4.3 HARAKEKE WEAVING PEOPLE TOGETHER

SUE SCHEELE (MANAAKI WHENUA)

Me te wai kōrari

Like the honey of the harakeke flower

"On my arrival in this country the Māoris…would often inquire after the vegetable productions of England; and nothing astonished them more than to be told there was no harakeke growing there. On more than one occasion I have heard chiefs say, 'How is it possible to live there without it?' and 'I would not dwell in such a land as that.'"[1]

[1] William Colenso 1892. *Vestiges: Reminiscences: Memorabilia of works, deeds and sayings of the ancient Māoris*. Transactions of the New Zealand Institute 24: 445–467.

HARAKEKE ĀTAAHUA

While no longer essential for our very survival, it is hard to think of another plant that is more important to and symbolic of customary Māori life than harakeke (New Zealand flax, *Phormium tenax*), whether for medicinal uses or for creating the myriad of domestic items crucial to day-to-day living. Today, on the marae (meeting house) and in wānanga (learning forum), raranga (weaving) tikanga (values and practices) and techniques have been revitalised and are flourishing.

Harakeke grows throughout Aotearoa New Zealand and is commonly found in lowland repo (wetlands) and along awa (rivers), and in coastal areas on estuaries, dunes and cliffs. However, large wild stands remaining are much diminished. Harakeke is a common feature of riparian plantings. The bushes help prevent stream bank erosion and can intercept nutrient run-off from surrounding farmland. The roots tolerate submersion and the tough bush can withstand the drag of fast-flowing water.

The flowers are a wonderful source of high-quality pollen, essential for bee health, and tuī, bellbirds, and starlings throng to collect the nectar. It isn't palatable to animal pests such as possums and rabbits, though cattle will strip the green matter off the leaf leaving the fibre exposed. The bushes are also home to many native insects, including caterpillars such as the anuhe (windower, also known as moka and mūharu) and the mokamoka harakeke (notcher) that can damage the leaves so they are useless for weaving.

Weavers hui, Te Kaha. Photo: Sue Scheele

Previous page: Harakeke seed capsules. Photo: Sue Scheele

CONSIDERATIONS FOR RESTORING HARAKEKE

Plants are easy to establish by taking divisions (fans) from mature bushes, which is a cost-effective approach for restoration projects. For minimum maintenance, plant the fans close together, so there is less opportunity for weeds such as blackberry to invade.

A general principle of restoration planting is to have eco-sourced (plant species known to be native to the local area) material. For harakeke, this means using divisions from plants growing wild in the area, or collecting seed off those bushes and propagating them. Seed should be chilled (put in the fridge) for 12 weeks to ensure good germination.

What is a pā harakeke?

A pā harakeke is where varieties of harakeke, selected for their good muka (fibre) or raranga (weaving) qualities, are planted together for easy access and maintenance.

As with all restoration projects (particularly when focused on one species), there are some key matters to consider with the whānau (family):

- **Why do we want to restore harakeke?** For weaving? For other plants and animals? For water quality improvement? All of the above?
- **What is the best way to restore harakeke?** Restoration plantings often include harakeke, preferably sourced from the local rohe (area). The plants themselves are robust, long-lived, wind tolerant, and frost resistant. Once established, harakeke are able to withstand flooding and drought.
- **Are there specific varieties of harakeke that are important to the whānau/rōpū (group)?** Some varieties may have disappeared, or others are at risk of disappearing.
- **Do we want a pā harakeke?** If we want to develop an area to grow weaving varieties (pā harakeke), is there a 'champion' in the whānau to keep up the maintenance? And what is the succession plan to ensure there is a champion in each generation to safeguard the long-term sustainability of the pā harakeke?

Harakeke on West Coast river. Photo: Sue Scheele

RESTORING HARAKEKE FOR WEAVING

Harakeke in restoration plantings can be difficult to access and the leaves are not necessarily of good quality for raranga or muka (fibres). Cultivating harakeke is a way to ensure vigorous, healthy bushes that will provide superior leaves and fibre for specific weaving purposes.

Think of the pā harakeke as an orchard or garden. Many of the same principles apply. We choose varieties that best suit the site and climate, and the weaving purposes we have in mind. We space the plants so they have room to grow, don't have to compete with other plants for their nutritional requirements, and so we can easily get to them when it's time to harvest or prune. Ideally, we keep the plot weed-free and use whichever means we find acceptable to control pests and diseases.

Choosing harakeke varieties

Local weavers will know which types of harakeke are best to use. Are you mostly interested in weaving kete (basket) and mats, or using muka for korowai (cloak) making? Do you want to make piupiu (skirt-like garment) for kapa haka (Māori performing groups)? Are there beginners or schoolchildren needing soft-leaved bushes to practise with?

