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CABBAGE TREES ON PA
INTERIM REPORT: TARANAKI-WANGANUI

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INTRODUCTION

As part of a review of the manual "Archaeological site stabilization and vegetation management: case studies" (Jones and Simpson 1993, in prep.), I inspected pa sites in Taranaki and Wanganui and noted features that may have ethnobotanical significance. Ti rakau (cabbage trees, *Cordyline australis*), karaka (*Corynocarpus laevigatus*) and harakeke (flax, *Phormium tenax*) are frequently encountered. Of the 17 sites visited in May 1993, 10 had cabbage trees growing on them. Sometimes adjacent patches of bush have totara trees with bark strips or patches removed, for shelter or patua (bird storing baskets) (Simpson 1988). These occurrences breathe life into the sites because, literally, they are living reflections from the time when the pa was occupied. It is my contention that the vegetation and the earth features of a site are part of the same resource. Indeed, the surrounding landscape is frequently, if not always, a critically important partner to the location, features and activities carried out at a site.

Observations recorded so far are exploratory and need a social dimension to develop a more complete sense of history. Nevertheless, the Interim Report is prepared on the grounds that the cabbage trees noted are frequently in very poor health, and some are dead from the epidemic disease Sudden Decline (Simpson 1993). Hence protective management is often urgently needed.

BACKGROUND

The occurrence of cabbage trees on pa is a reflection of certain ecological characteristics, as well as a range of uses or values to Maori. Ecologically, cabbage trees are forest edge plants capable of growing in the open. Their anatomy adapts cabbage trees to both wet and dry soils, salt-laden winds, a wide range of altitude (sea-level to about 1000 m), animal damage and fire. For example, the wood, which provides the physical strength to support the tree, stores a large quantity of water, while the underground stem or rhizome stores food reserve, and continually produces new roots and can form new leafy shoots if the existing tree is damaged. Animals can destroy the bark of a cabbage tree but it will continue to grow because the "wood" is composed of both water and food conducting tissue. (In most trees wood consists of water conducting tissue only, and ring-barking removes the food-conducting tissue so that the tree dies.) These ecological features mean that cabbage trees can

survive extreme hardship for decades and they account for the fact that cabbage trees are frequently the only indigenous tree that survives in the agricultural landscape.

Maori have a whakatauki, or proverb, that recognises the amazing ability of cabbage trees to survive damage (Williams and Chrisp 1992):

> "E hara e te ti, e wana ake"
> (The death of my loved one is not like the cabbage tree which sends forth new shoots.)

It is the quality of persistence and regeneration - "pro-life" qualities - that make cabbage trees valuable as markers of burial sites and boundaries and other important places: they are reliable. The ecological adaptations of cabbage trees also led to a range of other uses. The leaf-fibres are strong and were used to make cordage of many kinds. The leaves themselves can be woven into nets, capes, baskets and sandels (Goulding 1971). The growing stems (koata) are edible, and the underground rhizomes and stems of young plants, when cooked in a hangi, produce kauru, preserved sugar that was an important item of food south of the kumara zone (Fankhauser 1989). Maori thus had a

Figure 1. Te Ruaki pa, Hawera, Q21/5. The three old cabbage trees have declining health with ongoing bark chewing by stock and crown die-back. If protected from stock all trees will resprout and recover.

wide range of uses for cabbage trees, and a range of names for the different regional forms, or provenances.

Cabbage trees were moved around the country so that different types can now grow side by side - e.g. tarariki (narrow-leaved, dry country form) and wharanui (large-leaved coastal form) grow together in the Wairarapa. Ngai Tahu grew large orchards of cabbage trees to harvest as kauru in South Canterbury. It is possible that the widespread occurrence of cabbage trees in Eastern North Island hill country relates more to Maori transplanting than natural migration. Indeed the overall distribution of cabbage trees may reflect human impacts far more than natural patterns. Many place names (e.g. Puketi, Tirau, Temuka) record the landscape importance of cabbage trees.

Although the degree of human influence is now difficult to decipher, there is little doubt that cabbage trees were planted on pa and other places of settlement. A number of pa observed in Taranaki have one or more cabbage trees whereas there are none in the immediately surrounding landscape. They have been brought there to serve as markers and providers of materials and food. They persist today because of their remarkable powers of survival and regeneration.

