

## Puriritahi, a coastal forest in the Hokianga

Marley Ford

Puriritahi is 2.6 ha of coastal forest on family land, dominated by puriri (*Vitex lucens*), in Hokianga (Fig. 1A & B). It runs along the eastern side of the Whirinaki river which flows into the Hokianga Harbour (Fig. 2, 3). The forest has been grazed by cattle and sheep since surrounding farmland was cleared more than a hundred years ago. Recently Puriritahi has been retired as farmland and has been

left to return to its natural state. The edges of the forest were bulldozed by an old D5 Caterpillar exposing clay soil along the forest margins allowing weed invasion. A seven-wire fence was built from the saltmarsh to surround the forest to exclude cattle. The name Puriritahi most likely pays tribute to the main canopy tree in the forest and the importance of the puriri to the northern Maori and their burial

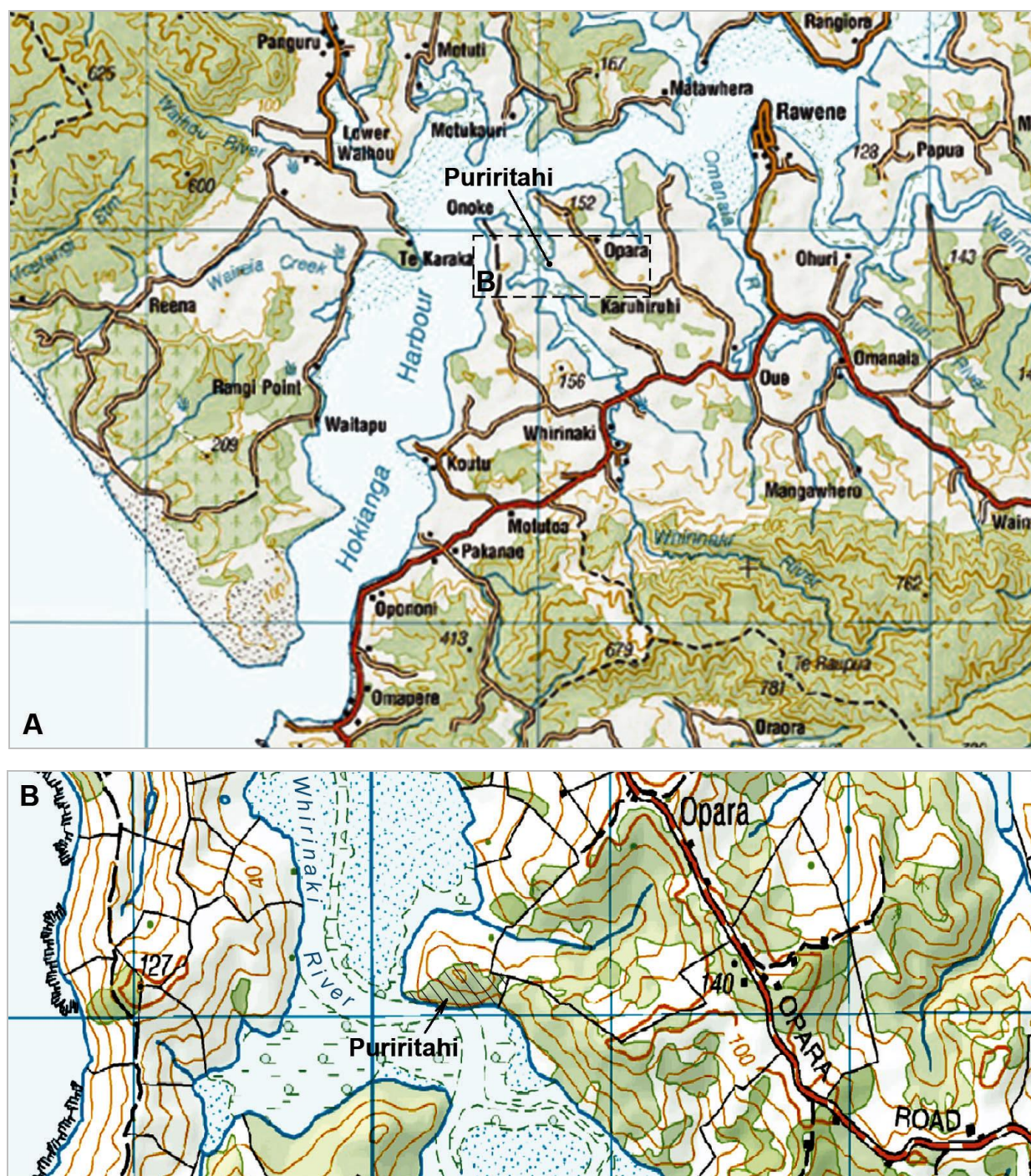


**Fig. 1.** A. Map of Hokianga Harbour, showing location of Puriritahi (see Fig. 1B for detailed map). Based on Topomap250 modified by Joshua Salter. B. Puriritahi (hatched area of coastal forest) on east shore of Whirinaki River. Based on Topomap50 modified by Joshua Salter.



**Fig. 2.** Looking north-west over the coastal forest of Puriritahi towards Onoke, behind which lies Panguru. All photos by M. Ford, April 2019.



**Fig. 3.** View of tidal estuary through the lower coastal forest looking on to privately owned forest on the Onoke peninsula.



**Fig. 4.** Regenerating retired pasture.



**Fig. 5.** Ginger understory in kahikatoa forest.

traditions (Dykgraaf 1992). Being private land, Puriritahi has not been studied before but the forest is a rare example of coastal forest on the edge of the Hokianga Harbour. This justifies the study of Puriritahi so that it can be used as an indication of the forest ecosystem that once probably ran along the entire harbour's edge.

