Points from the meeting

My apologies, in the rush I forgot to push the record meeting. I was gutted because it was a great event. I have put together some notes from the meeting and linked in some resources (click on links in blue). If you attended the meeting and think I have missed some pearls, please let me know and I will add them in. Also, there was interest in a more comprehensive workshop, and I will organize that. Let me know if you are interested.

Water and slips

- Water and the weight of water falling all one time causes the slips. It makes the soil heavy. The quicker it comes down the less chance it has to drain away.
- 1ml of water falling on 1 m2 is equivalent to 1 litre of rain which weighs 1 kg
- 1000 ml rainfall over 1 ha is equivalent to 10,000 tonne/ha. Then gravity pulls it down on slopes and when you have thinner and weaker soils on the hills. It is easy to see how slips occur, especially in big rain events.
- Water also flows underground which also undermines the soil.
- Slips occur where the water accumulates, e.g., gullies.
- Some soil types are more prone to slipping. It is important to understand your soil type.
- In a big extreme rain event, many slips will occur despite the vegetative cover

Sally Hargraves Geosolutions. If you have a slip or slips on your property, what's the best course of action in the short term to try and stop it continuing to slide?

- The most important thing is to control the water and move it away from the slip.
- Note where the water flows, while the ground is still wet.
- Diverting water away includes drainage solutions.
- Fill in any cracks that have appeared to prevent water entering the soil
- Tracks are particularly vulnerable to slips, and it is important to incorporate lots of culverts to divert water in small increments rather than spacing them out and have large amounts of concentrated water running off tracks.
- Think about where the water exits the pipes – is it protected from erosion?
- Where significant infrastructure is at threat, it is best to get expert help as there are a number of strategies that can be used.

Lachie Grant/Suzie, Landvision. For slips on farmland what would be your plan of action in the next few months?

- Focus first on restoring infrastructure such as tracks and fences.
- Plastic netting can fill gaps in fences for sheep. Electric fence for cattle
- In steep land, on particular soil types, slips will occur during big rain events
- A slip is made up of a scar and tailings. The scar (where the soil has come from) is visually a relatively small part of the damage (<20%). So, slips are often not as bad as they look. In a year's time it will look completely different.
- The slip scar cannot be revegetated because normally there is no soil left. Tailings contain the topsoil and will recover quickly from seed material in the tailings, and they revegetate themselves. This is the material that can continue to move down the slope.

- Lachie thinks actively regrassing slips is uneconomic. If you do decide to regrass slips for reasons other than economics, then focus on seeding tailings on moderate slopes and clovers are better able to establish in harsh conditions and are often the first colonisers. Avoid reseeding if sowing conditions are not optimum (approaching dry or cold).
- Planting with poplar poles (with covers if grazed by stock) is a good strategy but not directly on the slip scar but these can be planted in tailings and around the slip edges.
- Ideally in Tasman Nelson plant poplars or any tree species are planted in late autumn, early winter. This gives them a much better chance of getting through the first dry summer.
- It is better to sit down now and scratch a long term, potentially staged, planting plan on a map rather than panic plant now. Prioritise areas that have the potential to damage infrastructure then move onto slip material and other less critical areas.
- If you have lost significant grazing land you need to do a feed budget and if the grazing area is reduced significantly, you should sell stock.

Sediment on flats

- The slip material and flooding has put sediment onto the flats.
- Your actions with this material will depend on its soil fertility, depth and wetness. It is a good idea to get a soil fertility test ASAP. The fertility can be highly variable depending on the source of the sediment.
- There is a decision tree on what to do with sediment on flats

Peter Manson (Hawkes Bay). How can I reduce the likelihood of slips occurring in the future? How can I reduce the impact of slips on my property in the future?

- You can only implement actions that will prevent slipping in average rainstorms. Big events may still cause slips.
- Work out the slip prone areas which are in gullies on steep hills and get advice on a poplar/willow pole planting. Soil type is important.
- Start planting the eroding gullies first or gullies that threaten infrastructure.
- If the area is grazed, then include a sleeve for your poplar poles.
- These trees stabilise the slopes with roots but also remove water from the slope.
- Get advice on the type of poplar/willows and how to plant for your conditions and erosion type. Poles are often supplied by the local councils
- There will be a shortage of poplar and willow poles and you could set up your own pole nursery and supply the local district.
- Right now, there is a shortage of poles as it is the end of the poplar season (normally supplied when dormant in May). You can cut your own poles yourself and plant. Late in the season it is important to cut poles that are thicker (e.g., 10 cm in diameter) to improve survival. In autumn you can plant thinner poles. Don't cut poles from Crack Willow as this is a noxious weed that spreads. Pole survival is reduced if they move easily in the hole so you can as the ground dries up you can go and ram the soil in again around them. This helps survival.
- Space the poles apart with closer distances for erosion prone areas. Plant them from 8-12 m apart and alternate them along the side of each gully. There are different planting patterns for different types of erosion. It is best to seek advice.
- You can come back and thin the trees once they are established.

- If the area is ungrazed you can also plant natives. They are slower growing and will take longer to stabilise the slope. A mix of exotic and native plantings can also be used.
- Start planting now. It will be 5-10 years before your plantings will be effective at reducing erosion.

Rob Fryer. In the Top of South what native plants would you recommend on planting in slips in native areas, on residential areas or stock excluded areas that would help to consolidate slips.

- It is best to get advice on what native plant is suitable for your conditions based on your location and the site conditions (dry, wet). Local planting experience is very important and local observation on what has performed well is also important.
- If where you want to plant is out in the open, you will need to plant first colonisers i.e. those natives that grow out in the sun. Within bush you can use second colonisers. In dry conditions Kanuka is a hardy first coloniser.
- You can do a mixture and tree and grass/flax plantings.
- Tutu is a common first coloniser of disturbed ground in the bush. It also has a great root system. It is, however, a poisonous plant to stock, and the pollen can also contaminate honey.
- In this extreme event, older plantings held on along the river. Along the rivers the recent riparian plantings were covered in sediment but on removal of the sediment from the 30,000 planting along the Wakapuaka River has resulted in only 10% death rate.
- We need to manage the river plantings to ensure banks stay intact.
- Keep planting, it works and the best time to plant is now.
- There are native planting guides prepared for the region and Hawkes Bay council has put out a native planting list for erosion areas and Landcare Research has researched root depths and tensile strength of roots on riparian planting and the trusty cabbage tree and ribbonwood performed well. The roots underground relate well to the biomass above ground. Exotics generally grow faster but the natives outperform exotics on tensile strength and will live longer.

Asita Langi. NCC has been operating an erosion planting scheme in North Nelson over the last few years and, while it is still very young, what has been your and landowner's observations following the recent event?

- The erosion project has been going for 3 years so the plantings are young, and some were affected. We have 50,000 plants and poles available to landowners each year and next May23 planting is our last for this funding. We have applied for more funding to the erosion fund and haven't heard back yet.
- We have been getting poles from the TDC poplar pole nursery, but they have had a few problems with supply in the last few years.

Landowners sought advice from the speakers on their issues and left feeling more knowledgeable.