Return to previous file: sr90.pdf

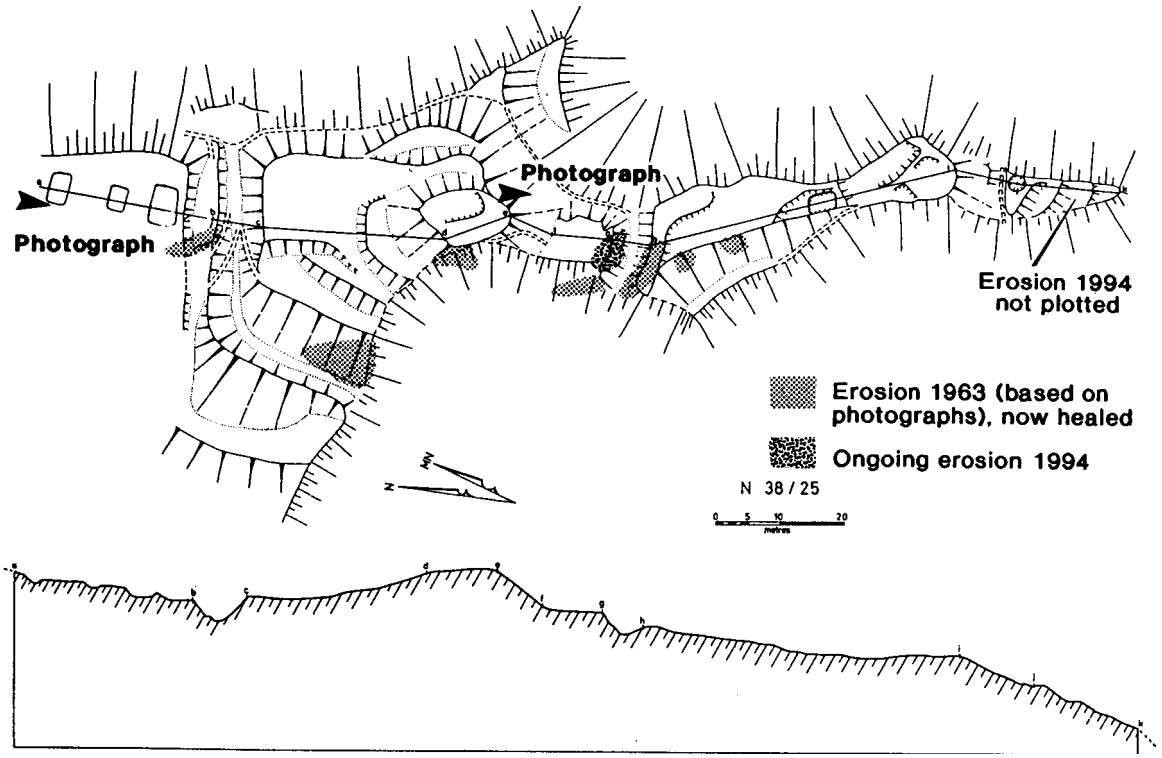


Figure 12 Plan of Station Bay pā showing erosion in 1963 (from photograph on N.Z. Archaeological Association site record) and 1994 field observations. Original drawing courtesy of Auckland Institute and Museum.

Acaena novae-zelandiae and *Muehlenbeckia complexa* have spread through the grassland or scrambled over its surface, and on dry, exposed sites the grass *Rhytidosperma ?racemosa* remains dominant. Tauhinu *(Cassinia leptophylla),* manuka, harakeke and aruhe (bracken) are scattered over windswept coastal slopes (Fig. 13(b)). The pā site formerly supported several pōhutukawa, but these have died, presumably through possum browse. The possums have now been removed and pohutukawa are likely to recolonise from a nearby remnant stand of large trees. For detailed views of vegetation, see Figure 14.