OBSERVATIONS

Turuturumokai, Hawera; NZAA site no. Q21/4

Cabbage Trees were planted around the platform in 1940 as a New Zealand Centennial year planting. They are robust young adults now, about 50 in number. Three of them have died of Sudden Decline. Although the area is grazed there is no negative impact of animals on the cabbage trees as yet.

Te Ruaki, Hawera (Confluence of Mangimangi Stream and Tangahoe River); Q21/5

There are three very old cabbage trees on the edge of a terrace (Figure 1). Two have multiple trunks which may have replaced or more likely split from the original trunk. One has a single, badly damaged, small trunk which is probably the last remnant of the original trunk and will soon rot away completely. All the trunks have had long-term animal damage and one has just recently had the bark chewed. These trees will undoubtedly die in the relatively near future unless protected from stock because no replacement shoots from the underground rhizome can survive. A remnant grove of karaka occurs just beyond the upper boundary of the pa.

Upokongaro (Wanganui - Raetahi Road); S22/39

Numerous hill-side cabbage trees flank a pa site. A ditch and bank fence passes through them. One cabbage tree is dead from Sudden Decline. Karaka

grow nearby along the river bank.

Opotaka (Lake Rotoaira); T19/69

There are numerous naturally occurring cabbage trees around the lake and in regenerating shrubland on surrounding hills. On the settlement site itself there is a particularly large specimen of the large-leaved "Volcanic Plateau" form. It is multiple-trunked with numerous relatively young basal branches that have probably grown up since the site was interpreted and protected in the early 1970s.

Waiu (inland from Waiouru on the divide between Wanganui and Hawkes Bay); T21/1, 2

These tussock grassland pa were built in 1880 using materials from adjacent remnant patches of bush, which supplied cedar for palisades and totara bark for shelter. There is a single ti toi (*Cordyline indivisa*) the leaves of which would almost certainly have been used for capes. Feral horses are gradually destroying the patches of bush, which, along with the two archaeological sites and the intervening gully wetland (water supply), should be fenced as part of a unified "pa landscape".

Pukerangiora (Waitara R.); Q19/69

Adjacent to the actual reserve boundary, but still on the old pa site, there is a large cabbage tree commanding the highest point (Figure 2). The tree is double and half has been killed by Sudden Decline. Both crowns bear masses of epiphytes (*Astelia* and *Collospermum* (epiphytic 'lilies')), ferns and *Earina* orchids, a typical assemblage in old cabbage trees). Numerous vertical aerial cabbage tree rhizomes project down through the "peat" formed by the epiphytes, a feature that I have not observed before.

Cabbage trees are not common in the surrounding landscape, and the one on the pā has undoubtedly played a significant role on this very important pa. The living half that remains should be protected from stock, and perhaps reproduced to maintain its geneology. It has a distinctive, narrow, upright shape unlike the typically broad-crowned north-Taranaki provenance or form.

Okoki (Sir Peter Buck's Memorial pa); Q19/24

There are three cabbage trees growing next to a very large karaka on a flank of the pa outside the existing fence on reserve land leased for grazing. The cabbage trees have had a great deal of stock damage to their trunks, but the largest of them, with a double trunk, has a vigorous crown (Figure 3).

Hamiora Raumati (kaumatua of Ngati Mutunga) informed me that this site had several karaka trees that were planted long ago and are special in having

