

When adequate planting of a good standard has been achieved, the desire for gene flow will be met. It may require landscape scale planting. But if not done well, then are we doing it only to satisfy ego? To aspire to novel ecosystems is to aim for second prize.

References

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THE RIVERBRIDGE EXPERIMENT – HAKATERE / ASHBURTON RIVER

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Starting in 2001 with a bulldozer and 10 hectares of paddocks crossed by water races, Russell Langdon began to construct wetlands for native water fowl in the middle of the Canterbury Plains. His ambition was to create a breeding centre for native wetland birds, and plant a forest of native trees for bush birds. He excavated ponds and began planting. In the past 18 years he has never stopped planting trees. A few more ponds appeared too.

As Russell said “digging ponds is my heritage: my great grandfather dug ponds for a mill, my grandfather and father dug ponds on the farm for irrigation, and now I have dug ponds, this time for birds”.

Russell holds DoC permits to breed red-crowned kākārīki, buff weka sourced from the Chatham Islands, pāteke / brown teal, and to hold Canterbury mudfish. His original trees are now 5-8 m high and seeding. The endangered Australasian bittern and marsh crakes found their way to Riverbridge, along with grey teal, royal spoonbills, the hardy bush birds pīwakawaka / fantail, riroriro / grey warbler and silver eye / tātou (but not korimako/bellbird yet).

The future of the centre is secured by a Trust (Riverbridge Native Species Trust), and legally protected with a QEII National Trust covenant.

Located on the south bank of the North Branch of the Hakatere / Ashburton River, Riverbridge is less than half a kilometre away from the stopbanks. Built in 1968 to prevent floods the stopbanks also enabled the channels and ridges on the braided plain to be smoothed away, removing the wetland vegetation in the depressions and the dryland species from the stony ridges. Lowland streams and spring flows were directed into water-races ("drains"), which are regularly cleared of vegetation.

It is rare to find any relicts of the indigenous vegetation from the original floodplains. The topography has been altered so much that now the stopbanks are grassed, the narrowed river margins are planted with willows and poplars to reinforce the stopbanks, the low gravel ridges of the floodplains are either dense gorse or developed pasture (or a bit of both), shallow channels are filled, and springs piped so that all that is left of these wetland habitats is seasonally damp introduced rushes.

Ten years ago Russell bulldozed a mound to plant trees by the entrance to Riverbridge. The gravel scrape he left behind was 1 m deep, just above the



water-table. It is damp in summer and fills with water in winter (Fig. 1). This has turned out to be a natural experiment in the restoration of the floodplain channel vegetation. There are now 22 native plants growing in the 20 m by 2 m gravel scrape, along with the weeds that are a threat to the long-term retention of the vegetation. The native species have not appeared elsewhere on the property, so I can only assume that the seeds have survived in the gravels (something to test).

Figure 1 Russell Langdon at the scrape.

There are more indigenous wetland species in Russell's scrape than I saw in the riverbed (Table 1). The river gravels are a goldmine of weeds including broom, gorse, blackberry, grey willow, alder, tree lupin, old man's beard, ragwort, St John's wort, evening primrose, narrow-leaved plantain, cocksfoot, and clovers. Native species are scarce: tutu (*Coriaria sarmentosa*), *Carex flaviformis*, and cudweed (*Pseudognaphalium luteoalbum*).

Russell has added yet another Plains habitat to Riverbridge and this one was created inadvertently, with less than an hour's work with a front-end loader.

Table 1 Riverbridge scrape wetland species, indigenous and exotic, sighted on 6 April 2016 and 31 January 2018.

Species	Common name	Notes
Indigenous species		
<i>Austroderia richardii</i>	toe toe	
<i>Blechnum minus</i>	swamp kiokio	
<i>Carex coriacea</i>	rautahi	
<i>Carex diandra</i>		
<i>Carex flagellifera</i>		
<i>Carex flaviformis</i>		
<i>Carex secta</i>	pukio	
<i>Carex sinclairii</i>		
<i>Carex virgata</i>		
<i>Eleocharis acuta</i>	spike sedge	
<i>Epilobium cinereum</i>	a willowherb	
<i>Hypericum pusillum</i>		First noted in 2018
<i>Juncus edgariae</i>	Edgar's rush	
<i>Juncus pallidus</i>	pale rush	
<i>Juncus planifolius</i>	leafy rush	
<i>Leptospermum scoparium</i>	mānuka	Six 10 cm high plants noted in 2018
<i>Microtis</i> aff. <i>unifolia</i>	onion-leaved swamp orchid	First noted in 2018, flowering 31 Jan
<i>Microtis unifolia</i>	onion-leaved orchid	Seeding on 31 Jan
<i>Myriophyllum triphyllum</i>		
<i>Phormium tenax</i>	flax	
<i>Ranunculus glabrifolius</i>		
<i>Typha orientalis</i>	raupō	Introduced to Riverbridge by Russell

Exotic species	
<i>Agrostis capillaris</i>	browntop
<i>Anthoxanthum odoratum</i>	sweet vernal
<i>Carex flacca</i>	carnation sedge
<i>Carex leporina</i>	oval sedge
<i>Cynosorus crinita</i>	crested dog's-tail
<i>Holcus lanatus</i>	Yorkshire fog
<i>Isolepis setacea</i>	
<i>Juncus tenuis</i>	track rush
<i>Leontodon taraxacoides</i>	hawkbit
<i>Lotus tenuis</i>	bird's-foot trefoil
<i>Plantago lanceolata</i>	narrow-leaved plantain
<i>Prunella vulgaris</i>	selfheal
<i>Rumex obtusifolius</i>	dock
<i>Trifolium repens</i>	white clover

NATURE AND NURTURE IN A REVEGETATION PROJECT ON GLENTUI BENNETTS ROAD

Allen Cookson

The article in the Canterbury Botanic Society Journal 47, 2016 by Geoff Henderson and Miles Giller, "Matawai park –regeneration 44 years on", prompted me to tell the story of my own revegetation project at the north end of Glentui Bennetts Road. There are parallels and contrasts between the two stories. This story is mainly about land owned by Environment Canterbury (ECan) adjacent to our property. When I first saw the place in 1968, it was dominated by an unholy mix of blackberry, Cotoneaster, gorse, broom (*Cytisus scoparius*), and *Muehlenbeckia australis*. When our family holidayed at the family residence, parents and children engaged in sporadic planting, including native species. We sought to buy the land from ECan and were turned down. In October 2009, with ECan's permission, I started to convert the reserve to shrubland and woodland with species that might have been there before human interference.