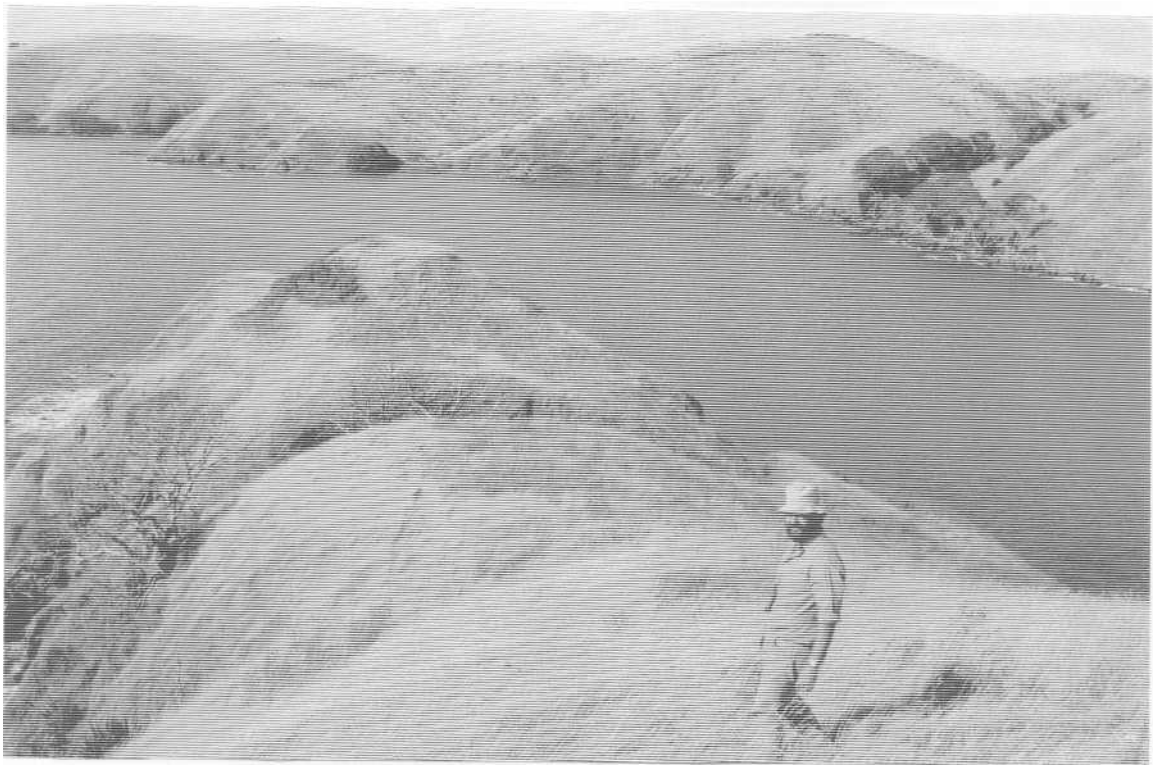
This vegetation is in stark contrast to that dominating the island and indicates an overall trend that can occur when grazing is excluded. This trend may be summarized as follows:

(1) mixed annual and perennial grasses and introduced herbs, maintained by grazing;