Suitable varieties may be available through local weavers. Another source is the Rene Orchiston Collection maintained by Manaaki Whenua at Lincoln.

Vegetative division or seed?

To ensure a plant has the same properties as the parent bush, take a division from it (a fan with some root material attached). If we plant seeds, we can't be sure whether the characteristics of the resulting bush will be what we want. In botanical terms, harakeke preferentially out-crosses, i.e. the pods develop best when the flower has been pollinated by pollen from a separate plant. And just like people, the progeny of two harakeke bushes may have different characters from their parents.

Seedlings also take longer to mature, about 6–8 years. Plants grown from root stock take about half that time.

Choosing a site

Although harakeke is naturally associated with wetlands, including swamps, the best quality plants for weaving grow on fertile, well-drained soil. Choose a sunny site. Avoid growing harakeke under large trees or in too shaded an area.

Planting time

The best time for planting depends on growing conditions in your rohe.

Autumn/winter is a good time for transplanting. But in very cold areas, wait until spring. We generally don't transplant harakeke when the kōrari (flower stalks) are emerging, or in the dry summer months.

Harakeke planted in weed mat. Photo: Sue Scheele

Kōrari, harakeke flowers. Photo: Sue Scheele

Preparing a site

The planting area should be cleared of perennial weeds. If appropriate, use glyphosate (RoundUp®) to clear the site. In planting experimental trials throughout Aotearoa, we used weed matting and found it very effective in reducing maintenance time. It had the added advantage of keeping the soil moist. Lay the matting down first, and then poke holes in it to plant the fans. Old wool carpet is also good to use, because it will rot away nicely as the harakeke grows.

Dividing harakeke. Photo: Sue Scheele

Harakeke fans ready for planting. Photo: Sue Scheele

Planting the harakeke

Taking fans off the parent bush can be hard work! If possible, choose a time when the soil is moist. We like to use a long-bladed planting or trenching spade, a grubber, or a crowbar to dig around and get under and behind the fan we are lifting.

Divided fans are usually trimmed of outer leaves, leaving the rito (growing shoot) and the two parent leaves on either side (awhi rito or mātua). The parent leaves should be cut back if too long, but it is a good idea to have some protection of the rito. If possible, plant the harakeke fans together in groups of three. This will give them a good start.

The traditional way to plant harakeke is to 'plant the puku (stomach) to the sun', so that the bulge on the fan faces halfway between the rising and setting sun. This protects the baby fans, which will emerge at the back of the clump, and gives them shade and moisture.

Allow at least 3 metres between each clump. This looks like a ridiculously large gap at first! This spacing will allow good air movement among the plants as they grow, which helps prevent build-up of scale and fungal diseases, and allows easier access for trimming and harvesting.

If the soil is poor, apply general fertiliser containing phosphate. Plants will also benefit from regular watering.

Pā harakeke. Photo: Sue Scheele

WAHAKURA

Harakeke varieties with long leaves of medium strength are best suited for weaving wahakura. Wahakura is a bassinet for infants ranging from birth to 6 months of age. It provides a 'safe sleeping space' and allows pēpe (baby) and māmā (mother) to remain close, which is important for bonding and breastfeeding. The wahakura protect babies when they are sharing a bed with their mātua (parents).

Wahakura made from harakeke by Katarina Tawiri. Photo: Sue Scheele

Maintenance

Keep the area around the base of the plants weeded and trim dead leaves. To reinvigorate the bush, trim each fan back to the central three leaves – the rito and the awhi rito. We usually do this in winter. Another time for pruning is when the leaves are harvested. Take the leaves required, and then clean the rest of the bush. Pruning results in vigorous growth of good quality leaves and helps keep insect pests and diseases at bay.

Use a sharp knife for cutting, not secateurs. Cut the leaves on an angle at the base of the fan. This is to ensure that rainwater flows to the ground and doesn't rot the new growth. It's also safer not to have sharp blades sticking out where they can jab people working around the bush.

Some weavers prefer to cut off the kōrari when they emerge, so that the plant's energy goes into leaf growth rather than flowering. If a pā harakeke of 'imported' varieties is planted close to wild plants, cutting off the kōrari also ensures that there is no seed contamination of local types.

Traditionally, old leaves and weaving scraps were placed back under the parent bush. It is best not to do this. This material provides a home for the insects that chew the harakeke leaves. Keep the bushes clear of dead leaves, weeds, and debris.

Dividing harakeke for orders. Photo: Sue Scheele

WANT TO LEARN MORE?

Note: If you are having problems with the hyperlinks below, try copying and pasting the web address into your browser search bar.

