

Inappropriate Tree Planting

In the early nineties when forestry was booming there was an old saying going around – “never trust someone with sawdust in his boots.” Now 15-20 years later there should be a new saying - “be wary of those carbon cowboys”. With the recent amendments to the Emissions Trading Scheme we are seeing a few ill-informed carbon “experts” popping out of the woodwork just trying to make themselves a quick buck. Before you engage or invest with one of these turkeys there are a few things you should consider.

One of the biggest fallacies floating around at the moment is that the planting up of North Island hill country will solve New Zealand’s carbon deficit problems, make lots of money for the land owner and at the same time solve the erosion issues. Actually, to be fair some of this might have a hint of truth in it until you start talking tree species and the underlying geology.

Pinus radiata is being touted as the best because its fast growth rate means that it sequesters carbon so much quicker than scrub or native species. Sequestration over time for any species is not constant. It starts off low and peaks when you have maximum growth rates and then drops off at maturity. Since carbon is paid on tonnes of carbon sequestered annually, then revenue will not be consistent over time and at some point it will be minute again. This is especially so if the block is not harvested and replanted. If you are looking for long term sustainability from an economic sense, then you will not find it with carbon forestry planted in exotic species for perpetuity.

Pinus radiata will grow in quite broad site conditions. One of the most important requirements is the subsoil or parent material must be soft or fractured enough to get its main tap roots down. If it can not do this you can expect problems in years to come. Sure you might get the crop established and it may grow well for 15-20 years out of pasture due to the available nutrients but there will be a time when the crop will not be able to hold on and the crop will either “raft off” the slope or blow over. Climatic influences are often undervalued, for example severe wind can create havoc where the soil is saturated above hard geology. When rafting does occur, it takes the valuable topsoil that took hundreds of years to develop with it. It is totally irresponsible to even suggest planting radiata on such sites.

This problem can also be magnified. Some recently planted carbon forests have been planted with no intention of ever harvesting them. This is especially so where there is no access or difficult sites to grow a uniform crop or harvest. There are many examples of 20-40 year old Catchment Board plantings of radiata around the country side that are uneconomic to harvest and are falling over. The mess and the secondary erosion they are now creating is often worse than the soil erosion problem they were originally planted for. We are obviously very slow learners. There is the potential to create an environmental disaster with 40 year old, high density untended trees situated on marginal sites. With time the rate of sequestration will be very small as will the returns from carbon trading.

If the underlying geology is too hard and not suited to radiata then there are other options. The most important thing is to match land use or species to land type and environment.

Nature is a great leveller. If you have a good look at indigenous bush and where the different species exist on the landscape you will soon work out that nature matches tree species to land type by default. When planting forests, whether they are with exotics or indigenous species, humans need to do the thinking rather than let nature correct our mistakes. Radiata might be able to be planted where the underlying geology is hard but restricted to the easier slopes and ridges where there is plenty of soil depth and the water table is not at the surface. The steeper skeletal areas may be better suited to scrub regeneration, and the easier colluvial slopes for other species such as redwoods or eucalypt. The important thing is to consider the landscape as units rather than one big paddock that is all the same.

Believing that radiata is the answer for hard sedimentary North Island hill country erosion or planting it for “in perpetuity” is just naive and shows a lack of understanding of the underlying geological issues. It also shows that we are just living for today and the quick dollar, with total disregard for the future use of this land.

A final thought; the worse thing about all this is that in some situations some of these unsuitable areas have been or may be planted using government money under the ETS forestry grant scheme.

Carbon farming is an option for all landscapes but it is important to remember that trees or tree species is like livestock farming where some animal types or farming methods are just not suited to the landscape.