

AROWHENUA BUSH: A REMNANT OF THE FOREST

OF THE SOUTH CANTERBURY PLAINS

COLIN BURROWS

One of the most interesting jobs I have had on the conservation of Canterbury native flora has been to help with the rescue exercise for Arowhenua Bush, near Temuka, in South Canterbury (S111/783685)(Fig.1). In 1976 Fraser Ross of the Royal N.Z. Forest and Bird Society asked if anyone in our Department could help with advice about restoration of the Bush. I was amazed to hear of the survival of any of the Bush, for, although I knew of its earlier existence, from historical records, I had imagined it to be long gone.

Fraser and I visited the Bush in January 1977 and the description below is essentially based on observations made during that visit. An update on progress in restoration is given in the article by Fraser. We are deeply indebted to Mr. Ray Lyon, owner of the property on which the Bush stands, and to Mrs. Lyon, for their kind hospitality and for the great interest which they have shown in the welfare of the surviving forest remnant.

THE BUSH AND ITS FLORA

Arowhenua Bush is on the flat Canterbury Plains surface, beside the Opihi R., about 2.5 km W. of Temuka and near the Arowhenua Maori settlement.

The substrate is yellow-grey earth, apparently derived from loess. It is probable that the impermeability and water-retaining properties of this soil have enabled forest trees to survive drought on what seems, at first, to be an unpromising site. In fact one swampy area and a shallow gully, filled with muddy water in wet seasons, occur in the forested area.

The Bush consists of open clumps of low trees, predominantly narrow-leaved ribbonwood (Hoheria angustifolia), and a smaller number of kowhai (Sophora microphylla), hung with a great deal of pohuehue (Muehlenbeckia australis) and scattered over about 10 hectares, with treeless, grassed areas between.

The strong westerly wind of August 1975 caused severe damage so that

probably more than 50 per cent of the standing trees were blown down (including two of the few surviving matai Podocarpus spicatus. Many of the fallen trees are still alive - 1984). There are very few seedlings of any species of trees and shrubs present. Saplings of the dominant trees are rare, but saplings of some of the commoner shrubs are more abundant. All of the species present are represented, predominantly, by healthy specimens.

FLORA

The native flora present consists of :

<u>Trees</u>	<u>Living Specimens</u>		<u>Remarks</u>
	<u>Numbers Seen</u>		
	Adults	Juveniles	(* = flowering or fruiting 25-1-77)
<u>Elaeocarpus hookerianus</u> (pokaka)	4	2 poles	
<u>Hoheria angustifolia</u> (narrow Leaved ribbonwood)	numerous	only 3 tall saplings	predominant tree*
<u>Melicytus micranthus</u> (small flowered mahoe)	-	2 saplings	*
<u>Paratrophis microphylla</u> (milk tree)	1	5 tall saplings	the single adult* smothered by <u>Muehlenbeckia</u>
<u>Pittosporum tenuifolium</u> (kohuhu)	4	-	*
<u>Plagianthus betulinus</u> (lowland ribbonwood)	5	-	3 have wide-spreading branches, 1 is blown down but healthy. *
<u>Podocarpus dactyloides</u> (kahikatea)	-	2 poles	1 is smothered by <u>Muehlenbeckia</u> .
<u>P. spicatus</u> (matai)	-	1 pole, 1 tall sapling	Both smothered by <u>Muehlenbeckia</u> . 2 blown down trees (poles) are dead.
<u>Pseudopanax crassifolius</u> (lancewood)	2	-	1 is blown down, both are overgrown by other plants.
<u>Sophora microphylla</u> (kowhai)	numerous	a few seedlings	occurs in several* groves.
<u>Shrubs</u>			
<u>Coprosma crassifolia</u>	numerous		*
<u>C. propinqua</u>	8+		
<u>Lophomyrtus obcordata</u> (myrtle)	10		*
<u>Melicope simplex</u>	11		*

Myrsine divaricata 4 discovered since
1977 by F. Ross.
One lying prostrate.

Pseudopanax anomalus 3 *

Vines

Calystegia tuguriorum numerous *
(N.Z. convolvulus)

Clematis sp. cf marata 3 *

C. foetida 5 *

Muehlenbeckia australis numerous *
(pohuehue)

Parsonsia heterophylla fairly numerous *
(N.Z. jasmine)

Rubus schmidelioides numerous
(lawyer)

R. squarrosus (lawyer) numerous

R. squarrosus (leafless form) 2

Parasites

Korthalsella clavata numerous *
(pigmy mistletoe) but only
2 shrubs on Melicope
- very abundant
on one which is
very unhealthy.