Most of the broadleaf forest is seen on the southern side of the forest along the river edge up into the small gullies. Appendix 1 shows the vascular plant species present within Puriritahi. Moving away from the river, the forest turns into regenerating kahikatoa (*Leptospermum* aff. *scoparium*) and rawirinui (*Kunzea robusta*) forest and scrub. Puriri makes up most of the forest canopy with some large trees present. Other canopy trees include karaka (*Corynocarpus laevigatus*) and the occasional taraire (*Beilschmiedia tarairi*) and titoki (*Alectryon excelsus*) with tanekaha (*Phyllocladus trichomanoides*) on the drier ridges and kahikatea (*Dacrycarpus dacrydioides*) in the wetter gullies. The understory is composed of nikau (*Rhopalostylis sapida*), silver fern (*Cyathea dealbata*) and the occasional kohekohe (*Dysoxylum spectabile*) and wharangi (*Melicope ternata*). Kiekie (*Freycinetia banksii*) and cutty grass (*Gahnia lacera*) overhang the water with the occasional kowhai (*Sophora microphylla*) and mapou (*Myrsine australis*). Common vines include puawhananga (*Clematis paniculata*) and muehlenbeckia (*Muehlenbeckia complexa* agg.). A few plants of velvet fern (*Lastreopsis velutina*) were seen under the puriri canopy along with the more common shield fern (*Polystichum neozelandicum*), brake (*Pteris saxatilis*) and broad-leaved poa (*Poa anceps*).

The northern edge of Puriritahi is in an early stage of regeneration (Fig. 4), under earlier successional tree species such as rawirinui and kahikatoa ) with an understory of *Coprosma* species (*Coprosma arborea*, *C. areolata*, *C. parviflora* and *C. rhamnoides*), with gorse (*Ulex europaeus*) and tobacco weed (*Solanum mauritianum*) on the forest margins. Ground covers include nertera (*Nertera dichondrifolia*), leptostigma (*Leptostigma setulosum*) and basket grass (*Oplismenus hirtellus*). The forest margins grade into pasture species including: kikuyu (*Cenchrus clandestinus*), carpet grass (*Axonopus fissifolius*) and paspalum (*Paspalum dilatatum*). Ginger (*Hedychium gardnerianum*) is a common weed throughout the forest (Fig. 5) and is out-competing many of the native species in the understory. Removal is planned in the near future to protect the forest structure. Four pine trees (*Pinus radiata*) have been planted on the steep slopes, two-thirds of the way up the hill that comprises Puriritahi. These trees look to be over a hundred years old, based on their size and the time of settlement in this area (1839) (McLintock 1966).

