freshwater wetlands. Coastal forest is one of the least protected habitats in New Zealand. It would be a great loss if this coastal forest isn't legally protected and managed for its natural values.

Table 1. Vascular flora totals for northern Waikawau forest and scrub (F), estuary (E), dunes (D), freshwater (FW), open coastal cliffs and open rocky outcrops on ridges (CC) including Kawetoto Reef, rough pasture adjacent to the other areas (P), and their combined flora (4 native hybrids excluded)

Plant group	F	E	D	FW	CC	P	Totals
Native ferns	60	-	3	2	11	3	62
Native conifers	6	-	-	2	-	-	7
Native dicots	97	24	15	8	36	25	129
Native monocots	62	21	15	17	23	7	92
Adventive conifers	-	1	2	-	1	-	3
Adventive dicots	38	25	42	14	36	57	112
Adventive monocots	8	17	17	8	24	21	48
TOTALS	272	87	94	51	131	93	453
% native	83	51	35	58	54	16	64

Footnote – in a recent article on the role of the Nature Heritage Fund by Keith Lyons (Forest & Bird 308: 24-27, May 2003) the purchase of the coastal forest at Waikawau Bay was given as an example of the usefulness of the fund. But note that the two accompanying colour photos: one clips off the eastern part of the purchased property (p.24); and the other (p.25) isn't of the right property.

Acknowledgements
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The Awhitu Pohutukawa Tree

Graeme Platt

During late December of 1996 I was visiting Wayne and Trish Aspin's Farm at Matakawau north of Waiuku on the Awhitu Peninsula. The multitude of crimson – flowered pohutukawa trees (*Metrosideros excelsa*) located on the peninsula were ablaze with colour at the time.

During the course of the conversation regarding these trees the Aspins mentioned that the largest pohutukawa tree they had ever seen was located on a farm in Hamilton Road, Awhitu Central, a few kilometres up the road. It wasn't long before we were in the car heading in the direction of this tree. The topography of the land was like so much of New Zealand, completely unique to the locality. Much of the coastal land north of the Waikato and on the Awhitu Peninsula was formed in relatively recent times by drifting sand creating massive sand dunes now stabilised and covered in pasture with remnant patches of native bush in places.

Scattered groves of pohutukawa trees covered some of the hills in open forest more akin to Australian eucalypt forests than typical New Zealand native bush. After walking across grassy paddocks and through an open grove of superbly flowering trees, there was the giant, a tree fully deserving of a place amongst the nobility. With a branch spread of over 53 metres and a basal circumference of 15 metres (measured in December 2002) this tree clearly was no ordinary tree. The question is how do you measure these great old pohutukawa trees? Trees are normally measured at their highest point and the girth is measured at breast height. The Awhitu tree at breast height has massive spreading lateral branches. By bending the rules and measuring the girth at knee-cap height a more realistic measurement is achieved. With a height of 19 metres the Awhitu pohutukawa tree is not particularly tall tree by the normal standard of trees and yet it remains one of largest *Metrosideros excelsa* trees anywhere on earth. The total mass of this tree is enormous for any tree and most of its mass of radiating branches

Figure 1. The Awhitu pohutukawa, December 2002.

escapes measurement. Each of its spreading branches is a large tree in its own right.

I am not convinced that the famous Te Araroa tree at Hicks Bay, East Cape which has a far greater diameter at breast height due to its cluster of 22 separate trunks, is necessarily a larger tree. Separate clustered trunks with *Metrosideros* are generally caused by drifting sand burying the base of the tree sometime in the past. The Te Araroa tree has a height of 20.3 metres, a girth of 20.3 metres and a branch spread 40.3 metres.

It may be the year 2003 and a few hundred years after the commencement of scientific discovery but I expect that not many of the people who have seen the Awhitu tree would actually have recognised it as one of the greatest *Metrosideros excelsa* trees on earth. Tragically in one of the worst acts of dendrological misadventure that I have had the misfortune to witness, this magnificent pristine tree of eight years ago is now doomed. Its previous owner in his absence left cattle running unattended on the land that were starving due to the lack of adequate grass, forcing them to strip the bark off the trees in an effort to survive.

The large amounts of bark that has been stripped off the Awhitu tree has destroyed the cambium layer over a very large part of the tree that was within reach of the cattle. This has already resulted in two of the massive branches snapping through where they have been weakened and the whole tree entering a state of decline. Previously this tree was a national treasure with hundreds of years of potential life remaining, but it is now a tortured wreck.

Trees of Pah Farm Park and environs, Hillsborough

Mike Wilcox

This property, now an Auckland City Council park ("Premier Hillsborough Park") of 8 ha, was once part of Pah Farm, which originally included what is now the Masonic Village, the Saint Francis Friary, Marcellin College, Monte Cecilia, Monte Cecilia School, Liston Retirement Village, and the demolished Marcellin Hall. In earlier times there was a Maori pa known as Whataroa on the hill top. The soil is a reddish-brown volcanic loam derived from basaltic deposits from nearby volcanoes, overlying Waitemata Sandstone. In Hillsborough Road near the entrance to Saint Francis Friary can be seen a well-exposed tuff bed – layers of fine volcanic air-fall deposits from the Three Kings Volcano which erupted 16 000 years ago.

Pah Farm was established in 1846 by William and Mary Hart, who also had farmland on the northwestern slopes of One Tree Hill. It seems that William Brown and John Logan Campbell managed the property for the Harts, who went to live in California, and eventually Brown bought it c. 1852. The Hon. James Farmer lived there from 1855 to 1866, with various tenants occupying different pieces of land. Thomas Russell, who owned stock and lands as far south as Canterbury, purchased the farm in 1866, and subsequently sold it to James Williamson and family in 1879. Williamson ran a market garden here, and it was he who built the mansion that is now called Monte Cecilia. The stately home was sometimes known as "Williamson's Castle".

The farm and mansion and expansive terraced pleasure grounds during 1870's - 1880s were at the centre of powerful corporate businesses associated with agricultural production -stock (cattle, horses), crops, horses, and town milk supply that stretched from Gisborne the Auckland. There were various subsequent owners, with the Sisters of Mercy of the