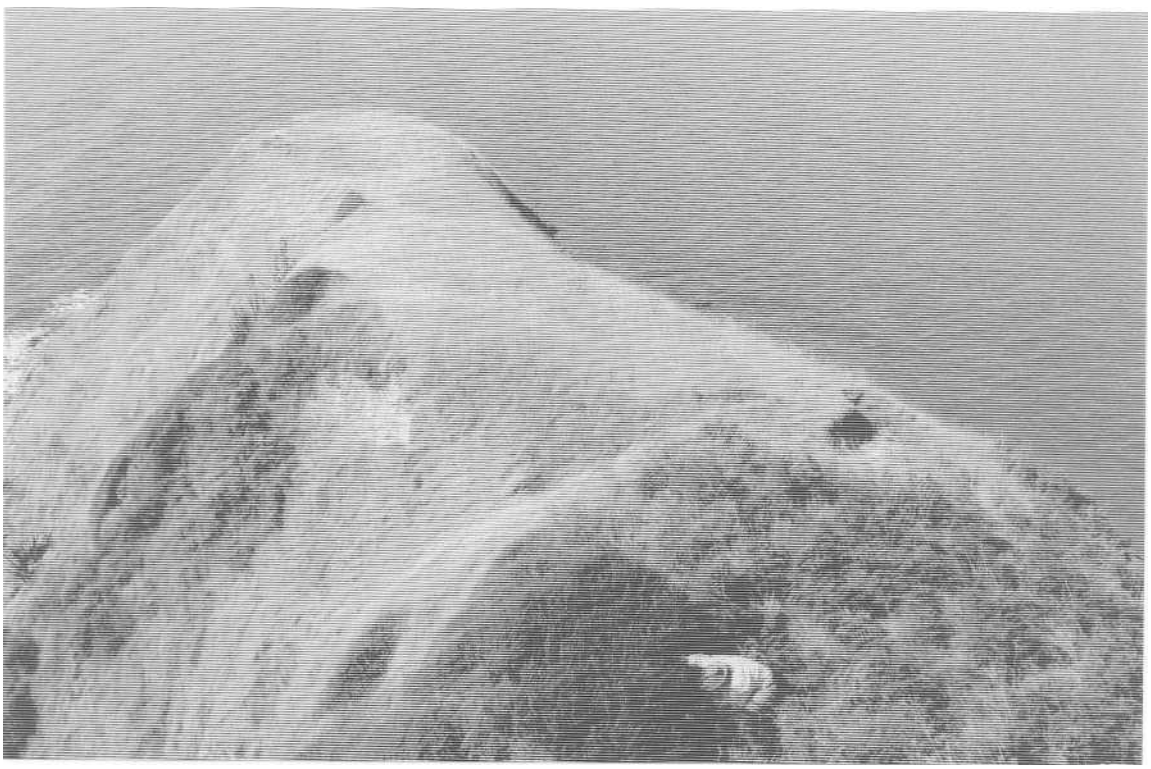
(2) perennial introduced grasses and herbs (often biennial) increase after fencing excludes stock;

(3) indigenous grassland with indigenous herbs, vines and shrubs, plus residual exotics;

(4) indigenous shrubland (manuka, tauhinu), and fernland (bracken);



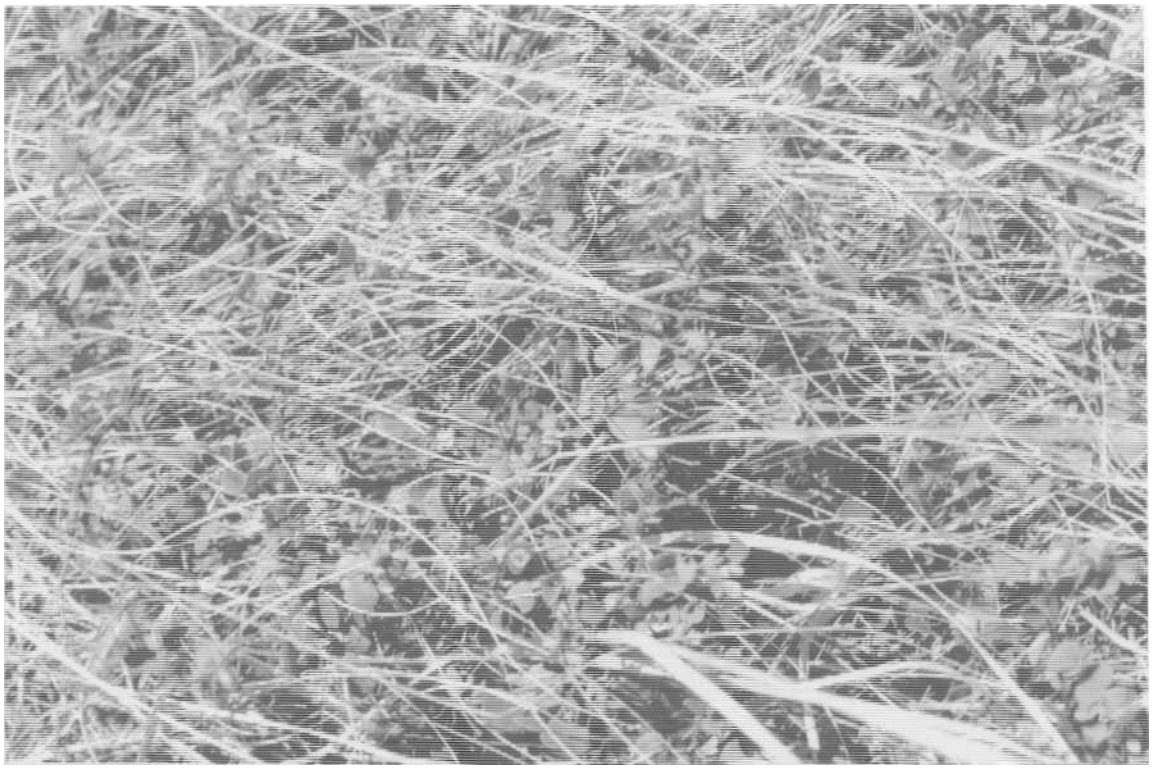
13(a)



