THE NEW ZEALAND
POPLAR & WILLOW RESEARCH TRUST

hill country heroes
poplars & willows - securing new zealand's hill country

Newsletter December 2018

Welcome to this update of the work of the Trust and other poplar and willow matters covering:

1. A growing focus on trees in relation to climate change, clean water and animal welfare
2. Telling the story – promoting poplars and willows
3. Research update
4. Our partnerships
5. Contacts

1. A growing focus on trees

Climate Change

The likelihood of an increase in the value of carbon credits linked to inclusion of farming in the ETS will likely influence increased poplar and willow planting in future.

The fit of poplars and willows under ETS is outlined on our web page. This article was prepared by Margaret Willis of Woodnet. She shows how planting for compliance with the ETS needs careful planning. http://www.poplarandwillow.org.nz/documents/guide-to-erosion-control-spaced-plantings-being-eligible-to-enter-the-emissions-trading-scheme-ets

Use of poplars and willows for river, stream and gully protection received renewed attention from landowners and forestry companies following the Tolaga Bay deluge of forestry slash from recently harvested slopes.

The response of poplars and willows to climate change is featured in a recent MPI publication (download here).

The research report noted warmer temperatures and higher CO_2 concentrations predicted for the future will enhance poplar and willow growth. However, in drought prone regions this will be offset by reduced water availability over the growing season. The research found that root growth was less affected by drought than above ground growth which is good news for soil conservation. The report notes that poplar and willow trees retain green leaf in drought because they access deep ground water.

There is an urgent need to establish trees NOW, as climate change will bring:

- Increased rain in western regions
- Greater likelihood of drought in all regions
- More difficult conditions for pole establishment
- Decreased rain in eastern regions
- Increased frequency of severe storms
- Increased erosion risk

Animal Welfare

Scrutiny of the livestock industry in relation to animal welfare standards continues apace and is a growing factor in consumer buying decisions. Poplars and willows both provide shelter and shade, are quick growing, stand up well to trimming and allow quality light access to pasture.

Grazing livestock at a comfortable temperature makes good sense for both animal welfare and productivity reasons, especially at times of the year when livestock are vulnerable to either hot weather or cold, wet, windy conditions. Good shelter and shade results in better food conversion efficiency and increased growth rates – more shelter means less energy spent keeping cool or warm. By providing shelter or shade, the farmer can reduce adverse impacts on livestock, mitigate the risks and impacts of the weather on farm productivity and enhance the reputation of the livestock industry in the eyes of the public and consumers.

Best trees for minimising slips and reducing water contamination

Poplar and willow trees are the best species to minimise erosion and also to repair damaged and eroded landscapes. The chart below illustrates well the superior rooting capability of poplar and willow species.

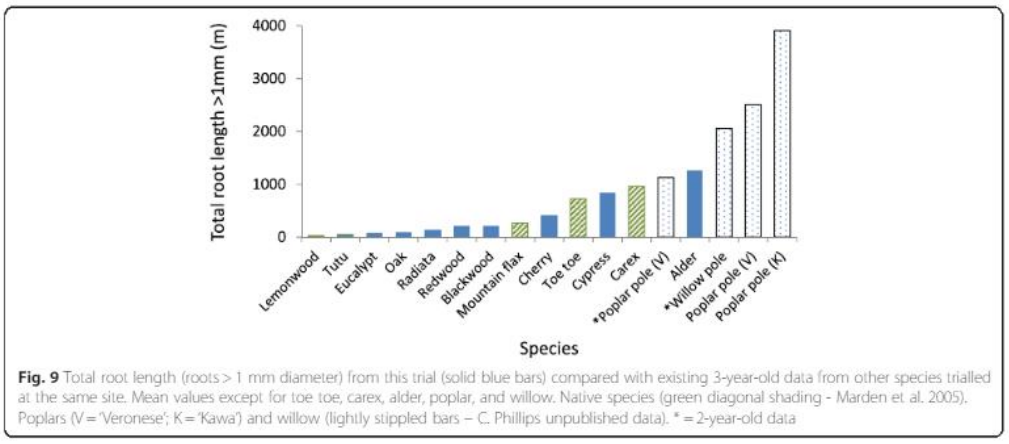

Fig. 9 Total root length (roots > 1 mm diameter) from this trial (solid blue bars) compared with existing 3-year-old data from other species trialled at the same site. Mean values except for toe toe, carex, alder, poplar, and willow. Native species (green diagonal shading - Marden et al. 2005). Poplars (V = 'Veronese'; K = 'Kawa') and willow (lightly stippled bars – C. Phillips unpublished data). * = 2-year-old data

Chart taken from Phillips and Lambie, Landcare Research. "Observations of root development in young trees of nine exotic species from a New Zealand plot trial."

