

Beef and lamb production in silvopasture

□ Réamaí Mathers



Aspen

Farm enterprise

- ❑ Small Farm: About 50 acres in the Glens of Antrim. Very exposed, with clay soils
- ❑ Cattle: Dexter and Black Galloway
- ❑ Sheep: Llyen
- ❑ Cattle finished to beef @ 24 to 30 months.
- ❑ Ewe lambs sold as breeders, small number of breeding tips sold. Rest of tips sold as fat lambs



Products

Pasture-fed (Flower-fed) Dexter Beef
2022 we have tried our Flower-fed Lamb

- ▣ Sales based on our story, meat quality and the regenerative approach we have to farming.



“The right native cattle, raised naturally and ethically, on flower rich meadows in an iconic landscape – that is our simple recipe for the finest quality beef.”



**Glens of Antrim
Flower-fed Dexter Beef
burgers - taste from
natures table.**



**Glens of Antrim
Flower-fed Dexter Steak
- the pinnacle in beef.**

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Agro-forestry is part of our farm and farmland resilience approach

▣ Why?

- To improve farm sustainability and our environmental impact

We needed to try to understand

- Impact of climate and landscape (wind, rain, sun, aspect, relief)
- Livestock
- Soils
- Swards
- Alternative farm business opportunities / diversification e.g. tourism
- Biodiversity

▣ Areas in which trees may help

- Soil management changes
- Access / ease of management
- Water management
- Wind & Shelter
- Diversification
- Carbon
- Biodiversity

The other pandemic

- ▣ Ash Dieback
- ▣ More than 90% of Ash to Die
- ▣ Ash comprise 60% of our trees in the broader countryside.
- ▣ Biggest deforestation event in Ireland in over 450 years



What the future of our countryside looks like!