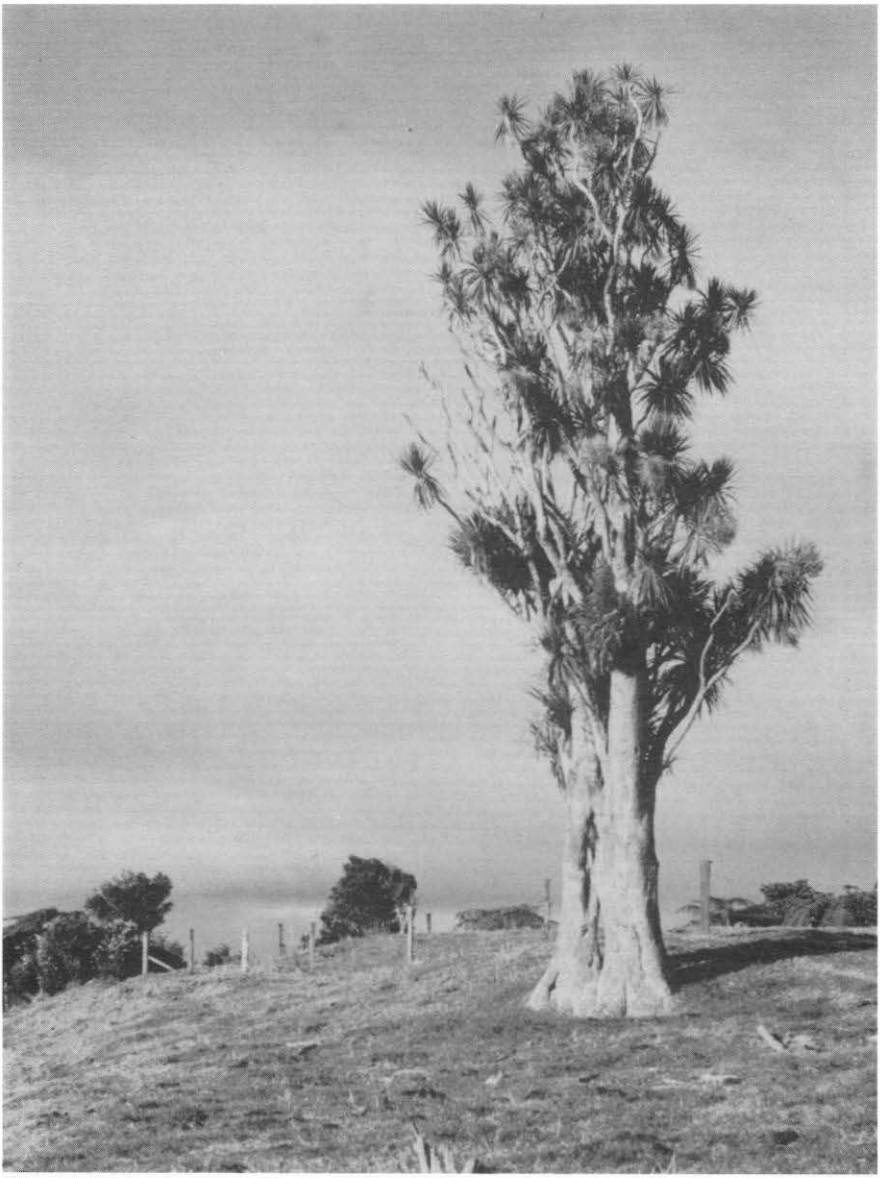

Figure 2. Pukerangiora pa, Waitara, Q19/69. The old cabbage tree occupies the highest point on the pa. Half of this double trunked tree has died from Sudden Decline. Epiphytic lilies suggest relatively recent bush clearance. The narrow crown form is not characteristic of Taranaki cabbage trees.