Puriritahi is a classic example of Northland coastal broadleaf forest bordering a saltmarsh and is a rare example of forest meeting the Hokianga Harbour. Puriritahi joins the Whirinaki River and a salt marsh runs along the river edge. The mangrove forest joins saltmarsh on both sides of the river. Sedimentation has increased rapidly over the last five years and the

river has lost a great amount of its depth. The fenced-off pasture on the forest margins leaves opportunities for future native plantings.

## Acknowledgments

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## Appendix. Puriritahi vascular plant flora. Based on field work by the author in 13/04/2019

\*Exotic \*\*Planted

### Clubmoss 1 (0 native + 1 exotic)

*Selaginella kraussiana* \*

### Ferns and allies 29 (29 + 0)

*Adiantum cunninghamii*  
*Asplenium flaccidum*  
*Asplenium oblongifolium*  
*Asplenium polyodon*  
*Arthropteris tenella*  
*Austroblechnum lanceolatum*  
*Austroblechnum membranaceum*  
*Azolla pinnata*  
*Cyathea dealbata*  
*Cyathea medullaris*  
*Deparia petersenii* subsp. *congrua*  
*Dicksonia squarrosa*  
*Diplazium australe*  
*Doodia australis*  
*Hymenophyllum demissum*  
*Hymenophyllum dilatatum*  
*Icarus filiformis*  
*Lastreopsis velutina*  
*Lygodium articulatum*  
*Microsorium pustulatum*  
*Microsorium scandens*  
*Parablechnum minus*  
*Parapolystichum glabellum*  
*Pneumatopteris pennigera*  
*Polystichum neozelandicum*  
*Pteridium esculentum*

*Pteris saxatilis*

*Pteris tremula*

*Pyrrosia elaeagnifolia*

*Tmesipteris lanceolata*

### Conifers 4 (3 + 1)

*Dacrycarpus dacrydioides*  
*Pinus radiata* \*\*  
*Podocarpus totara* var. *totara*  
*Phyllocladus trichomanoides*

### Dicots 89 (54+ 30)

*Acaena novae-zelandiae*  
*Ackama rosifolia*  
*Ageratina riparia* \*  
*Alectryon excelsus*  
*Alternanthera philoxeroides* \*  
*Apium* "white denticles"  
*Avicennia marina*  
*Beilschmiedia tarairi*  
*Callitriche muelleri*  
*Carpodetus serratus*  
*Cerastium fontanum* \*  
*Cirsium vulgare* \*  
*Clematis paniculata*  
*Coprosma arborea*  
*Coprosma areolata*  
*Coprosma grandifolia*  
*Coprosma macrocarpa*  
*Coprosma parviflora*

*Coprosma rhamnoides*

*Coprosma robusta*

*Corynocarpus laevigatus*

*Cotula coronopifolia*

*Dichondra repens*

*Dysoxylum spectabile*

*Erigeron sumatrensis* \*

*Erechtites hieraciifolius* \*

*Euchiton japonicus*

*Euphorbia peplus* \*

*Galium aparine* \*

*Gamochaeta purpurea* \*

*Geranium homeanum*

*Geniostoma ligustrifolium*

*Genista monspessulana* \*

*Haloragis erecta*

*Hebe stricta* var. *stricta*

*Helenium puberulum* \*

*Hoheria populnea*

*Hypericum pusillum*

*Jacobaea vulgaris* \*

*Knightia excelsa*

*Kunzea robusta*

*Lagenophora pumila*

*Lantana camara* var. *aculeata* \*

*Leontodon saxatilis* \*

*Leptospermum* aff. *scoparium* (a)  
 "Auckland" - AK 284541  
 (de Lange et al. 2018)