Emptiness, huge declines in biodiversity

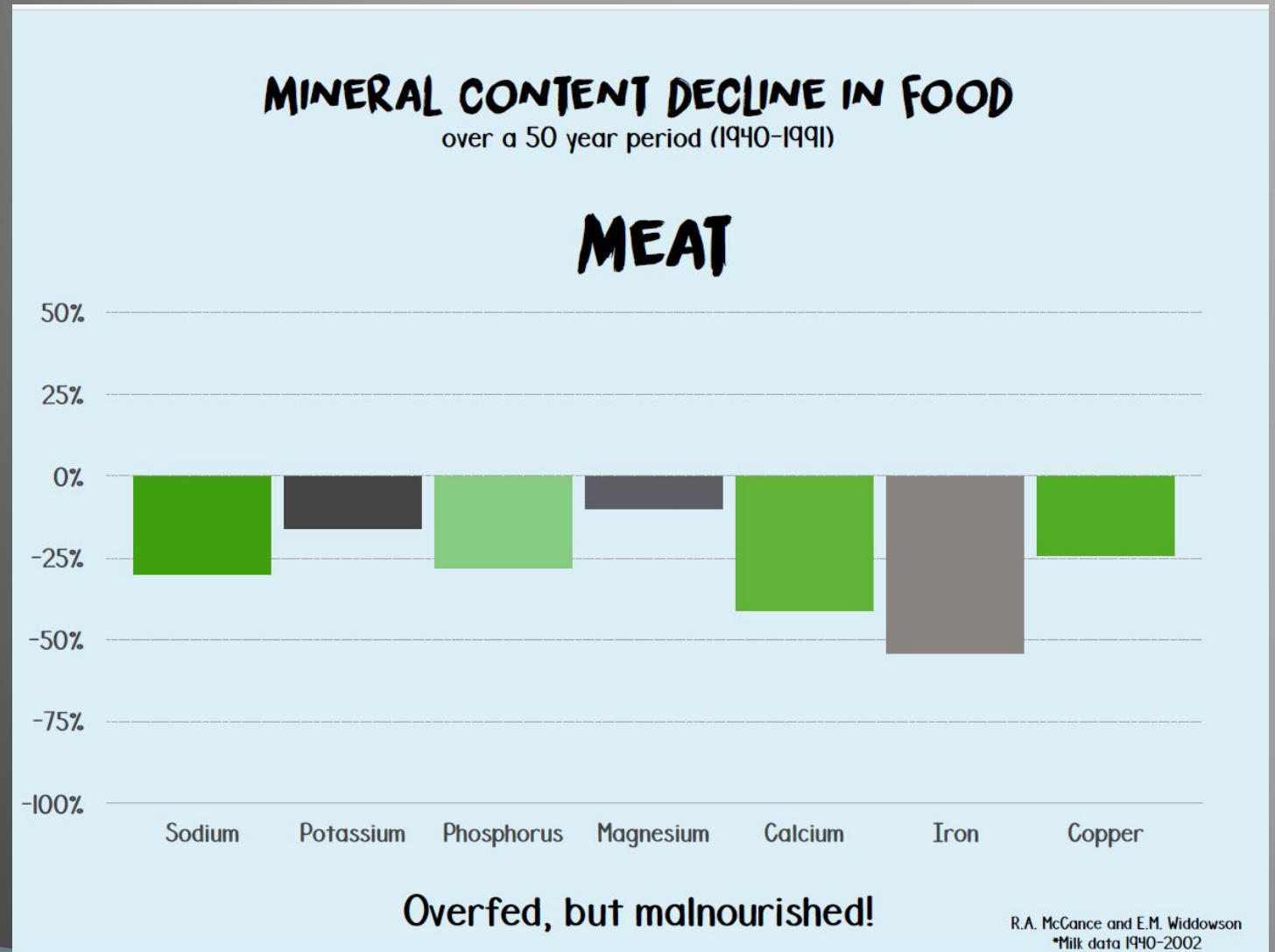


Reduced shelter and Carbon loss



Understanding Soil and Pasture

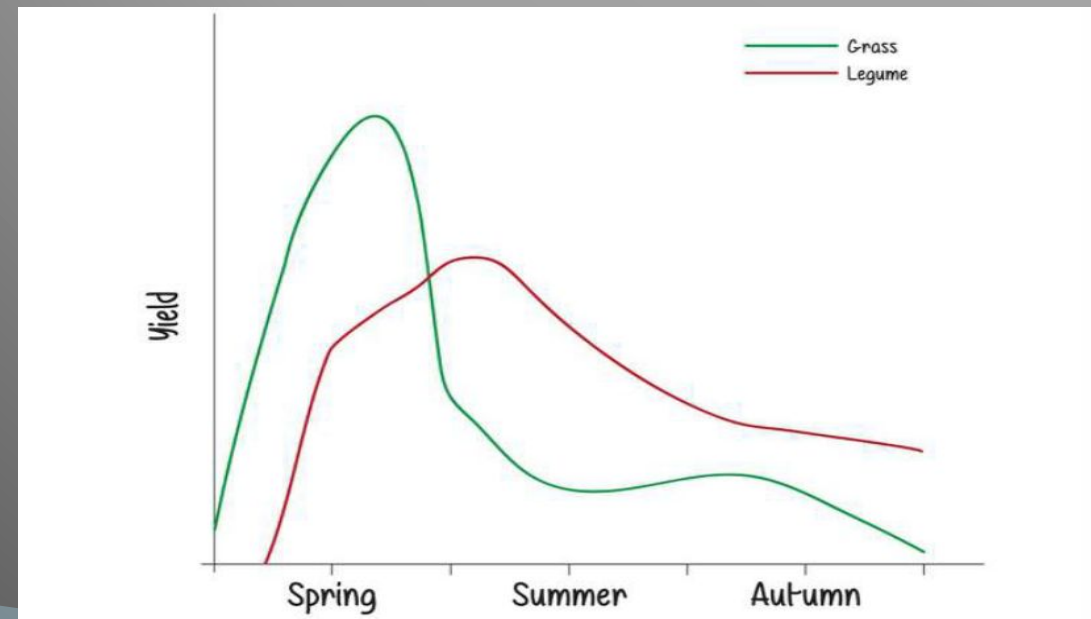
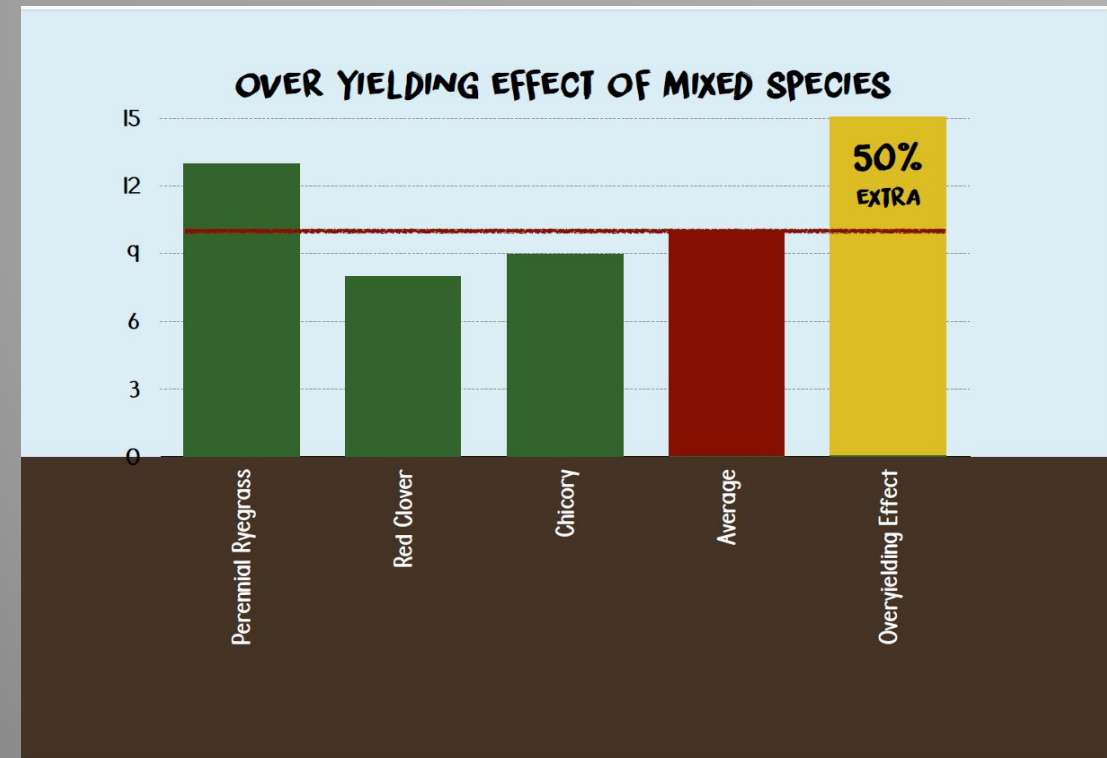
- Ryegrass dominated swards have been our most productive pasture for well over 80 years. They are very responsive to fertilisers. However this has implications....



Soil and Pasture: Is the alternative DIVERSITY?

□ General increases in fertilizers prices, declines in organic matter and declines in minerals derived from soils pass through plants and animals has caused increased farm costs.

