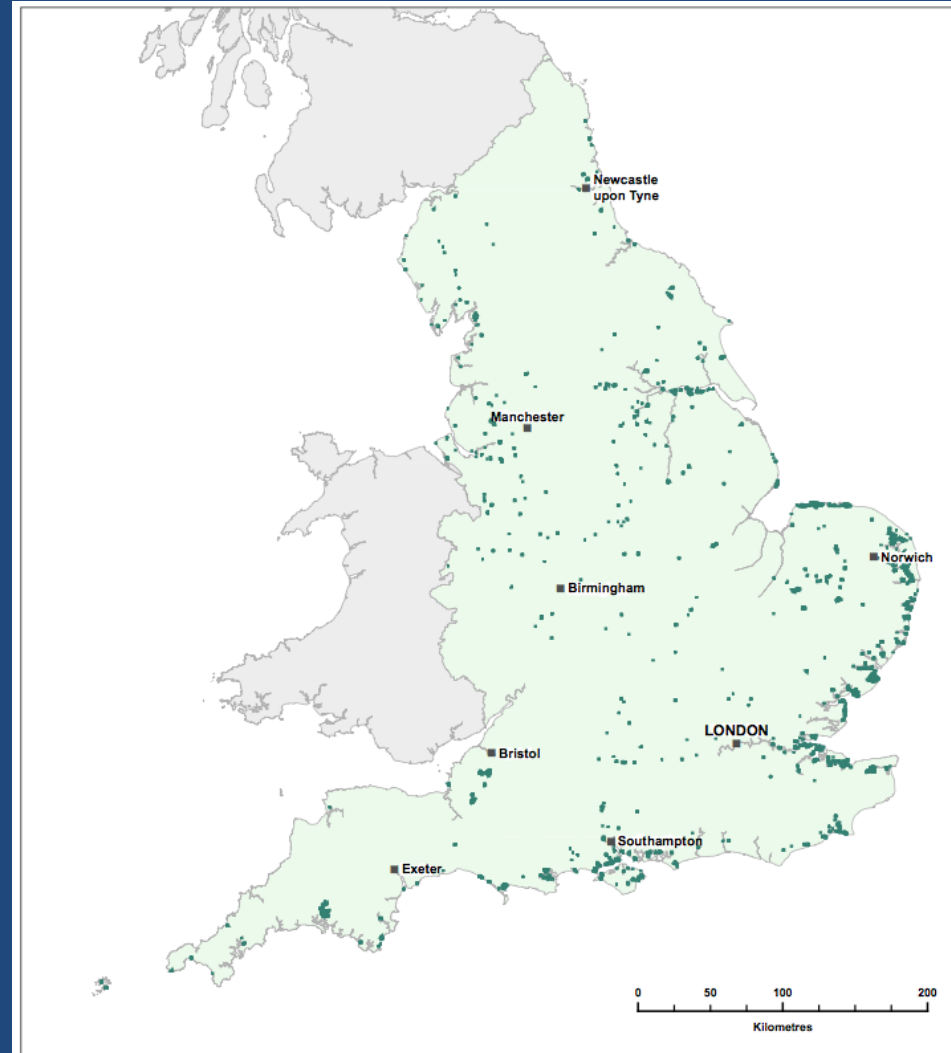
# Carr and Wet Woodland

- Develops through natural succession
- Water level above surface for most of the year.
- But drying out as trees take over.
- Eventually dominated by water tolerant trees (e.g. willow and alder). Understory may be tall herbs (e.g. water figwort), tall sedges or large tussock- forming grasses.



# Swamp and Reedbed

- Water table at or above the surface for most of the year
- Dominated by single, often tall, species e.g. Common Reed, Great Fen Sedge
- Specialist bird population



Reedbeds (England)

# Other Types of Wetland

- **Wet Meadow / Wet Pasture**
  - Subject to frequent flooding, unsuitable for hay cropping
  - Suitable for cattle grazing
  - Specialist habitat for some wading birds
- **[Open Water (streams, rivers, ponds, lakes...)]**
- **Mires, marshes, lagoons, mudflats etc etc...!**

# Variety is the Spice of Life

- Although there are some habitat specialists, e.g. bittern, snipe...
- ... many more species like a broader mosaic of habitats



# Variety is the Spice of Life

- Big or small wetlands can support a wide range of biodiversity
- Diverse landform, management, vegetation & hydrology is important