13(b)

Figure 13(a), (b) Station Bay pā (R10/26) Motutapu Island. (a) The fence-enclosed headland, showing the outer ditch with dead pohutukawa. Grassland by figure has been ungrazed for 30 years and is dominated by perennial grasses such as cocksfoot, paspalum and pātītī *(Ehrharta stipoides)*. The dense sward discourages colonisation of woody species. (b) The inner defended area where formerly open, eroded areas have been colonised by bracken, mānuka and tauhinu. Compare with Figure 12.

14(a)



14(b)

Figure 14(a), (b) Station Bay pā, vegetation details. (a) The banks of the ditch are colonised by pōhutukawa (killed by possum browse) and the scrambling *Muehlenbeckia complexa*. (b) Grassland protected from grazing is gradually colonised by semi-woody plants such as *Muehlenbeckia complexa.*

(5) indigenous forest (pōhutukawa).

After 30 years behind a fence, much of Station Bay pā has a vegetation which combines phases 2 and 3 but the stage may be set for rapid change to phase 4, dramatically altering the landscape visibility of this, the most prominent and deeply sculpted of the pā on the island.

Unwanted weeds can establish during all phases of this sequence, although the dense sward created by *Ehrharta stipoides* appears to discourage colonisation. *Araujia sericifera* (moth plant) establishes in ungrazed grassland, Apple of Sodom (*Solanum sodomeum*) is extensive on intensively grazed sites, and *Rhamnus alaternus* (Italian buckthorn) and *Solanum mauritianum* both occupy disturbed understories beneath pōhutukawa. There is no alternative but to remove these plants where the scale is practicable, or allow ecological changes over the longer term to exclude them where they are too widespread. That the latter process can occur is ably demonstrated by the gradual exclusion of cocksfoot by *Ehrharta stipoides* (a process which has been observed in other parts of New Zealand also).

Management

Stock should continue to be excluded for long term re-establishment of indigenous cover, especially pātītī. We fully concur with current plans to re-align the existing coastal fencing to allow for better protection of a wide range of shrub, forest and historic values. As we have noted, on the Station Bay pā, fencing should allow for the re-establishment of *Ehrharta stipoides* grasslands.

Indigenous shrubland such as mānuka and harakeke should be encouraged on exposed coastal slopes. Comparison of 1963 and 1994 photographs illustrate colonization of eroding areas by shrubs rather than grasses. Where small areas of erosion persist or get larger, these species could be planted or seeded. Care should be taken not to compromise landscape visibility and historic values. If there is a sudden acceleration of shrubland into the grassland cover of the pā, then it may be desirable to remove seedlings (using volunteer labour) so that the pa retains its landscape prominence. Pohutukawa should be encouraged on specific surfaces (e.g., steep coastal slopes, upper slopes of the pā site away from specific structural components of the pā) provided the features would not be damaged by roots. There are a range of other trees characteristic of the coastal forests of Motutapu which could equally be encouraged (e.g., mangeao, tawapou) to form patches of coastal forest in the wider area surrounding the pā.