Tupeia antarctica common on *
(mistletoe) 1 tree on Pittosporum

Herbs

Poa imbecilla 2

Hydrocotyle sp. numerous

Ferns

Asplenium flabellifolium 1

Pellaea rotundifolia 2

Polystichum richardi 4
discovered since
1977 by F. Ross.
1 discovered recently
by F. Ross and 1
sprouted in the
fenced area.

Fig. 1

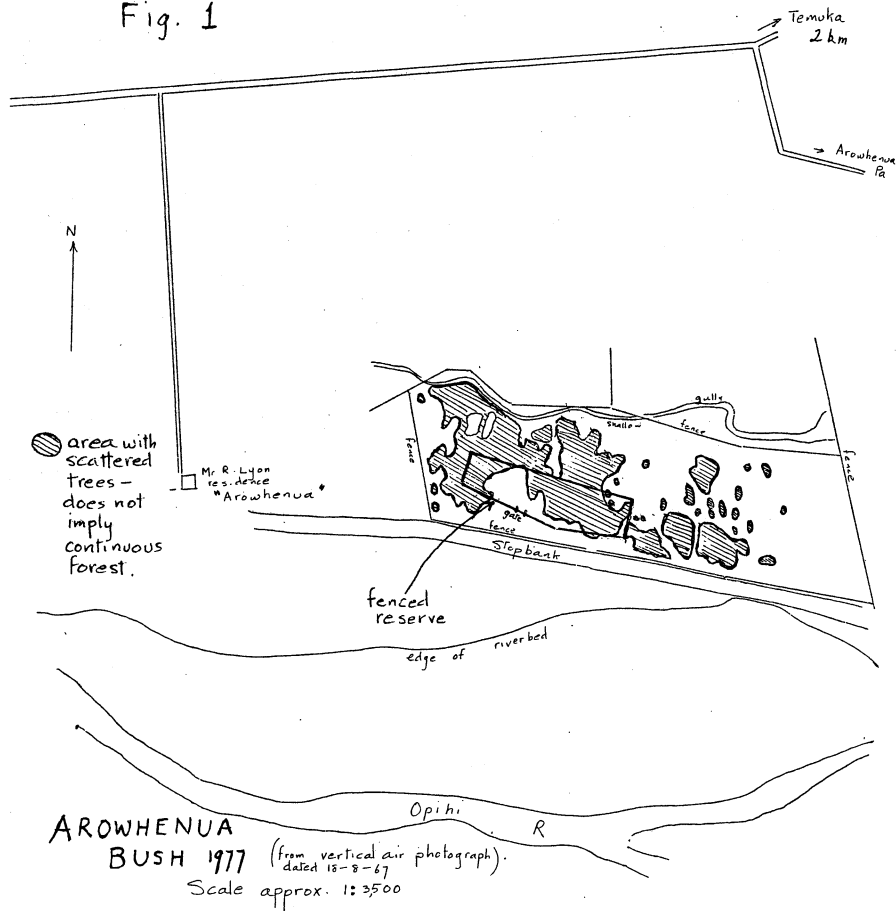
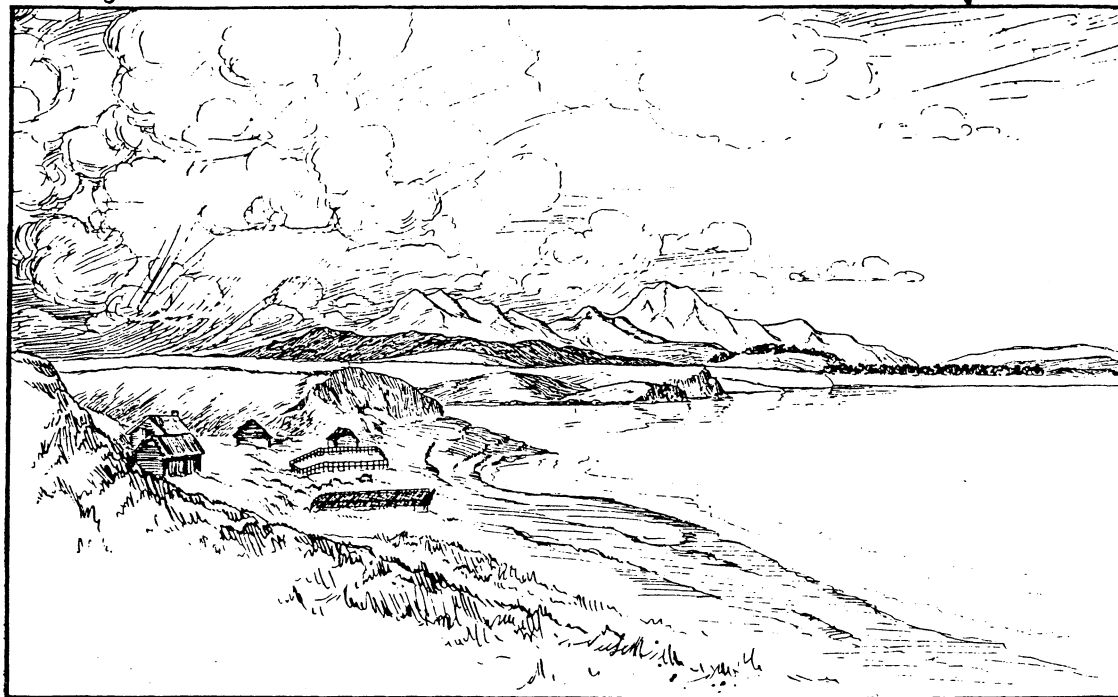


