Best Practice

Silvopasture Management

Sheet 47.0a

Silvopasture and livestock management

Why change?

Silvopasture can potentially offer a lot of management advantages when added to a standard grazing platform. Shade in summer, shelter in winter, water retention and flood mitigation. It also offers a staggered income from timber through harvest of nuts, fruits or by thinning trees at regular intervals.
Studies have shown that biodiversity can be greater than either pasture or forest alone, and increase carbon sequestration
Pasture production can be comparable to traditional grazing, or even improved with shelter, with no reduction in stock carrying capacity.

Sheep grazing between trees

Steps to Success

1. **Review** the current situation Identify your conditions for the right species of tree and management practices. Think about fields where stock and pasture could benefit from shelter, or where soil is susceptible to runoff. Identify fields that are low grazing value, where tractor work is unsuitable (too steep/wet), or where fields are big enough to allow for work between rows/spaces.

2. **Identify** potential opportunities Will your trees simply provide shelter for stock and pasture or also provide a crop (e.g. fruit/nuts/truffles) and/or a harvest (e.g. timber/biomass)? Shade and shelter increases livestock welfare and improving live weight gain by reducing stress. Extreme weather impacts can be reduced, and the micro-climate created can extend the growing season of pasture. Deep tree roots, associated fungi and bacteria make nutrients and water more available to pasture. Biodiversity can be greatly increased, leading to more predator species – this could also reduce fly strike and ticks.

3. **Identify** ecosystem services provided, and potentially rewarded, such as improvements in soil, air and water quality, mitigation of runoff and flooding, and the sequestering of carbon in tree biomass and soil.

4. **Calculate** potential cost benefit of these opportunities such as tree protection against livestock, appropriate establishment and management of trees (arbor-cultural training/equipment/contractor hire) versus increased productivity and income diversity, reward of and for carbon credits and ecosystem services along with biodiversity, shade and shelter for stock , climate and extreme weather resilience. Some livestock are believed to self medicate by grazing leaves during the summer.

5. **Prioritise.** Right tree, right place – is the situation, aspect, soil and conditions appropriate for the tree to ensure good growth, and is there a market for the crop/timber etc?

6. **Develop** an action plan. There are many ways to integrate trees onto pasture (e.g. a grid system, clumps, rows, perimeter shelter belt) as well as different stocking densities. Investigate a system that works for your situation, management and goals.

7. **Monitor** trees and pasture to ensure good growth and form to maximise value and maintain a productive balance between both.

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Sheet 47.0b

Silvopasture - practical examples

There are numerous ways to combine trees onto pasture, which are adaptable to a variety of situations.
Examples:

- Grazed orchards + Shropshire sheep. Shropshire's do not bark trees, so no tree protection costs are needed, graze pasture and fallen leaves to reduce apple scab and topping costs, re-cycle nutrients and reduce fertiliser costs.
- Short rotation coppice (willow, alder) + cattle. Coppice established with woodchip mulch and silage taken from alleys for first 4 years. Cattle introduced in year 5 and excluded from rows by electric fence but allowed to reach leaves and small branches. Such forage contains valuable trace elements, allowing livestock to 'self-medicate', offsetting the costs from bought in forage from the loss in bio-chip production.
- Wood pasture chickens. Welfare greatly increased due to reduced stress (less fright, less feather pecking), improved shell quality and egg grades, and opportunity for biomass from thinning trees. It cost The Lakes Free Range Egg Company £2,000/ha to plant, but payback was achieved in six months.

Scientific Trial Results

Glensaugh, Scotland – Sycamore/Scots pine + sheep

- No reduction in sheep carrying capacity after 12 years
- 16% more pasture during dry summers. Sycamore at 400 stems/ha outperformed the woodland control for survivability and quality

AFBI Loughall, N.Ireland – Ash + sheep

- More spiders, beetles, birds and juvenile earthworms than either forestry or pasture alone, and a wider number of species
- Greater plant diversity
- No reduction in livestock output until year 10 at 400 stems/ha

Henfaes, Wales – Sycamore + sheep

- Infiltration and soil bulk density much improved compared to the pasture control
- Clumped configurations, as opposed to evenly spaced trees had the greatest impact – 504% greater infiltration capacity than pasture

Grazing between rows of trees

Grazing under less rigid plantings

Remember

- Good livestock management can save you time and money, and protect the environment.
- Check your land regularly for signs of poaching and brown water runoff, particularly during wet weather. Consider simple changes to livestock management if hoof marks from cattle are deeper than 50mm.
- If poaching persists despite the implementation of best farming practices, consider the cost-benefit of adapting existing buildings.

Interreg France (Channel Manche) England
Channel Payments for Ecosystem Services
European Regional Development Fund
CPES
Pinpoint Rivers Trusts and Farmers working together for water
The Rivers Trust
Westcountry Rivers Trust

This information sheet is part of a series produced by Westcountry Rivers Trust providing farmers with advice on land management practices to protect water bodies. The advice enables farmers to use farm resources more efficiently, helping to meet Nitrate Vulnerable Zone, Cross Compliance, Farming Rules for Water and other regulations while protecting our environment and natural resources.

Best Practice

Silvopasture Management

Sheet 46b

Silvopasture - Practical examples

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