Space planting trees for erosion control

It's that time of the year when many farmers are considering this year's erosion control program. Poplars and willow planting is just one form of erosion control technique and farmers have been planting them for decades. There are many excellent examples of this work around the country side, but there are also loads of cases where poles have been planted for erosion control and never had a hope achieving it. Planting poles is hard work, time consuming and expensive so it is imperative to get it right.

Following the 1992 winter, Federated Farmers commissioned Landcare Research to undertake a study on erosion in the lower North Island hill country. Figures for the effectiveness of space planted trees, afforestation, scrub/bush for controlling erosion have been thrown around for years. But the one figure that hardly gets a mention is the amount of in-effective erosion control plantings that are out there. This same study showed that only a dismal 35% of plantings were assessed as being adequate and appropriate for the erosion they were planted to control. So effectively, we have two thirds of erosion control plantings being only suitable for shade or amenity. Since 1992, our observations have shown not much has changed. If you are not going to do it right, don't bother at all.

Plantings can be in-effective due to a combination of poor sitings, inappropriate stocking rates, plantings not covering the erosion prone parts of the slope, the wrong sort of tree being planted for the type and severity of erosion in question, just to name a few.

Planting for erosion control is simple to achieve. There are a few key ingredients for successful erosion control programmes and these include:

- Understand the type of erosion and its processes you are wanting to control. Each erosion type requires a different approach. This is the first step to successful erosion control programs.
- Appreciate the severity of the erosion in question. Space planted trees will not control severely eroding soil slip faces. More severe earthflow erosion requires tree spacings much closer.
- Match the tree type to the land type. Consider the site conditions and factors such as soil moisture levels, wind, frosts, and animal pest threats. Failure to select the suited variety will result in tree losses. There is plenty of information on the different tree species available. Ask your local nursery or land management officer.
- Plant all the erosion prone parts of the slope and not just the part actively eroding of it.

When considering your erosion planting program, consider your farm assets, infrastructure and community assets objectively. What is most at risk? The biggest impact from a storm is not the erosion scar itself, but the track, fence or building damaged by the debris trial. Prioritize your planting program. Erosion control works should be protecting tracks and infrastructure first, and then dealing with the areas with the greatest erosion potential. Land that has the potential for severe erosion, space planted trees will not solve the problem. You need to seriously consider afforestation or 'managed retirement'.

We recommended that planting is undertaken on a paddock by paddock basis, rather than spread across the whole farm. It will completely control one issue at a time and will enable easier stock management in the future.

To ensure tree survival, there are several key points to remember:

- Ensure you are using good quality material that hasn't been lying around for weeks. Successful planting occurs in June- early August.
- Where you have continued grazing, use protectors.
- Timing of planting; best results are achieved when soil moisture levels are high. If you dry out early in the summer, then plant early.
- If your soil dries out in the summer you may have to re-ram in the late spring/ early summer. The pole has small roots around the top 10cm of the base. When the soil dries out it pulls away from the base, the trees swing in the wind and breaks off these roots. This is the most common cause of tree death.

Trees planted for erosion control have a certain lifespan, and like a fence need ongoing maintenance. Form pruning and removing double leaders will help tree growth at year 2-3, reduces windthrow and extends the life of the tree. The removal of the dynex sleeves should occur as soon as the base gets firm. It is best to remove all sleeves in the paddock and allow the bark to harden before allowing the stock to graze the paddock.

Poplars and willows have a useful lifespan of 30-50 years, where others such as oaks can be 200 years. If you are not keen on maintenance and replacement, consider longer living species in your planting program.

In addition to controlling the erosion on your property, the trees will also provide shade and shelter for stock, potential fodder source and provides a nice landscape to work in.

Erosion control planting is essential for future proofing your business. Space planted poles will reduce erosion by up to 70%.Take the time to identify the tree type suitable for the site, that the control methods are suitable for the erosion process, and that the poles are positioned correctly. Combined with some follow up care in 3 months, survival rates and erosion control should be greatly successful.

For further advice and information, contact either Sarah Dudin on 021 526458 or Lachie Grant 021 526478 at LandVision Ltd.

These poplars are ineffective in controlling any erosion and are only suitable for shade.

Space planting of this gully system and hill slope would protect this landscape from erosion.

A well planted earthflow. Space planting trees on the hillslope in the background would not solve the erosion issues.