Fig. 2



FIRST HOMESTEAD IN SOUTH CANTERBURY

[*Drawn from a pencil sketch signed W.D. and inscribed "Messrs Rhodes' home station on the beach at Timaru, with a view of the country to the north, including Arowenua bush on the plains and Talbot Forest on the lower declivities of the back ranges. On a clear day part of the Snowy Range bounding the Canterbury Block on the west is visible. 13 April, 1853. Rainy and foggy.*]

From A.E. Woodhouse 1937. George Rhodes of the Levels and His Brothers. Whitcombe & Tombs.

SUGGESTED MANAGEMENT 1977

It was recommended to Mr. Lyon that an area of the Bush be fenced off from stock and that an attempt be made, with the help of the Forest and Bird Society, to reconstitute a forest environment. This was to be achieved by planting hardy cover species which, once established, would enable the species with less hardy juveniles to be underplanted. Seed from the Bush itself, or from the closest South Canterbury forest stands, such as Waitohi or Claremont Bush, were to be collected and plants grown on for this purpose, in a nursery.

Other management required was the control of Muehlenbeckia australis which overgrew and threatened to smother many of the trees, including the podocarps. Some other weed species, such as Crataegus monogyna (hawthorn) and some herbs also needed to be removed.

THE IMPORTANCE OF THE BUSH

The Bush is extremely important as an historic monument. The Maori people of Te-umu-kaha, prior to European settlement, will have made considerable use of the forest. We have no detailed records of this, but it may be assumed that they obtained food and fuel from the Bush. Probably, also, the forest was important to them in a spiritual sense, to do with their relationship with the land and natural things.

The extent of the forest about 1850 is shown on early surveyor's maps and records as being about 240ha. In fact forest was much more extensive than this in the Temuka district at some time prior to European settlement, as shown by the numerous logs and stumps found on the farmland to this day.

Early European travellers in the area (e.g. E. Shortland 1850. The Southern Districts of N.Z.; E.R. Chudleigh. Diary 1862-1921 (Ed. E.C. Richards 1950) describe Arowhenua Bush as a prominent landmark. Like all the other forest stands on the Plains it was cut-over from the time of earliest European settlement. It also suffered a disastrous fire in the 1860s. I know of no other detailed information about the Bush, although some may exist in historical archives.

The importance of the Bush remnant, for the extension of our knowledge

of the flora and vegetation of forests of the Canterbury Plains, cannot be overemphasized. Except for Riccarton Bush in Christchurch it contains almost the only living evidence for the species-composition of the once more extensive forests of the lower Plains. The species list shows a composition similar to that of Riccarton Bush, but less varied.

A few species (Myrsine divaricata, Pseudopanax anomalus, Clematis sp. cf. marata, C. foetida) do not occur at Riccarton Bush. No doubt many species had been lost from the Bush before 1977 but nevertheless a good impression of the original forest composition can be gained.

The illustration (Fig. 2) and historical accounts show that in the 1850s and 60s a tall forest was present, dominated by matai, kahikatea and probably totara, (Podocarpus totara). It is to be hoped that at least a small patch of such forest can be maintained at Arowhenua. The dedicated work of the South Canterbury Forest and Bird Society members in striving for this is outlined in the next article and is a fine example to us all.

PROGRESS ON RESTORATION OF AROWHENUA BUSH

FRASER ROSS

An area of about one hectare was fenced in 1981 and extensive planting, started in 1979, has been done within it, mainly of Hoheria, Plagianthus and some Pittosporum propagated from seed for this purpose. Growth has been slow but steady and some trees are now over 2m high. One kohuhu has seed capsules this year.

The two Podocarpus spicatus and one P. dactyloides have responded very well since choking growth of Muehlenbeckia was removed. The matais are malformed and have had to be supported with posts, but they have been fruiting. This year one has about 40 drupes, the other 4. Last year 3 seeds germinated in the nursery and the seedlings are being carefully fostered. There are no male trees nearby so the pollen must come from