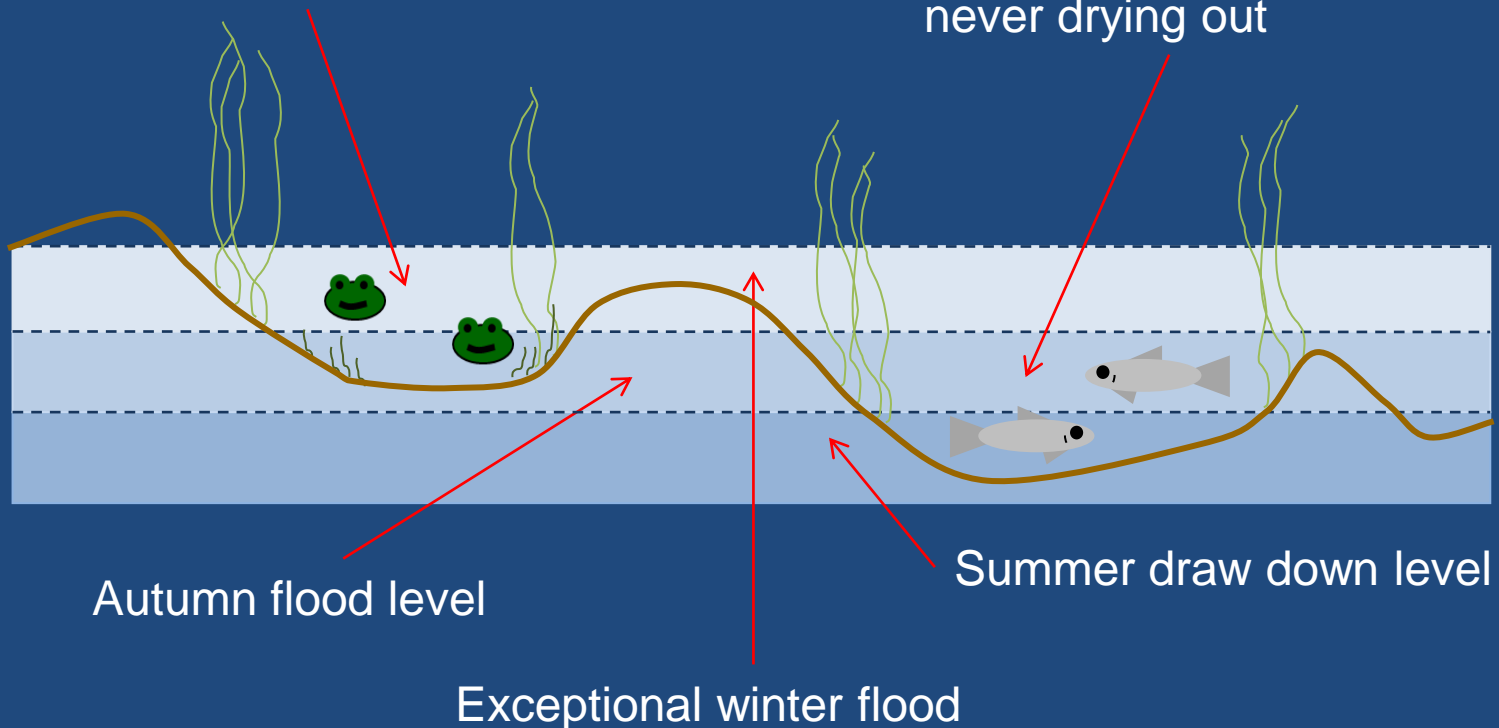


# Seasonal pools

Almost all natural wetland habitats will have fluctuating water levels

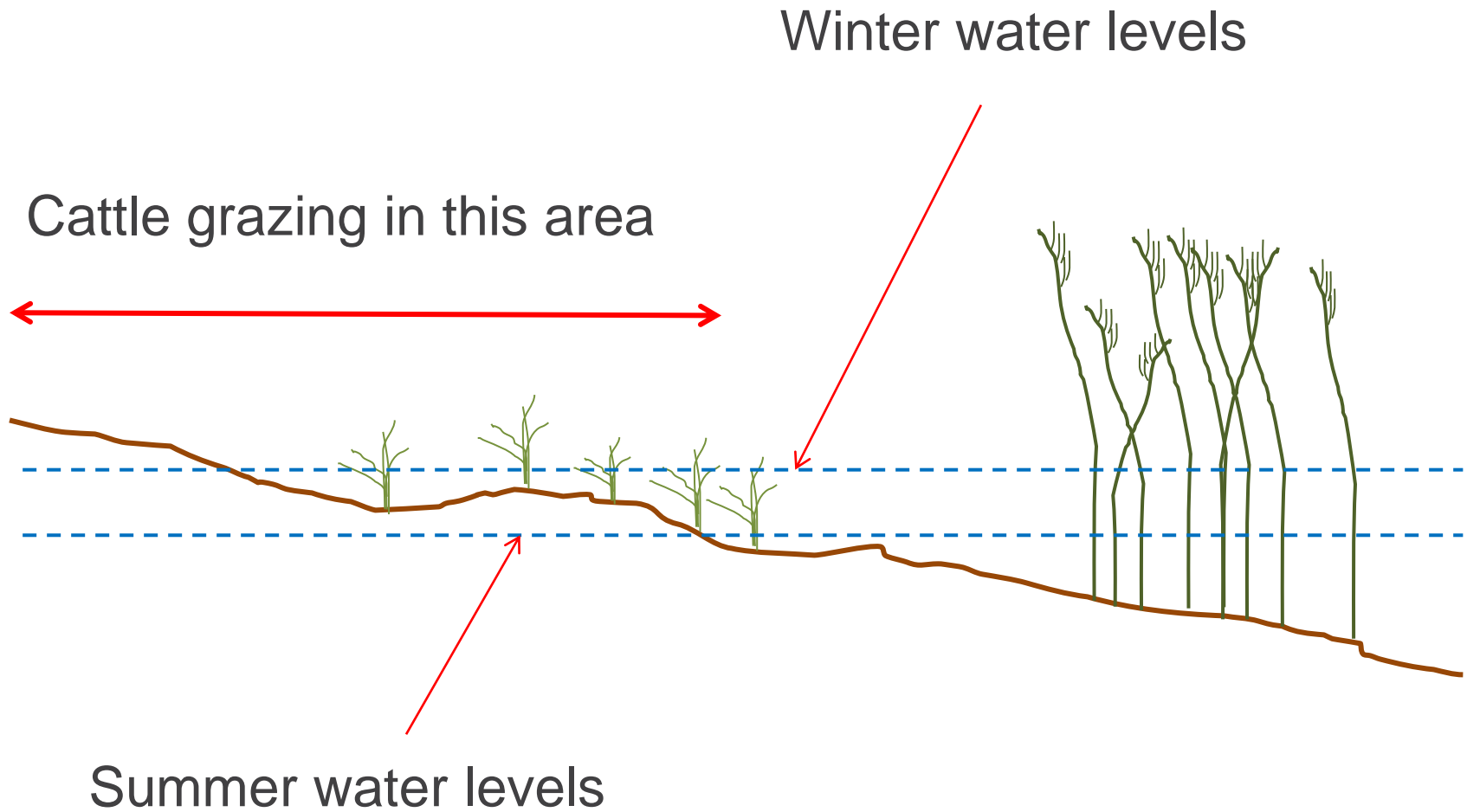
Seasonal pool -  
unconnected to the  
main area of water and  
occasionally drying out

Permanent pool –  
connected to main  
area of water and  
never drying out





# On the edge – the 'Blue Zone'



# Quiz Answers

Bittern



Snipe



# Emperor Dragonfly



# Orange Tip with Lady's Smock



# Moorhen



# Freshwater Shrimp



# Eel



# Reed Bunting

## Water Rail



# What do these species need?

- Reeds
- Open water
- Some open space around ponds
- Rush with grassy areas in between
- Some scrub  
i.e. diversity of habitats



# Practical Issues & Management





# Higher Level Stewardship – Natural England

## Big Meadow, Lower Sowerholme and West Field

- 5 – 75% standing water.
- Ground moist enough for a 6inch nail.
- Grass grazed by rare breed cattle.
- Cattle access restricted at certain times and if poaching excessive.
- No in field scrub.

# Higher Level Stewardship – Natural England

## Upper Sowerholme

- Creation of a reedbed
- 50 % reeds
- 150 stems/sq. metre
- Reeds at least 100cms before cutting
- No more than 5% scrub
- 10 – 30% open water (100cms deep)
- 50 – 95% surface water (10 – 50cms deep, Apr – Oct, 10 – 100cms deep, Nov – Mar)

# West Field

- Two scrapes
- Dries up – northern scrape has a leak so dries more quickly.
- Water source for cattle when grazing in field.
- Not used by nesting waterfowl or by overwintering birds to date.



# Flora Field

- Two ponds and wetland area.
- Permanent water.
- Northern pond leaks so holds lower level of water.
- Not used by nesting waterfowl or by overwintering birds to date.



# Upper Sowerholme

- Pond + channel (leading off from Lucy Brook)
- Establishing reedbed.
- Some use by waterfowl and overwintering birds.
- Foxes have had a den in brambles and area also used by roe deer.