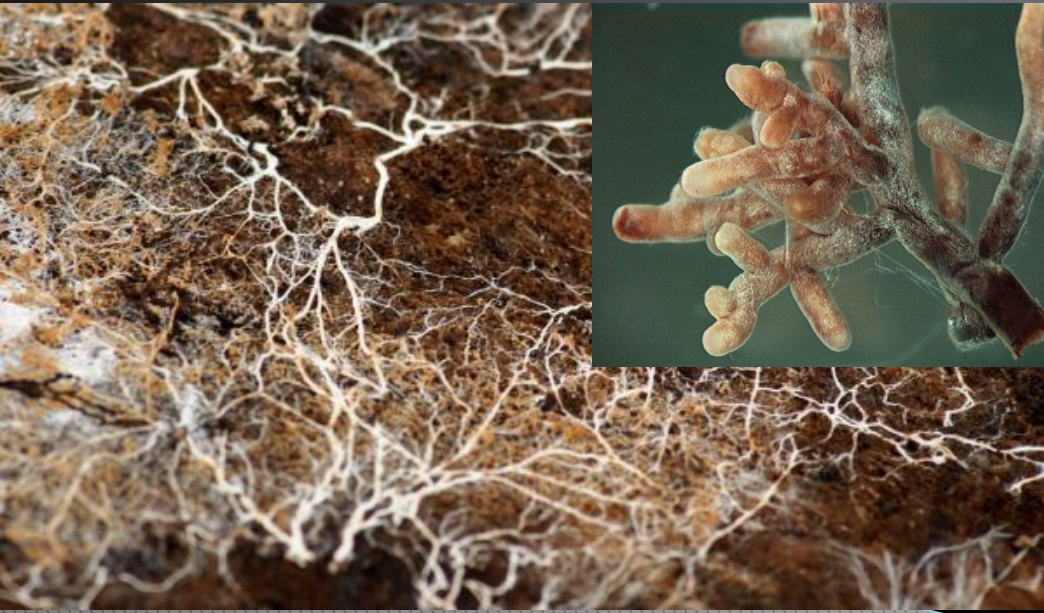
□ Soil gives health and receives its health from 'rock, weather, plants, fungi and animals'.



Soil Chemistry and Biology



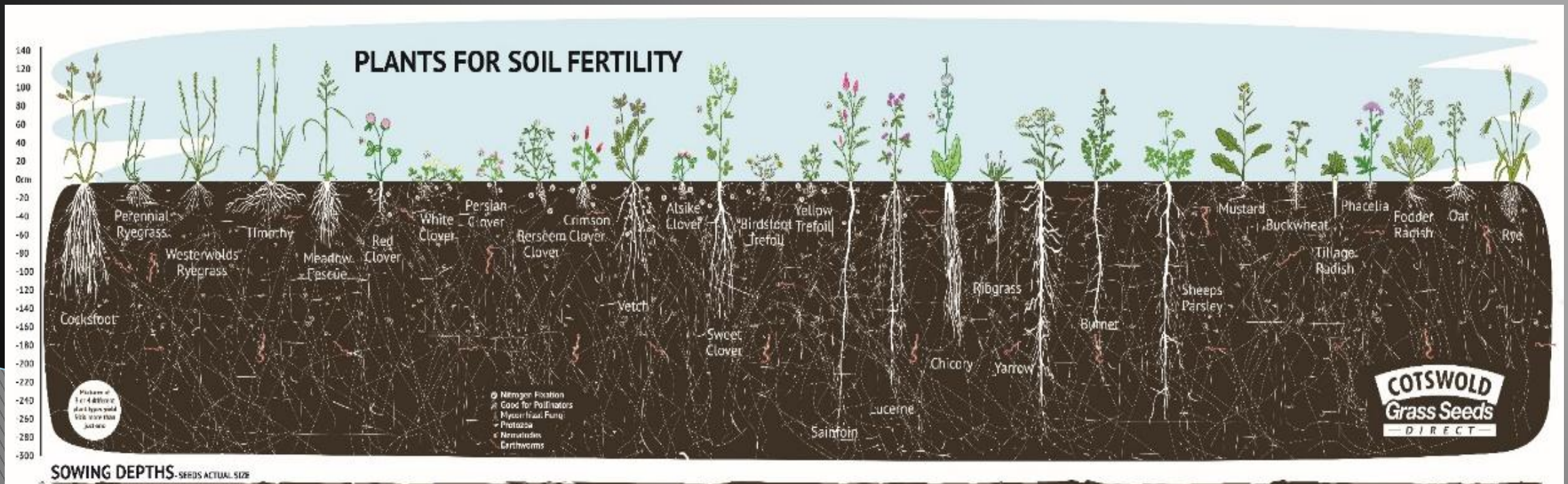
- The physical structure of soil can impact soil chemistry and soil chemistry can impact on soil structure.
- Mineral (non peat) soils are composed of minerals from underlying rock, humus (decomposed plants etc.), earthworms, micro-bugs, fungi (mycorrhizal mycelium), bacteria, dormant seeds etc.



Soil Structure: Thinking vertically!

A more varied species mix can:...