3.3.3 Otāhuhu pā, R11/218 GR 825890 (N42/222).

Located at Otāhuhu Point, **the** pā is bordered on two sides by a steep slope to the sea, and is isolated from the hinterland by a ditch. It is one of the best examples of a pā on the island, and warrants special attention to retain its cultural features for viewing. The ditch and bank cuts off a broad headland, and forms a dog leg to follow around the

easy slopes to the north of the enclosed area. There is also an outer transverse ditch and bank. The total area enclosed is about 80 x 60 m.

Vegetation

The coastal forest which covers the steep slopes is of interest for its intrinsic site-conservation, cultural, and landscape values. The original pōhutukawa forest is gone from the immediate slopes leading up to the pā and in its **place is a secondary forest** of karaka, possibly planted as a food source. The karaka, while associated with several understorey plants like rangiora (very uncommon on Motutapu), kawakawa and māmaku (all of which had significant uses to Maori) form a distinctive "gallery forest" in which the litter-covered ground is open, the dense canopy supported by attractive clean trunks, and the features of the pā remain visible. Surrounding the karaka is a considerable number of tawapou (*Planchonella novae-zelandiae*), all heavily fruiting at the time of our visit. The lack of kereru (pigeon) may be responsible for the lack of significant fruit dispersal. These trees were possibly planted to create a "pā tawapou", a concept explained in a personal communication to one of us (PS) by Mr Bill Stirling, a kaumatua of Whānau a Apanui. The fruits attracted kereru (for hunting as food), and the beautiful seeds were used as items of jewellery and perhaps trade. The ditch is embraced by large pōhutukawa with horizontal limbs lying close to the ground and even rooting in the ancient ditch. Although soil disturbance is inevitable as a result of this clonal process, the magnificence of the trees should serve as testimony to the long mutual history between the pā inhabitants and the natural landscape.

The platform is heavily grazed and cattle camp within the zone of protection afforded by surrounding trees. The vegetation of (mainly exotic grasses) has been greatly damaged by trampling. *Rhamnus* is forming a border to adjacent coastal forest and should be closely monitored for any spreading into the forest understorey.

Management

The existing fence traverses the inner platform and excludes the perimeter of karaka and tawapou. The site will soon be fully fenced. The ungrazed grassed area outside the fence on the inner platform is dominated by tall cocksfoot with no sign yet of pātītī becoming dominant. Although of good conservative value, this tall grass will obscure the relatively shallow and rounded relief of the ditches and banks. As the cocksfoot becomes more shaded by the fringing forest, it will lose its dominance and be replaced by pātītī.

Re-alignment of fencing to exclude stock from all parts of the pā site is essential to maintain conservation status, restore mana and encourage a healthier vegetation. The tawapou have been damaged by stock trampling (and perhaps possums) in the past, and need further protection by re-establishing understorey shrubs such as kawakawa. Removal of stock will, however, encourage a growth of weeds. Pātītī is growing there now and may well provide a sward to exclude weed growth, but is likely to require active planting, if stable native grassland is sought.

Because of the overall forest setting of the site, it could be argued that the whole area is best suited to a treeland cover, particularly given the possible "plantation" nature of the existing karaka and tawapou groves. On balance, however, maintaining the platforms in grass is preferred. Enhancement of the health of the existing stands of tawapou and maintenance of an especially graceful suite of pōhutukawa, is essential. The pā will become an integral cultural part of the visitor experience of any round-island visitor track that may be envisaged. At present it is somewhat remote from visitor pressure.

3.3.4 **Pā**, R11/213 GR 797900 (N42/140).

This site lies on the ridge-line to the south-east of the causeway on the Motutapu Island end. In 1963 it was described by its original recorder, Molly Nicholls, as badly eroded. In 1973, and again in 1977, Janet Davidson noted that a combination of further road cutting and stock-induced erosion had reduced the visibility of the pits on the site to an even greater degree. At the time of our visit, site features were indistinct but relatively stable. This type of site, which has suffered dreadfully in the past, warrants fencing out and maintenance in tall grass or shrubland.

Continue to next file: sr90b.pdf