*Leptostigma setulosum*

*Leucopogon fasciculatus*  
*Lobelia anceps*  
*Lotus pedunculatus* \*  
*Lysimachia arvensis* subsp. *arvensis*  
 var. *arvensis* \*  
*Melicope ternata*  
*Melicytus ramiflorus*  
*Mentha pulegium* \*  
*Metrosideros perforata*  
*Muehlenbeckia complexa* agg.  
*Myrsine australis*  
*Nertera dichondrifolia*  
*Oxalis incarnata* \*  
*Pelargonium inodorum*  
*Phytolacca octandra* \*  
*Piper excelsum* ssp. *excelsum*  
*Plagianthus divaricatus*  
*Plantago lanceolata* \*  
*Plantago major* \*  
*Pseudopanax crassifolius*  
*Ranunculus reflexus*  
*Ranunculus repens* \*  
*Rhabdothamnus solandri*  
*Rubus australis*  
*Rubus fruticosus* agg.\*  
*Rubus rosifolius*\*  
*Rumex conglomeratus*  
*Samolus repens* var. *repens*  
*Scrophularia auriculata* \*  
*Selliera radicans*  
*Senecio bipinnatisectus*  
*Solanum americanum*  
*Solanum mauritianum* \*  
*Solanum nigrum* \*  
*Sonchus asper* \*  
*Sonchus oleraceus* \*

*Sophora microphylla*  
*Streblus heterophyllus*  
*Taraxacum officinale* \*  
*Ulex europaeus* \*  
*Utricularia gibba* \*  
*Verbena incompta* \*  
*Veronica plebeia*  
*Veronica serpyllifolia* \*  
*Vitex lucens*

#### Monocots 58 (38+ 20)

*Agrostis capillaris* \*  
*Apodasmia similis*  
*Astelia hastata*  
*Axonopus fissifolius* \*  
*Carex dissita*  
*Carex banksiana*  
*Carex inversa*  
*Carex lambertiana*  
*Carex longibrachiata* \*  
*Carex solandri*  
*Carex spinirostris*  
*Carex virgata*  
*Cenchrus clandestinus* \*  
*Cordyline australis*  
*Cordyline pumilio*  
*Cortaderia selloana* \*  
*Crocasmia* × *crocosmiiiflora* \*  
*Cyperus eragrostis* \*  
*Cyperus ustulatus*  
*Dactylis glomerata* \*  
*Dianella laticissima*  
*Dichelachne crinita*  
*Ehrharta erecta* \*  
*Eleocharis acuta*  
*Eleocharis sphacelata*

*Ficinia nodosa*  
*Freycinetia banksii*  
*Gahnia lacera*  
*Hedychium gardnerianum* \*  
*Holcus lanatus* \*  
*Isolepis cernua*  
*Isolepis reticularis*  
*Juncus antheratus* \*  
*Juncus australis*  
*Juncus bufonius* \*  
*Juncus edgariae*  
*Juncus effusus* var. *effusus* \*  
*Juncus kraussii*  
*Juncus microcephalus* \*  
*Juncus prismatocarpus*  
*Juncus sarophorus*  
*Libertia grandiflora*  
*Luzula picta* var. *picta*  
*Lolium arundinaceum* \*  
*Oplismenus hirtellus*  
*Machaerina juncea*  
*Microlaena stipoides*  
*Paspalum dilatatum* \*  
*Phormium tenax*  
*Poa anceps*  
*Ripogonum scandens*  
*Rhopalostylis sapida*  
*Rytidosperma* sp.  
*Schoenoplectus tabernaemontani*  
*Sporobolus africanus* \*  
*Stenotaphrum secundatum* \*  
*Triglochin striata*  
*Typha orientalis*

## ***Pneumatopteris pennigera* – a record-breaking gully fern?**

**Marley Ford**

Pākauroharoha, commonly known as gully fern (*Pneumatopteris pennigera*), is a common native fern found in gullies throughout New Zealand but is apparently absent from Stewart Island (Brownsey & Smith-Dodsworth 2000). Gully fern is a member of the Thelypteridaceae family, a nearly worldwide-spread plant family (Brownsey & Perrie, 2016).

Pākauroharoha has been recorded with a trunk (caudex) of up to 1 m in the efloraNZ (Brownsey & Perrie, 2016), but a recent find has beaten this record by almost double. On 14 June 2019 at Pae O Te Rangi Reserve in the Waitakere Ranges a plant was found with a measured 'trunk' of 1.89 m (Fig. 1). The fern was found