

## Managing Climate Change - Facts

Land changes, the soil changes, the climate changes, the types and quantity of wood required for our economy changes.

The problem is that simply trying to meet targets and rushing to plant trees can make us less than careful about what and where we plant.

The 2015 Paris climate accord allowed countries to offset their carbon emissions from fossil-fuel use and other sources by planting or protecting forests. Since then most European countries include tree planting in their plans to fight climate change, especially as there is little progress in controlling carbon emissions. Scotland has ambitious targets.

The Committee on Climate Change, the body tasked with advising UK and Scottish Governments on setting climate change targets, have recommended at least 30,000 hectares of new woodland be planted as one of their 'key measures' to reduce greenhouse gas emissions. There is a need to increase tree planting to sequester carbon dioxide.

But emerging research suggests that trees might not always help. Trees cool the globe by taking up carbon through photosynthesis, but they also emit a complex mixture of chemicals, some of which warm the planet. The dark leaves and needles of trees can also raise temperatures by absorbing sunlight. Analyses in the past few years suggest that these warming effects from forests could partially or even fully cancel out their cooling ability. **Many scientists believe that commercial spruce planting has actually increased global warming.**

Nobody denies that trees are good for the environment; forests harbour much of the world's biodiversity. There is growing agreement that although we should still use tree planting as an emergency measure until we can cut emissions, we need to be more careful about species selection and about the **consequences of changing land use, especially if the land is being farmed organically and already providing a high level of carbon capture.**

Commercial tree planting, in itself, is very damaging both in the preparatory stages, building tracks, fences etc and in the methods used for planting which usually mean massive use of herbicides and chemicals. Unless the new plantation is actively managed, which means high levels of manpower, the end-result seldom matches the initial projections for growth/economic benefit. At present, this is offset by government 'subsidies' for tree planting.

When the trees are harvested, the harvesting process creates emissions which reduce significantly the net carbon capture achieved during the trees' life. But there is a belief by some that they will have bought time and helped meet targets as they have grown.

**We need resilient mixed species plantations in an era of rapidly changing climate and new tree diseases.**

**Even twin species plantations are a bad idea – there needs to be a wider mix.**

### **Points to Consider**

Trees planted on West Bold will belong to the people of Scotland – short term economic gain should not be allowed to dominate choices. The final decision will be political.

The darker the tree, the less carbon it gathers and stores. Conifers like pines and spruce absorb more heat than species such as oak and birch.

Fast-growing conifers are capable of gathering more carbon, more quickly than native deciduous trees so they seem a good option for “target-chasers”. Fir is better than spruce. Indigenous species grow too slowly to be an efficient option for rapid carbon fixation targets but they do provide other environmental benefits.

The denser timber of native oak stores more carbon per cubic metre but there are many more cubic metres of timber in a Douglas fir plantation because the trees can grow much closer together, and the firs grow more quickly and so are economically a better option.

Spruce is cheap to plant and fast to grow, but as Scotland’s climate warms, firs and oak are better in the long term both for carbon capture and wildlife.

We need to avoid using polluting single-use plastic tree guards. This means we need deer fencing around plantations.

Unharvested woodland eventually stops capturing carbon when it reaches maturity but **modern managed forests absorb less carbon than naturally growing forests**. This is because modern techniques of harvesting trees release carbon that would otherwise be stored amongst forest litter, dead wood and soil.

## **FARMING**

The more food we import, the higher the cost in emissions which add to global warming. Scotland’s landscape and climate are unique. Much of our farmland is unploughable or unsuitable economically for crops but we grow good, mixed species grasses. That grass is converted by cattle and sheep into food.(which does **not** have to be transported from the other side of the world)

Grazing cattle and sheep on our hills and uplands has a positive impact on biodiversity and conservation.

Organic, high animal-welfare farming of beef and dairy cattle and sheep is ideal in environmental terms

Carbon sequestration is required to meet net-zero emissions in agriculture. Managed grasslands in Scotland hold over 170 million tonnes of carbon. It is important to maintain existing stores of carbon.

According to the Scottish Government, our agriculture has already reduced its greenhouse gas emissions by almost 30 %.

The Committee on Climate Change figures show that in UK, transport is responsible for 26%, energy for 25%, business for 17% and homes for 14% of total UK emissions. By comparison, the whole of the UK Agricultural industry is responsible for only 9% with cattle and sheep responsible for a mere 3%.

**We cannot afford to cover good, well-managed farmland in trees.**

**Not all the West Bold ground is good quality – there is scope for tree planting even though this will impact on the farmer – but much of the ground is good pasture and simply should not be planted with trees.**