# Lower Sowerholme

- Willow pond.
- Has developed a serious leak – currently under investigation.
- Not used by nesting waterfowl or by overwintering birds to date.
- Can be used as water source by cattle grazing Lower Sowerhome.



# Big Meadow – Alder Pond

- 4 ponds – Alder, Loxam's, Ashtree & Friars – all have permanent water.
- Alder Pond – 'signature' pond as visible from path.
- Others all now have open water.
- Extensive wetland area with overwintering birds and regular waterfowl nests on Alder Pond.
- Prolific amount of frogspawn in Ashtree, Loxam's and Friars Ponds.



# School Pond

- School Pond and enclosed wetland area.
- Not permanent – can dry up in summer.
- Major area for overwintering waders and nesting by wildfowl.
- Water source for cattle particularly in winter.
- Willow screen planted to help bird life.





# Hay Meadow

- Wetland area to east of meadow.
- Cromwell pond.
- Anna;s and Lucy pond and Lucy Brook on southern edge.
- Permanent ponds.
- Area used by overwintering birds and nesting waterfowl.



# Lucy Brook

- Only external water source into the reserve.
- Land drains feed into it off fields.
- Very overgrown in places.
- Currently being cleared and investigated.





# Challenges

Challenges encountered in maintaining and enhancing the wetland and reedbed for wintering waders and wildfowl.

- White Park Cattle.
- Domestic cats/ foxes/ magpies
- Various plants – soft rush, water figwort, mare's tail, aquatic grasses, brambles and bullrush.



# White Park Cattle (and Algae)

- Key feature of reserve.
- A rare breed herd.
- HLS contract agreement to use cattle to control grass growth.



- Can over-crop the soft rush, if grass in short supply.
  - Can cause poaching.
  - Can introduce “nutrients” into ponds.
  - Some ponds suffer from algal blooms as a result.
  - In summer algal growth can be prolific and unsightly.
- Currently treated with barley straw and/or removed by hand.

# Soft Rush

- In all wet areas.
- Habitat for birds & animals.
- Seeds for birds.
  
- Prolific growth – each stem produces >800 seeds.
- Cattle graze it but prefer grass.
- Needs to be controlled.
  
- Cutting
- Weed wiping
- Scything

## Traditional uses

- Medicinal
- Basket weaving
- Early candles
- Edible



# Water Figwort

- Also called water betony or fiddler.
- In most areas of wetland.
- Competes with soft rush and reeds.
- Can clog up ponds.
- Nectar source for bumblebees.
- Once thought to be a problem on the reserve.
- Not currently controlled.

## Traditional Uses

Medicinal – anti-inflammatory  
– reduces bruising  
– poultices.



# Mare's Tail (Horsetail)

- Problem in Hay Meadow and Upper Sowerholme.
- Ancient plant (pre-dates the dinosaurs) >60 Mya.
- Roots can go down >5 ft.
- Brittle so difficult to pull out.
- Dies back in winter.
  
- Attempts made to pull out in Upper Sowerholme pond, channel and Lucy Pond.
- Plan to use tarpaulin on Lucy pond to prevent photosynthesis.

## Traditional Uses

- Medicinal - tea from young stems is good for joints
- Scourer





# Various Aquatic Grasses

- Problem in most of the ponds.
- Can be removed by hand in deeper water but difficult on pond edges where deeply rooted.
- If not removed can lead to no open water in ponds.
- Controlled by pulling out from ponds.
- May experiment with pond dye which forms a film, preventing photosynthesis.
- Can only do this on ponds without sluices.



# Brambles

- Encroaches when ground conditions are dry enough,
- Problem in Upper Sowerholme at the drier edges – encroaching from the bramble thicket and from Lucy Brook.
- Also extensive brambles in and around Lucy Brook.



- Currently controlled by cutting back on an annual basis.

# Bullrushes

- Problematic – particularly in Upper Sowerholme pond and channel. Also in Cromwell pond.
- Deep root and rhizome system clogs water courses and prevents water flow.
- Currently controlled by digging out.

## Traditional Uses

- Medicinal – various
- Food – a superfood
  - high starch content
  - shoots can be cooked like asparagus
- Thatching, candles, etc.







# The Fairfield Association

## Forthcoming Events:

- World Wetland Day  
Guided Walk Friday Feb. 2<sup>nd</sup> 10 a.m.  
Meet at the shed . Wellingtons needed
- Volunteers' Buffet  
Thursday Feb. 22<sup>nd</sup> 7 – 9 p.m. The Storey  
All Fairfield's volunteers and helpers and  
long- suffering spouses and partners welcome