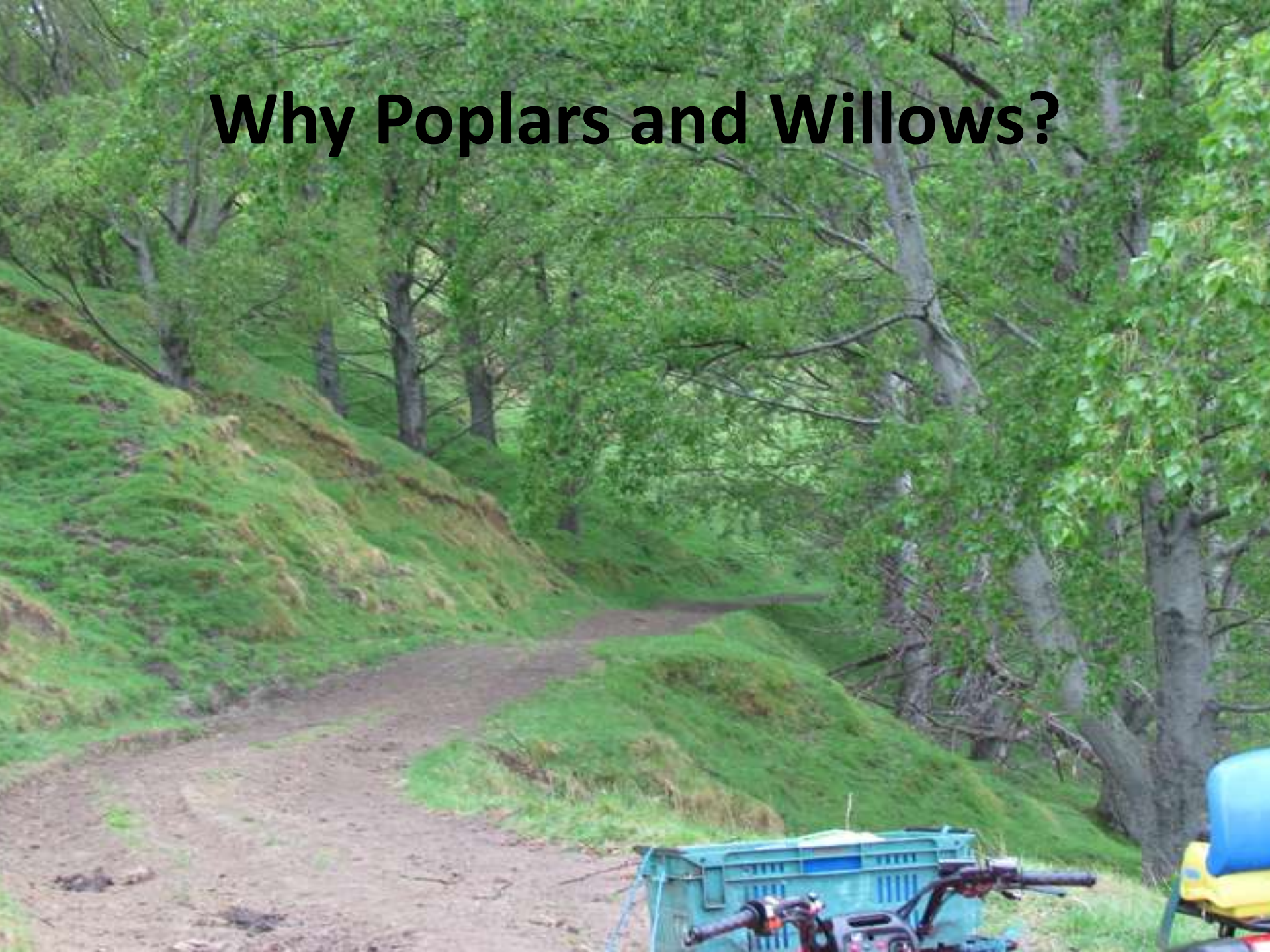


Poplars and Willows

A landscape photograph showing rolling hills with scattered trees. The hills are covered in dry, brownish grass. In the foreground, there is a large, dense tree with bright yellow leaves. The sky is blue with some light clouds.