1. Increase micronutrients in the forage
2. Increase the length of growing season
3. Significantly increase soil biomass content
4. Significantly increase water storage and water drainage (drainage is at least 7 times better)
5. Contains species with anti-parasitic properties)



Trees add another level of structure and diversity!!!

- ▣ Trees take all the benefits of other diverse planting to literally other levels!!
- ▣ Relationships become bigger, deeper, more connected.

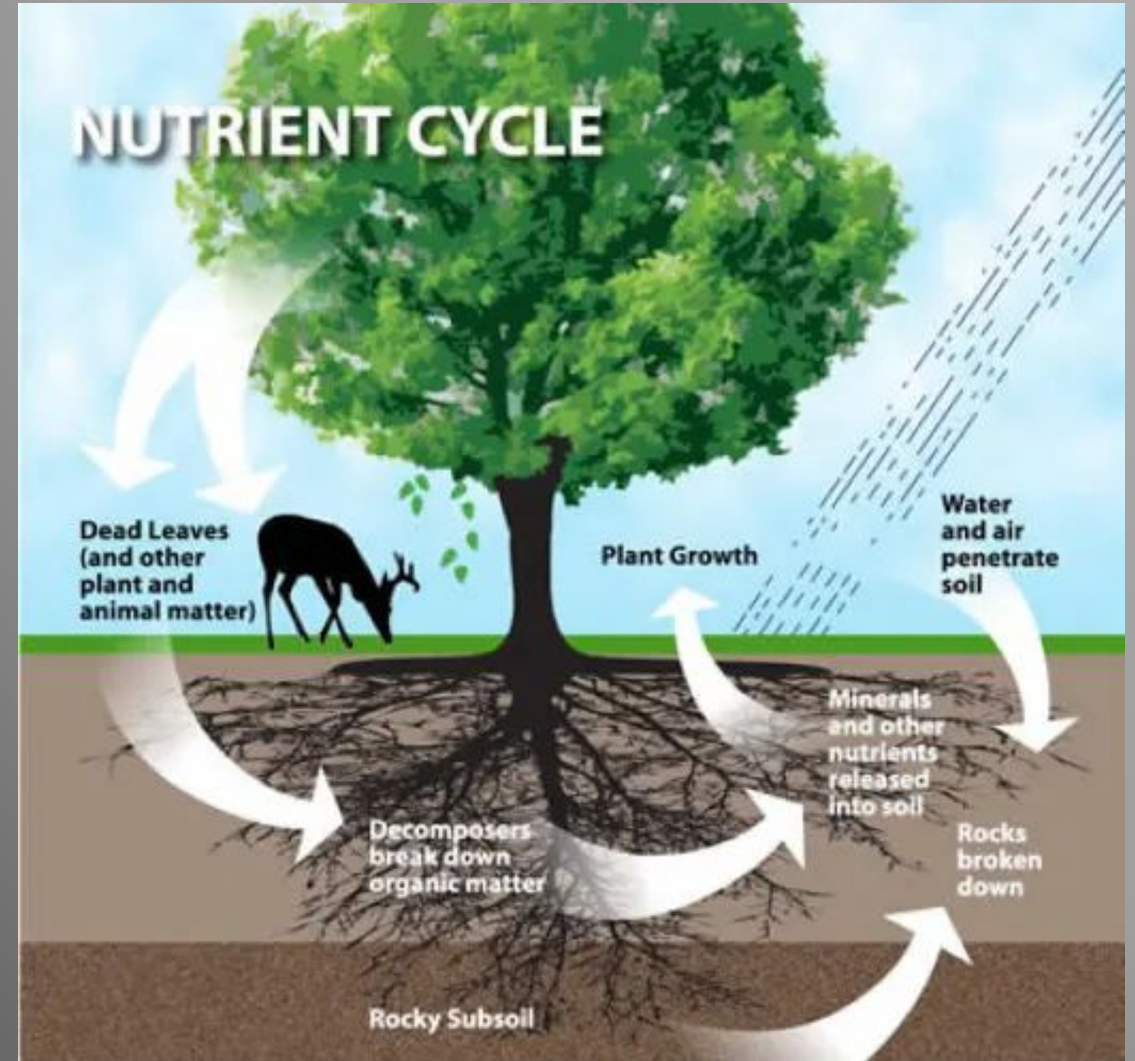
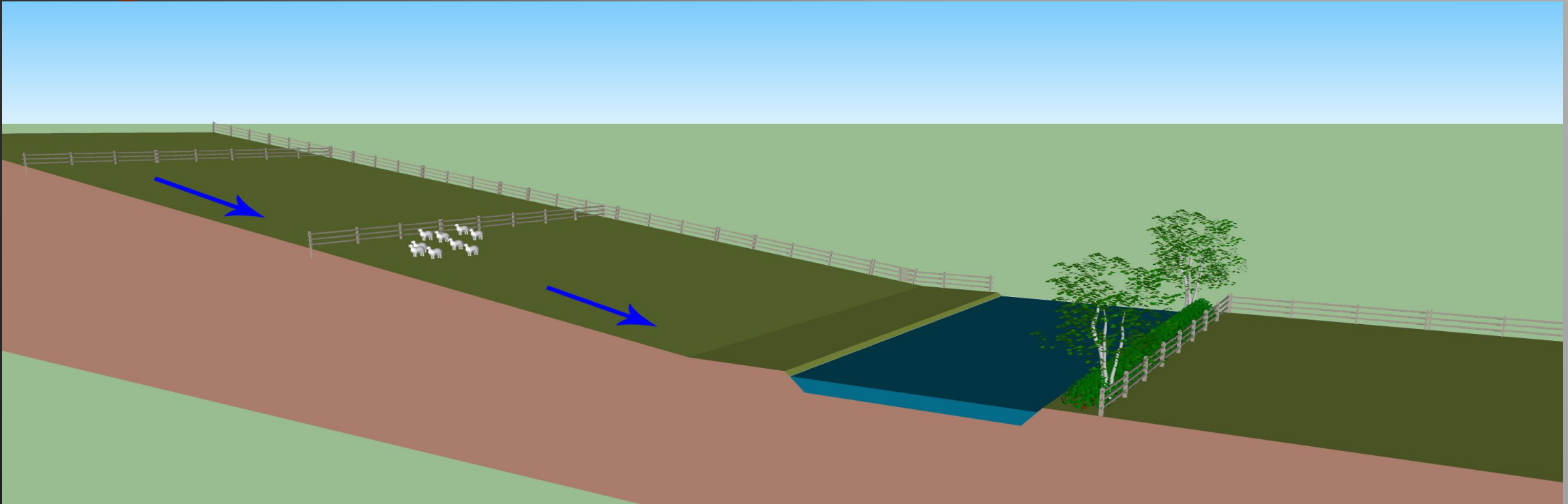


