



What Is Silvopasture? Key Principles *Part 2*

Ecological Benefits of Silvopasture

The silvopasture approach is often exalted—including by the USDA—because of its potential to mitigate climate change and offset the environmental strains of animal agriculture.

- **Carbon capture:** One study found that pastures with trees sequestered about 27% to 70% more CO₂ than pastures without.
- **Soil quality:** In another study, silvopasture soil contained more nitrogen and carbon even than woodland soil, which led trees to grow up to 5% taller, 35% larger in diameter, and 78% greater in basal area.
- **Water quality:** Trees reduce and slow runoff and trap pollutants like pesticides, fertilizers, and—especially important in an agricultural setting—livestock waste.
- **Cooling benefits:** Tree canopy helps reduce heat stress, lowering the temperature by up to 2.4 degrees Celsius per 10 metric tons of woody carbon per hectare. This is an increasingly important benefit to silvopasture as temperatures continue to rise amid the climate crisis.
- **Wildlife habitat:** The diverse ecosystem a silvopastoral system provides helps feed and house a variety of wildlife from essential pollinators to mammals.
- **Fire prevention:** Grazing livestock can cause wildfires, but managed grazing can prevent them. The livestock grazes on and reduces the understory, which can act as "plant fuel for fire."

Benefits to Livestock

Grazing livestock may reap the rewards of silvopasture, too.

- **Dietary diversity:** With a rotational grazing approach, livestock has continuous access to nutritious and diverse food types.
- **Reduced risk of infection:** Disease and parasites thrive in a monocrop environment.
- **Reduced heat stress:** The same cooling effect that benefits the land also helps reduce heat stress in the animals, which improves their performance and overall wellbeing.

Benefits to Farmers

Besides the benefits to their land and livestock, farmers could gain the following from adopting a silvopastoral system:

- **Income diversification:** The main draw for farmers to adopt a silvopastoral system is perhaps the economic benefit of adding trees (or livestock, contrarily) as an income source.
- **Enhanced aesthetics:** Pastures with trees simply look better than those without.

Challenges of Silvopasture

Silvopasture comes with some drawbacks for both farmers and the environment.

- **Time and energy:** Trees take time to establish in existing pastures, and farmers must prevent livestock from grazing on the land while a healthy forest ecosystem develops.
- **Financial investment:** Establishing a silvopasture system in an existing pasture costs \$100 to \$150 per acre, according to the USDA. That includes the cost of site preparation, seedlings, labor, and fencing, not continued maintenance.
- **Reduced carbon-holding capacity:** Turning an existing woodland into a silvopasture could reduce its carbon-holding capacity because livestock will inevitably compromise trees.

Soil Lovers say: Silvopasture Is A Win/Win Approach

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