**With a focus on East Coast Hill
Country**

Why Poplars and Willows?



Easy to grow in the nursery



Easy to Handle and Store



Easy to grow in the Field from Poles



But plenty of hard winter work!

Uses of Poplars and willows

Especially on the east Coast

- Erosion Control/Soil Conservation
- Drought Fodder for Sheep and Cattle
- Shelter and Shade
- Aesthetics
- Possible Timber (Poplars)
- Bees (Willows)

Erosion Control/Soil Conservation



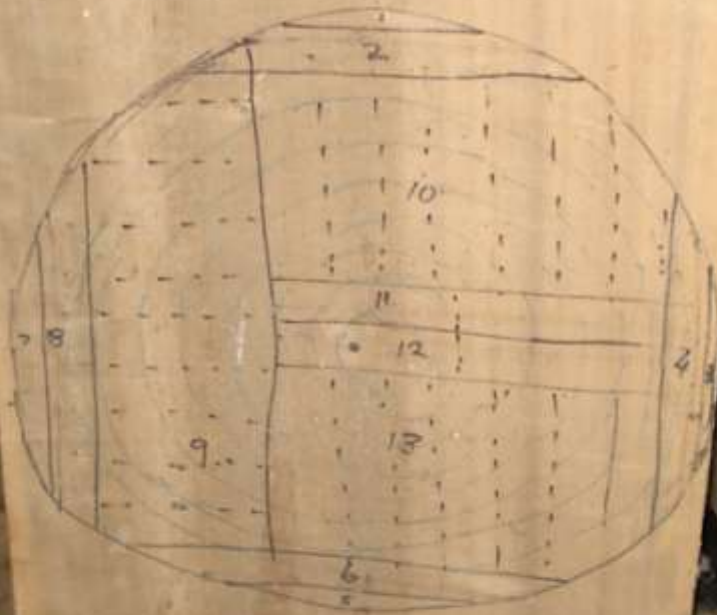
Livestock Fodder



Poplar Timber



SAWING PATTERN.



The most useful Poplars (East Coast NI New Zealand):

- Kawa (*deltoides* x *yunnanensis*)
- Veronese (*euramericana*)
- Crows Nest (*euramericana*)
- *P. yunnanensis*