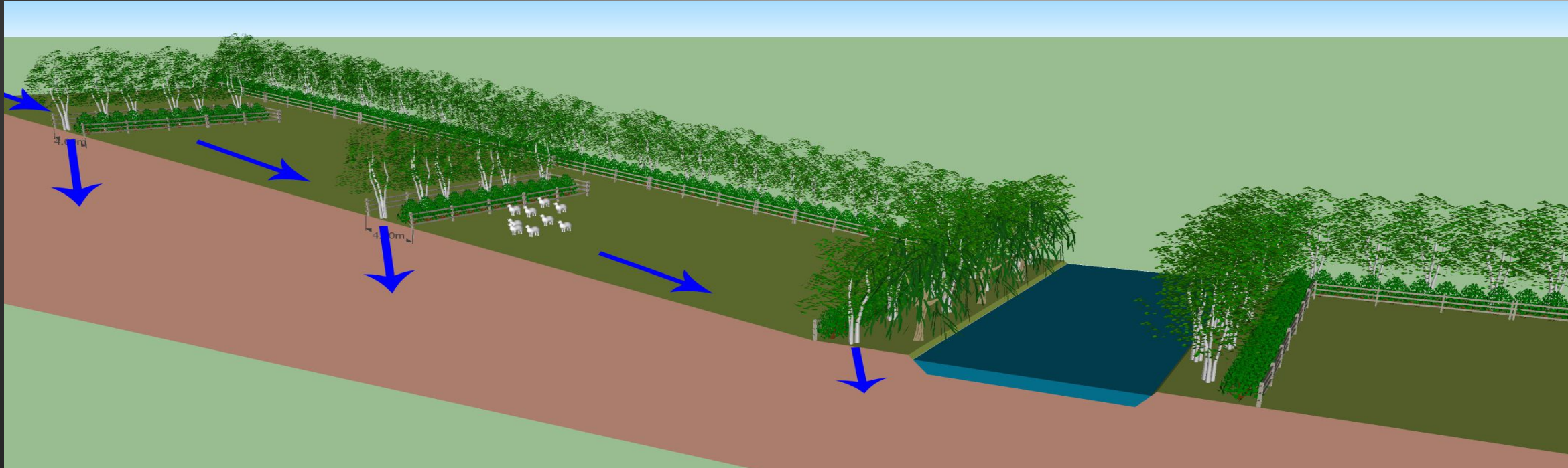
Diagram from [www. curious.earth](http://www.curious.earth)