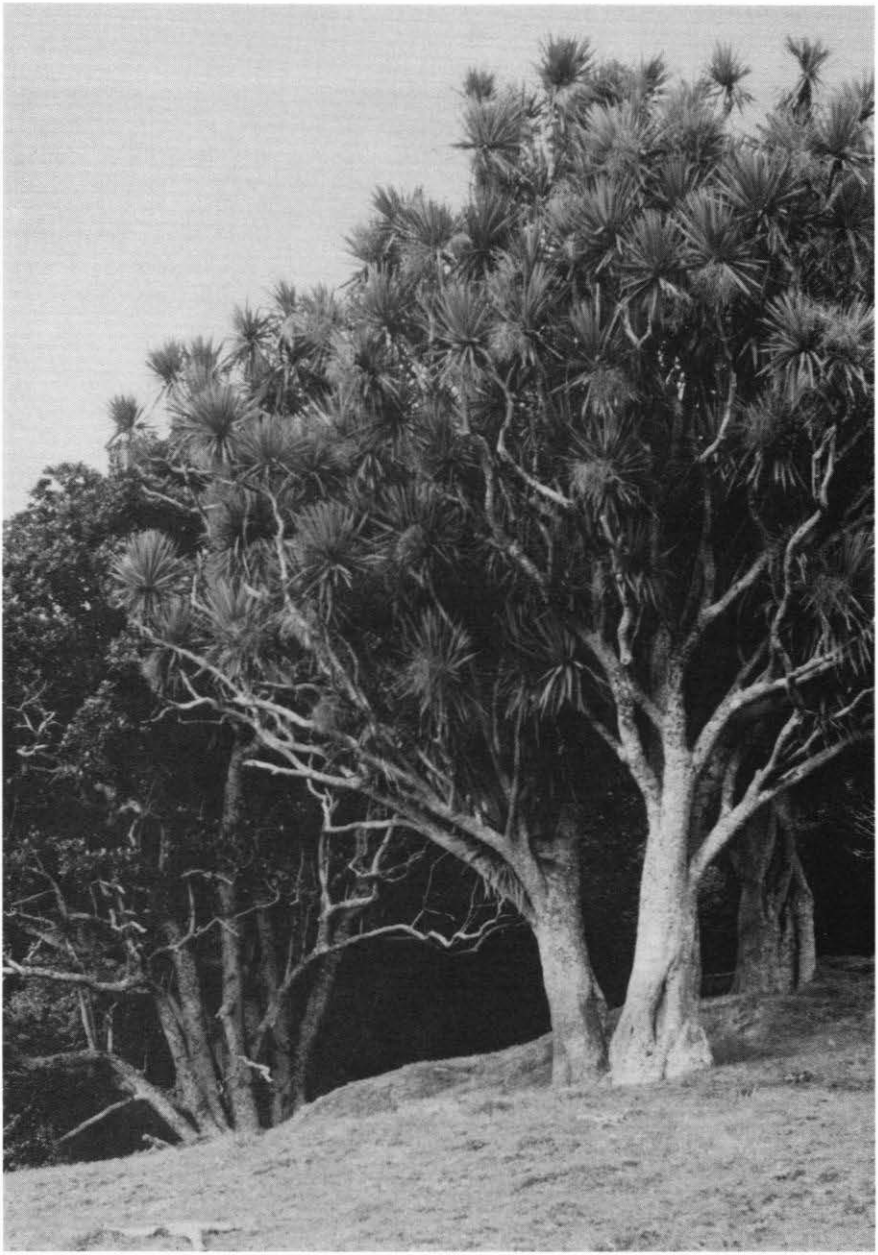

Figure 3. Okoki pa, Urenui, Q19/24. Three cabbage trees, one with a severely stock-damaged trunk, occupy a knoll outside a fenced reserve. Adjacent are large karaka noted for exceptionally large seeds. Both species were planted as sources of food and materials.

very large (often double) seeds used as a source of food. There are several large karaka trees inside the fence and many younger trees which show various stages in the reversion to typical seed size. The large seed of these karaka represents a condition that was selected from nature and maintained in cultivation; seed size declines with subsequent reproduction.

Hamiora Raumati wants the fence moved to enclose the cabbage trees and remaining karaka tree (others have been chopped down by the lessee). I strongly support this from the point of view of the cabbage trees' health.

Te Urenui (Urenui River mouth); Q19/8

There is a large, double-trunked cabbage tree in bush at the edge of the pā platform on the crest of the hill. The platform has numerous rua pits and is regenerating from grassland to bracken. The cabbage tree is healthy and is growing with rewarewa, karaka, puriri, mahoe and kowhai.

Katikatiaka (North of White Cliffs); Q18/53

This is a remarkable pa (Ngati mutunga) on the edge of coastal cliffs. One of the platforms is protected by low rock cliffs that exclude stock, and more or less natural vegetation occurs.

Two small cabbage trees stand like sentinels on the crest of the site, among a dense ground- cover of *Poa anceps*, harakeke (a range of forms) and kawakawa (Figure 4).

Rewarewa (North of New Plymouth); P19/165

This coastal pa, protected on the inland side by the Waiwhakaiho River, has several cabbage trees within its border and several around the boundary growing with harakeke and karaka on the river-cut cliff.

The pa cabbage trees have a range of sizes and probably ages. All have single trunks; the largest is hollow and the trunk is splitting into two. Stock camp under the trees and have eroded a pad of exposed ash-soil around each tree. Ironically the trees are "causing" erosion of the pa features. The trees should each be ring-fenced to prevent this and allow resprouts to grow.

GENERAL COMMENT

(1) Cabbage trees are present on most of the pa sites in Taranaki and Wanganui visited in the course of a broader vegetation survey (May, 1993) sometimes being the only tree present.

