

Wetland restoration for animal health



Background

Alchairn farm is an upland farm grazing sheep on an area of unimproved grassland, which had an old, infilled pond, some wetland and a small burn running through it. The liver fluke parasite was present in the local mud snail population and had infected sheep and led to sheep losses on the farm. Initially, the farmer routinely treated his livestock for the liver fluke parasite, however, it was becoming increasingly resistant to the treatments used.

Preventing contamination is an important way to regulate this pest and this is likely to become increasingly important in the immediate future as resistance to treatments increases.

Approach

The farmer undertook works to fence off the area, restored the pond by digging it out and planted approximately 1.25 ha of woodland. The new woodland comprised of areas of mixed native broadleaves with 0.25 ha left open for the stream, mill pond and areas of more diverse wetland. The total area taken out of production is therefore 1.5 ha.

Cost and benefits

This has reduced the foraging area for sheep, whilst also requiring investment in trees, fencing and pond clearing. The fencing excluded sheep from the wetland area and reduced the incidence of liver fluke within the flock. The new woodland provides shelter for livestock on the farm, particularly sheep, during the winter when driving wind and rain is common and this can have a significant negative impact on sheep condition. The benefits include:

Reduced incidence of liver fluke amongst livestock; Liver fluke infections affect profitability, as liver fluke reduces body weight, milk yield and fertility and can lead to increased mortality in livestock. <https://www.frontiersin.org/articles/10.3389/fvets.2020.564795/full>

Increased shelter from the woodland; this saves feed input that would otherwise be required to keep the sheep in good condition.

Increased business resilience against bad weather and disease.



There are other natural capital benefits, such as reduced poaching in the wetland, which benefits water quality and increases habitat for wildlife.

Despite taking land out of production, the overall effect on the sheep enterprise gross margin has been positive, as can be seen in the table below.

Table with cost and benefits – Wetland restoration for animal health

Annual Marginal Costs	Per Hectare (£)
Loss of gross margin due to taking land out of production	2.00
Capital costs (amortized over 15 years @ 4%)	42.01
Total	44.01
Annual Marginal Benefits	
Improvement in livestock gross margin	76.54
Total	76.54
Annual Marginal Cost: Benefit	32.52

Capital costs include AECS funding of £4.50 per square metre of pond, £3 per tree and £5.50 per meter of fencing.

<https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/pond-creation-for-wildlife/>

In addition up to 6 plots, 15 m apart, not exceeding 0.25 ha can be created under the **small-scale-tree-and-shrub-planting** with associated fencing.

Challenges

The challenge is to stop routinely treating with flukicides and move to prevention and diagnostic testing. The following link provides further information about liver fluke and wetlands.

<https://sefari.scot/research/liver-fluke-risk-and-agri-environment-schemes-a-tale-of-toads-snails-and-wetland-birds>

More information

SRUC Natural Flood Management: A Farmer's Guide <https://www.farmingandwaterscotland.org/downloads/natural-flood-management-a-farmers-guide/>

Farming and Water Scotland: Managing water on your farm webpage <https://www.farmingandwaterscotland.org/managing-water-on-your-farm/>

FAS: Water Management webpage <https://www.fas.scot/environment/water-management/>

NatureScot Management of wet habitats <https://www.nature.scot/professional-advice/land-and-sea-management/managing-land/upland-and-moorland/management-wet-habitats>