Kawa



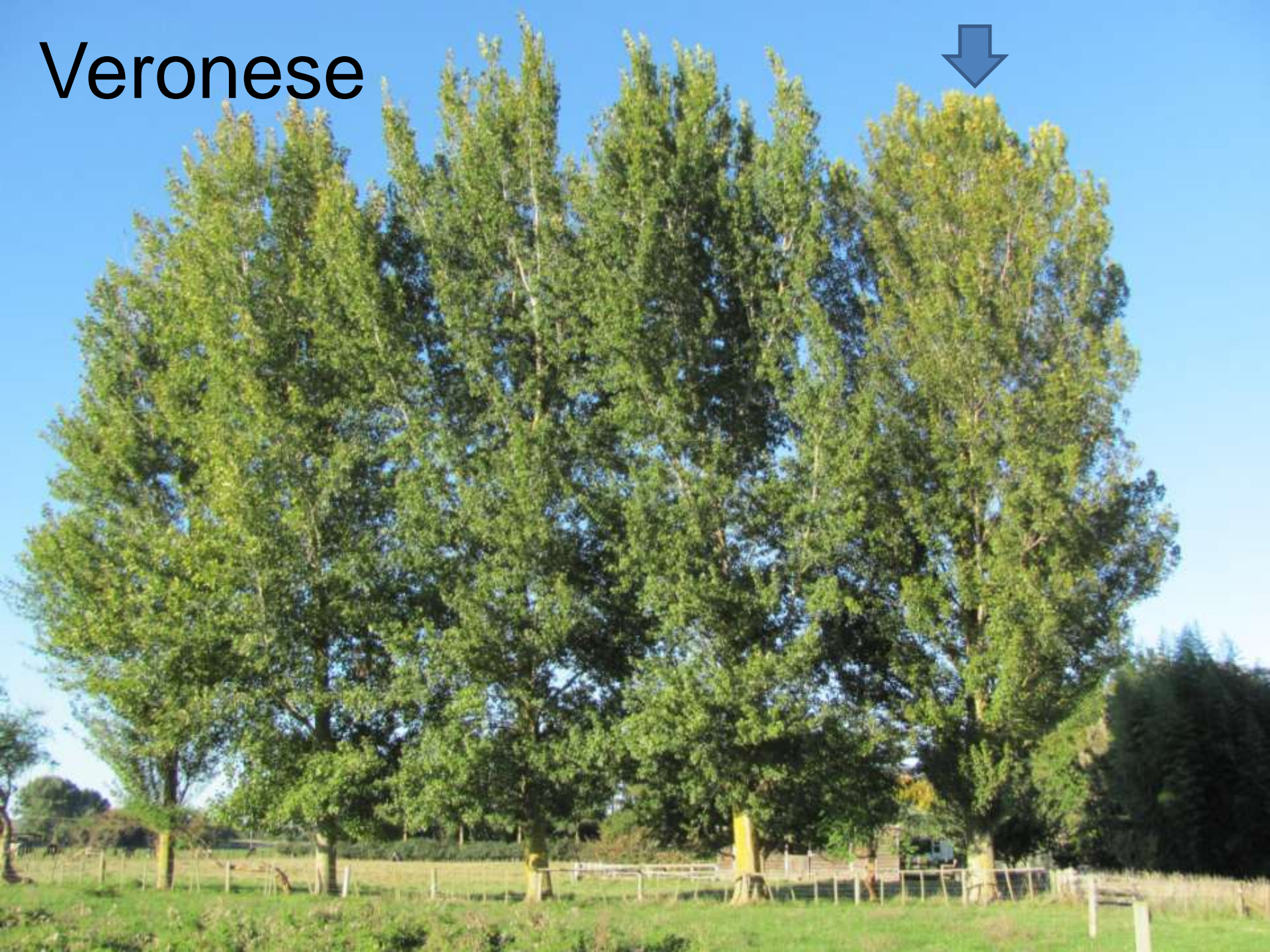
Kawa Poplar attributes:

- Needs deep, moist soil
- Possum resistant
- Brittle on exposed sites
- Occasional wind-throw at ~ year 2
- Highest density poplar wood
- Attractive tree





Veronese



Veronese Attributes:

- Fast growth – height and diameter
- Hardy
- May grow very large
- A good timber variety (site tolerance and growth rate)

Crows Nest



Crows Nest Attributes:

- The toughest of all poplars!
- Drought/wind tolerant
- Well suited to the east coast (sun/heat)
- Many branches
- Lombardy shape on hard sites
- Not a timber tree



Tree Willows:

- *S. matsudana*
- *matsudana* x *alba* hybrids
 - ‘Tangoio’
 - ‘Moutere’
 - ‘Hiwinui’





Tree willow attributes:

Clone

S. Matsudana

‘Hiwinui’

‘Moutere’

‘Tangoio’

Attributes

- Very rough bark
- Highest density (fire wood)
- Some rough bark
- Good in high altitude
- Very fast growth
- Good in high altitude
- The toughest
- Fast growth

Tree Management

Old Conservation Trees:

- Become brittle
- Affect pasture growth
- Create bare ground
- Make livestock management difficult

Solutions

- Prune young trees for longevity
- Prune poplars for timber
- Pollard for drought fodder

- Old trees may be poisoned rather than felled





Old Trees

Procedure:

- Chainsaw – 2 rings, 1 spade width apart
- Peel the bark with the spade
- Paint on Glyphosate 360 (full strength)

Benefits:

- Quick return of good pasture
- Slow tree breakdown (less mess)
- Replacement trees can be planted soon after









Success rates

Normally very high (85%+) However, losses caused by:

- Pole quality (size, health) and handling
- Quality of planting and followup
- Environment – Drought, Wind, Flood (erosion)
- Cattle
- Pests – Goats, Possums, Insects
- Herbicide overspray

Effectiveness

- Poplar or willow trees with a DBH of >30cm will stabilise hill soils within 10m of the trunk (*Douglas et al, 2011*)
- Therefore to achieve this, trees should be planted at least 30 – 40sph
- Willows are almost 100% effective for gully erosion control

Four Landscapes – which is the most productive?