References

Craig JL, Stewart AM 1988. *Reproductive biology of Phormium tenax: A honeyeater-pollinated species*. New Zealand Journal of Botany 26(3): 453–463. Full paper available from: www.tandfonline.com/doi/abs/10.1080/0028825X.1988.10410647

Harris W, Woodcock-Sharp MTA 2000. *Extraction, content, strength, and extension of Phormium variety fibres prepared for traditional Māori weaving.* New Zealand Journal of Botany 38(3): 469–487. Full paper available from: www.tandfonline.com/doi/abs/10.1080/0028825X.2000.9512697

Harris W, Scheele SM, Brown CE, Sedcole JR 2005. *Ethnobotanical study of growth of Phormium varieties used for traditional Māori weaving*. New Zealand Journal of Botany 43(1): 83–118. Full paper available from: www.tandfonline.com/doi/abs/10.1080/0028825X.2005.9512946

Forrester GJ, Peltzer DA 2005. *Varietal differences and environmental effects on leaves of Phormium harvested for traditional Māori weaving*. New Zealand Journal of Botany 43(4): 791–816. Full paper available from: www.tandfonline.com/doi/abs/10.1080/0028825X.2005.9512991

Harris W, Scheele SM, Forrester GJ, Pahewa E, Te Kanawa K, Murray M 2007. *Varietal differences and environmental effects on the characteristics of leaf strips of Phormium prepared for traditional Māori plaiting*. New Zealand Journal of Botany 45(1): 111–137. Full paper available from: www.tandfonline.com/doi/abs/10.1080/00288250709509708

Harris W, Scheele SM, Forrester GJ, Te Kanawa K, Murray M, Pahewa E 2008. *Varietal differences and environmental effects on fibre extracted from Phormium leaves and prepared for traditional Māori weaving.* New Zealand Journal of Botany 46(4): 401–423. Full paper available from: www.tandfonline.com/doi/abs/10.1080/00288250809509779

Harris W, Scheele SM, Forrester GJ, Pahewa E, Te Kanawa K, Murray M 2009. *Varietal and environmental influences on the properties of strands prepared from Phormium leaves to make the Māori garment piupiu.* New Zealand Journal of Botany 47(3): 249–269.

Pendergast M, Brake B 1987. *Te Aho Tapu. The sacred thread: traditional Māori weaving*. Auckland, NZ, Reed Methuen.

Scheele SM, Smissen RD 2010. *Insights into the origin and identity of National New Zealand Flax Collection plants from simple sequence repeat (SSR) genotyping*. Journal of New Zealand Botany 48(1): 41–54. Full paper available from: www.tandfonline.com/doi/abs/10.1080/00288251003685510

Wehi C 2009. *Indigenous ancestral sayings contribute to modern conservation partnerships: examples using Phormium tenax*. Ecological Applications 19(1): 267–275. Full paper can be read online at: http://onlinelibrary.wiley.com/doi/10.1890/07-1693.1/full

Wehi P, Clarkson BD 2007. *Biological flora of New Zealand 10. Phormium tenax, harakeke, New Zealand flax*. New Zealand Journal of Botany 45(4): 521–544. Full paper available from: www.tandfonline.com/doi/abs/10.1080/00288250709509737

Useful websites

He Kōrero Kōrari: Newsletters on trial progress and results of the experimental harakeke trials carried out in the 1990s. www.landcareresearch.co.nz/resources/collections/harakeke/newsletter

National Weavers Collective: Te Rōpu Raranga Whatu o Aotearoa: www.maoriart.org.nz/weavers-c-52_75.html

Harakeke pests and diseases: www.landcareresearch.co.nz/resources/collections/harakeke/insect-pests-and-diseases-of-harakeke

Facebook: www.facebook.com/Polynesian.Textile.Plants

Science Learning Hub: http://sciencelearn.org.nz/Contexts/Exploring-with-Microscopes/NZ-Research/Harakeke-under-the-microscope

Te Ara Encyclopaedia: www.teara.govt.nz/en/search/teara?keys=flax

Wahakura: www.radionz.co.nz/news/national/292910/baby-bassinet-makers-get-weaving

Collections

Rene Orchiston Harakeke Collection at Manaaki Whenua – Landcare Research: www.landcareresearch.co.nz/resources/collections/harakeke/rene-orchiston-collection-catalogue

Te Papa – http://collections.tepapa.govt.nz/topic/3623

Auckland – www.aucklandbotanicgardens.co.nz/our-gardens/harakeke-collection

Iwi and community stories:

- Ngāti Rereahu: www.paharakeke.co.nz/pa-harakeke/about-harakeke
- Ngai Tahu: http://ngaitahu.iwi.nz/our_stories/the-art-of-weaving
- Project Twin Streams, Auckland: http://projecttwinstreams.com
- Ali Brown (weaver): www.alibrown.co.nz
- Flaxworx, Bay of Islands, Russell: www.flaxworx.co.nz/Home_Page.php

Contact details for Sue

Email: scheeles@landcareresearch.co.nz