Impacts of Water



- Water (usually too much!) has a significant impact on productivity of pasture
- Water balance has impacts on pasture growth, length of season, parasite load etc.
- Overland flow of water is one of the main factors in loss of nutrients from farmland to water courses.

Impacts of Water



- Penetration of water under trees **6700%** more effective than under grassland, (Pontbren)
- Strategic planting of largely native trees in mineral soils transfers water from high rainfall events into the deep soil, to be released more slowly over a longer time period.
- **Results:** Increased grass growth, longer season, reduced habitat for fluke, reduction in nutrient loss from pasture to water courses.



Today

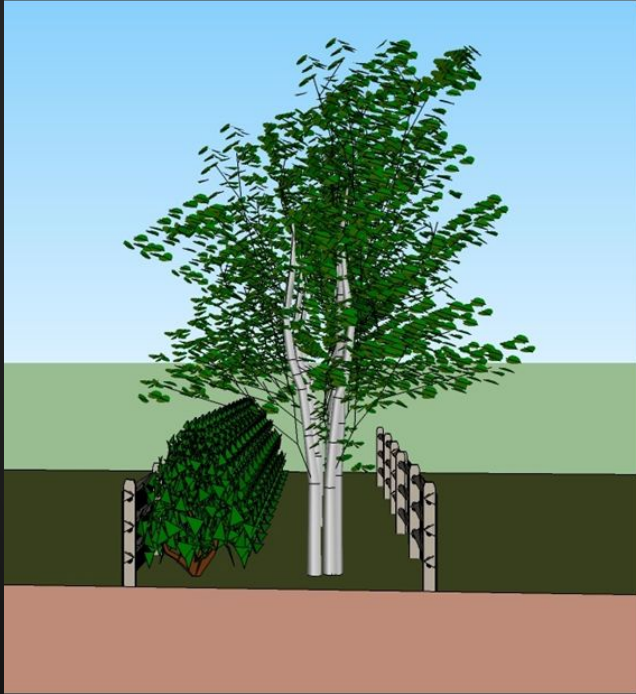


**A more resilient
future!**

What we have been doing with trees on our farm?



Fixing mistakes! Turning poorly conceived narrow hedges into Pontbren hedges



This hedge has allowed farmers to lamb out and calve out.

Rodger Dukes "Slightly reduced pasture areas means more grazing"



Improving the few hedges we do have



**Replacing an
unstable
Spruce stand
with native
trees.
Also
planting
other areas
with new
native
woodland.**



Planting new Pontbren hedges



**BUT...We still couldn't mix
livestock with trees 🙄**



Until we found a sharp edge to agroforestry!





Cactus guards: The beginning of a solution?

Our assessment

- They are animal proof, but not indestructible!
- Animals need to be educated with sacrificial guards.
- Wooden post support is better than the rebar the manufacturer advises.
- They could be taller.
- They are expensive!!
- But they are a potential breakthrough!
- THEY WORK!! ..so far