(2) Their specific locations on the sites (e.g. margins or high points) and their

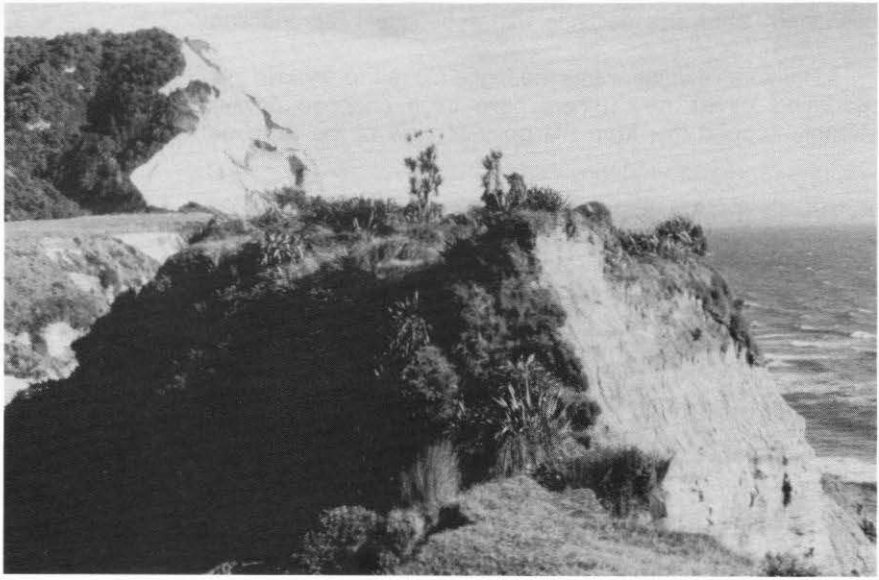

Figure 4. Katikatiaka, north of White Cliffs, Q18/53. Sentinal cabbage trees occupy a bluff protected platform with native vegetation. The trees are small probably because the soil only thinly covers the underlying papa.

infrequency in the surrounding landscape suggest that, in some cases at least, they have been planted. Of the 10 sites with cabbage trees only one site (Turuturumokai) was clearly planted in recent times and in only two other sites (Opokongaro and Rewarewa) is there evidence that they are natural.

(3) The cabbage trees are usually very old, often with multiple trunks (2 or 3, or numerous resprouts where protected from grazing (e.g. Opotaka)), or if with a single trunk then suggesting a recent origin from the buried rhizome of a former tree.

(4) The trees are frequently in poor condition from stock damage to the bark and trunk, soil erosion around the base, and Sudden Decline disease.

(5) They are commonly associated with karaka trees and harakeke. Both

harakeke and karaka can be variable in character, suggesting the planting of intentionally selected forms.

SIGNIFICANCE

Cabbage trees were obviously planted on pa sites for their many uses: food, fibre, clothing and shelter, attracting birds such as kereru, marking special places (e.g. urupa) or events (e.g. placenta burial) or particular cultural values (mauri, resident spirits, ceremonial occasions). The Maori uses of ti rakau are reviewed in an annotated bibliography by Williams and Chrisp (1992).

Today, the cabbage trees present on pa (unless recently planted or regenerated naturally) are a living link with the former human inhabitants. The trees have survived centuries of change, particularly the agricultural changes which accompanied European colonisation. In a spiritual sense they are sentinels of older ways of life.

For these reasons cabbage trees on pa are part of the site and are entitled to equally careful management.

MANAGEMENT

Most of the cabbage trees are in poor health and are gradually dying. Some have Sudden Decline. All cabbage trees that can be assumed to have been planted by the former pa inhabitants and therefore have cultural significance, should be protected from stock. Resprouting from the base should be encouraged. This requires fencing or some other form of retirement.

Trees that are known to be particularly important could be propagated and the young ones planted next to the parent. Any actions should have the support of the tangata whenua for each site.

CONCLUSION

There is opportunity to extend observations of Taranaki and Wanganui to other parts of the country (e.g. cabbage trees on pa have been noted in Bay of Plenty and Coromandel). Particular aspects of significance may be learned from talking to kaumatua and others. There are undoubtedly fascinating stories about some of these trees, and this history would help in the general awareness and management programme for cabbage trees, one of the country's most important rakaurangatira (chiefly tree).

Cabbage trees on pa represent one of many aspects of ethnobotany in New Zealand that are beginning to receive long overdue scientific, cultural and conservation attention.

ACKNOWLEDGEMENTS

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