

**SAND DUNE RESEARCH PROJECTS
CARRIED OUT BY THE INDIGENOUS FOREST MANAGEMENT GROUP,
NZ FRI, ROTORUA**

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This is a list of sand dune trials and related projects initiated by the Indigenous Forest Management group, NZ FRI, Rotorua, over the last 5 years. Also included are future proposals and linkages that we have with agencies and individuals.

Established trials

Establishment of pingao on Nuhiti Beach, East Coast, testing range of provenances, fertiliser application at planting and post-planting, site types, nursery stock types. Established 1989. Trial monitored annually and further post-fertiliser applications are planned. Funded by DOC.

Establishment of pingao at Waikawau Bay, Coromandel testing provenances and fertilisers. Established 1989. Monitored for 2 years. Abandoned due to changed river course and rabbit browsing. Funded by DOC.

Pingao seed and seedlings trials at FRI Nursery, Rotorua testing seed preparation methods, germination, potting mixes and containers. Initiated 1990 and continuing.

Pingao planting and fertilising trial at Whaingaroa Harbour (Raglan). Established 1990. Monitored annually.

Pingao planting and fertilising trial at Whangaehu River mouth. Established 1990. Monitored for first year but since abandoned due to severe rabbit browse. Partially funded by DOC.

Review of spinifex propagation and establishment. Contract report written 1991. DOC funded.

Spinifex nursery propagation trials at FRI Nursery, Rotorua testing cuttings, seed preparation methods, germination, potting mixes, fungicides and containers. Initiated 1991 and continuing. Partially funded by DOC.

Spinifex pilot planting trial, Maketu Spit, Bay of Plenty, testing nursery-raised seedlings, fertilisers. Established 1991. Inspected annually with follow up treatments.

Fertilising stolons of natural plants - pilot trial at Maketu Spit. Established 1991. Monitoring continuing.

Sustainable harvesting trial of pingao, Santoft Forest sand dunes, southeast of Whanganui. Initiated 1992. First harvest (autumn) completed and fibre weaving qualities assessed. (A complementary study of pingao morphology is being undertaken by Dr Philip Simpson, DOC, Wellington)

Trials to be established this year (1993)

Establishment of trial gardens to assess differences between 30 provenances of pingao at 3 sites - Mercury Bay Community College, Whitianga; Hawkes Bay Polytechnic, Napier; NZ FRI Nursery, Rotorua. FRST funded.

Sand dune pingao provenance trial to be established on Hawkes Bay or Coromandel site. FRST funded.

Spinifex propagation and fertiliser pilot trials at Whiritoa Beach, Coromandel. DOC funded with support from Environment Waikato.

Spinifex fertiliser trial at Matarangi Beach testing range of fertiliser formulations, rates and timings. DOC funded with support from Environment Waikato.

Future research for 1994 and beyond

Initiate study of dune vegetation dynamics to determine optimum habitat for indigenous sand binders and their interaction with marram. FRST funded 1993/94.

Initiate glasshouse pot trials at FRI Nursery to determine major nutritional requirements of pingao and spinifex early 1994. FRST funded 1993/94

Extend monitoring programme of natural populations of spinifex and pingao to other North Island sites. FRST funded 1994/95.

Initiate studies on other indigenous duneland plants including those of "rare" and "vulnerable" status such as *Euphorbia glauca*. FRST funded 1994/95.

Produce booklet of pingao propagation and establishment; publish What's New article on IFM sand dune research to date. Funded by NZ Lottery Board and FRST.

Initiate propagation and establishment of *Austrofestuca littoralis* trials on a Bay of Plenty site in collaboration with local DOC staff (early 1994).

In collaboration with Environment Waikato and Mercury Bay Community College, initiate propagation and establishment trials using indigenous sand trapping species and other secondary species for revegetation of dunes.

Assist with trials where appropriate at Whitianga regarding revegetation of dredged harbour material to be added to parts of Buffalo Beach.

Expansion of the Whiritoa propagation trial to fresh dune surfaces to be created early 1994 when sand is bulldozed to make a new dune south of surf club.

Expansion of fertiliser trials at Matarangi Beach to refine fertiliser regimes for promoting growth of existing spinifex populations.

Propagation and fertiliser trials to be established on a west coast beach (e.g., Port Waikato) in collaboration with Environment Waikato and the Dune Care group.

Linkages we have with agencies, groups and individuals to date

Maori Community - Nga Puna Waihangā; Panake Community Development and Training Trust, Manawatu; Nuhiti Q Station, East Coast; Whanganui Polytechnic; Tairāwhiti Polytechnic; Whaingaroa Harbour (Raglan)

Department of Conservation - Bay of Plenty (Willie Shaw); Hawkes Bay & East Coast (Geoff Walls, Ken Hunt); Coromandel (Rob Chappell); Whakatane (Derek Gosling); Whanganui (Colin Ogle); Southland (Brian Rance); Head Office (Phil Simpson)

Polytechnics - Tairāwhiti, Gisborne; Hawkes Bay, Napier; Bay of Plenty, Tauranga; Mercury Bay, Whitianga

Regional councils - Environment Waikato; Bay of Plenty

Nurseries - Taupo Doc Nursery; Matawhero Doc Nursery, Gisborne; Tairāwhiti Polytechnic nursery, Gisborne; Whakatane District Council Nursery; Cyclone Nurseries (Jenny Oliphant)

Community groups/individuals - Waikawa Bay Ratepayers Association; Whiritoa Dune Care; Piha Beach (Jill Denny)