Trust initiatives

In recognition of the growing focus on trees in relation to climate change, clean water and animal welfare, the Trust is collaborating with others in a "More Trees on Farms Approach" by offering its expertise and knowledge relating to the important role of poplars and willows; and supporting regional councils and other organisations to encourage farmers to plant poplars and willows through knowledgeable and experienced Poplar and Willow Ambassadors

2. Telling the story – promoting the planting of poplars and willows

Website

Our website contains a wealth of information related to poplars and willows. Click on the section called "Farmer Guides" to watch excellent three minute "How to" videos relating to pole selection, management and planting http://www.poplarandwillow.org.nz/library/filter/videos

Check out how Pakaraka Station changed its farm practices to successfully prevent a repeat of widespread damage in 1977. In a period of sustained wet weather from May until October combined with a total lack of sunshine and little drying resulted in massive loss of soil. The owners wanted to avoid a repeat and started planting poplars and willows. Today they have literally planted from the valley floor to the tops of the hills. http://www.poplarandwillow.org.nz/documents/pakaraka-station-field-day-2018

Pakaraka Station in 1977

…and 2018

Facebook

Keep in touch with our Facebook page: https://www.facebook.com/hillcountryheroes/
Please let us know if you have articles of interest, appropriate links or opinions to share.

LinkedIn

We have 237 followers on our LinkedIn account - New Zealand Poplar and Willow Research Trust.
Click www.linkedin.com/in/nz-poplar-and-willow-research-trust to make us a new contact.

Corporate Brochure

Access our corporate brochure here.

3. Research update

Willows push back giant willow aphid

Independent field studies in Tararua, Hawke's Bay and Wairarapa investigated the impact of giant willow aphid (GWA) on willows aged up to 5 years and planted from poles. In the investigation, half of ~300 trees were chemically protected from GWA and half were not. While GWA were feeding in large numbers on the unprotected trees there was no significant detrimental effect on tree height and collar diameter. Siting of the pole had greater effects on growth than the aphid.

Poplar poles don't need extra fertiliser

A field study near Gisborne looked at the effect on poplar growth of adding a deposit of fertiliser (N, P, N+P) near poplar poles. A single deposit of fertiliser, either N (urea), P (superphosphate) or both was supplied to 'Veronese' poplar trees on sloping pastoral land two months after the trees were planted as poles. Above ground growth over four growing seasons was compared with control trees not given fertiliser. Root development was compared also, from soil cores taken near the fertiliser deposits and away from them. There was no evidence in any of the four years from height, collar diameter, top of sleeve diameter or fine root growth that the N and P fertiliser deposits acting singly or together contributed to enhanced survival or growth. It is considered that the application of fertilisers at the time of planting is not necessary or warranted.

4. Partnerships

Our current partners are:

Funding and in-kind support

- Regional Councils
- Beef + Lamb New Zealand

In-kind support

- DairyNZ
- Ravensdown

Research support

- Plant & Food Research
- AgResearch
- Landcare
- Scion

Educational support

- Massey University

We greatly value the support from Regional Councils and Beef+Lamb New Zealand not only for their funding, which supports the salaries of our staff, but also for their extensive in-kind support. Regional Councils, Beef + Lamb New Zealand, DairyNZ and Ravensdown promote our web-based resources on their websites and feature the benefits of poplars and willows at field days and in other extension activities that they undertake.
We would welcome similar support from other agribusiness organisations and especially those servicing pastoral farmers.

5. Contact us

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Other Trustee details are on our website http://www.poplarandwillow.org.nz