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PINGAO PROVENANCE OUTPLANTING TRIAL, PORT WAIKATO
NZFRI ESTABLISHMENT REPORT

AUTHOR(S):

JOHN HERBERT AND DAVID BERGIN

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ABSTRACT*

This report documents the establishment of an out-planting trial incorporating five provenances of pingao at Port Waikato on the West Coast of the North Island. The trial is a five block design with the five provenances included in a single 20-seedling plot within each of the five blocks. The five provenances are: Port Waikato, Whatipu, Whangamata, Ocean Beach (Napier) and Santoft.

* Note: This material is unpublished and must not be cited as a literature reference.

PINGAO PROVENANCE TRIAL, PORT WAIKATO

ESTABLISHMENT REPORT

John Herbert and David Bergin

September 1995

INTRODUCTION

This trial extends to five the number of pingao provenance trials established in different parts of the North Island testing aspects of the performance of different provenances of pingao. Existing trials are sited at Rotorua, Otatara (Napier Polytechnic), Whitianga (recently abandoned because of severe frost damage) and Matarangi (Bergin and Herbert 1993). This trial is to test, in a field situation, the performance of five of the best performing provenances of pingao identified from the previous trials. It was established on 5 September 1995.

This document reports on the establishment of a trial on Maori-owned land at Port Waikato. The trial was established with the assistance of Environment Waikato and the Huakina Development Trust.

TRIAL SITE

The trial site extends along 150 m of the leading eastern margin of the extensive dune system associated with the estuary of the Waikato River. Access is via the Maraetai Bay park area, Port Waikato; the first plot is located 150 m from the north-west corner of the park.

OBJECTIVE

To measure the differences in growth performance of five provenances of pingao, all of which were best-performers (in respect of vigour, leaf length and weaving potential) in previous poly-house and outplanting trials.

METHOD

Trial Design

The standard random complete block design for IFM sand dune species trials has been used. This trial is a five block design with each of the five provenances allocated to a randomly selected plot within each block. Each provenance is represented by 20 seedlings planted within a 1.5 m radius circle about a central 50 mm by 50 mm peg. Plot centres are between 4 m and 5 m apart and follow along and 3 m to 4 m back from the toe of the dune. Pegs are numbered 1 to 25 and are sequentially laid out with peg 1 nearest the park area.

At planting, all seedlings received 30g of magamp fertiliser worked into the sand around each seedling.

Pre-planting measurements including pulled up height and number of leaves were made on 20 randomly selected seedlings of each provenance before planting. Results are shown in Table 1.

A plan of the trial layout (Fig. 1) and trial design (Table 2) is attached to this Establishment Report.

Provenance	Pulled-up Height (cm)	Number of Leaves
Port Waikato	64.7	12.1
Whatipu	62.9	10.9
Whangamata	60.8	11.6
Ocean Beach	58.3	11.9
Santoft	48.5	11.6

Table 1. Pre-planting height and leaf-number for five planted-out provenances of pingao.

PROVENANCES

The five provenances planted out in this trial are: Port Waikato, Whatipu, Whangamata, Ocean Beach (Napier) and Santoft. The Santoft provenance was not assessed in the previous trials: it substitutes for the Manawatu coast (Himatangi) pingao which was not available for this trial. Extensive observation indicates that the Santoft provenance (which is adjacent to Himatangi) is at least as vigorous and of similar form and properties to the Himatangi (and other Manawatu Coast, including Tangimoana, provenances).

MONITORING AND MAINTENANCE

The trial will be re-measured at approximately 6 monthly intervals for up to 2 years. Survival, growth (number of divisions and leaf length), plant health and vigour and plant cover will be assessed.

Any plants of non-local (Port Waikato) origin will be removed at the conclusion of the trial.

ACKNOWLEDGEMENTS:

Seedlings were raised at the NZFRI Nursery, Rotorua.

Harley Spence of Environment Waikato and Hiareata Oti of Huakina Development Trust, with her Trust students, assisted in the implementation of this trial and their help is specifically and gratefully acknowledged. We particularly acknowledge the support of the Huakina Trust in permitting access to their lands for the purpose of this trial.

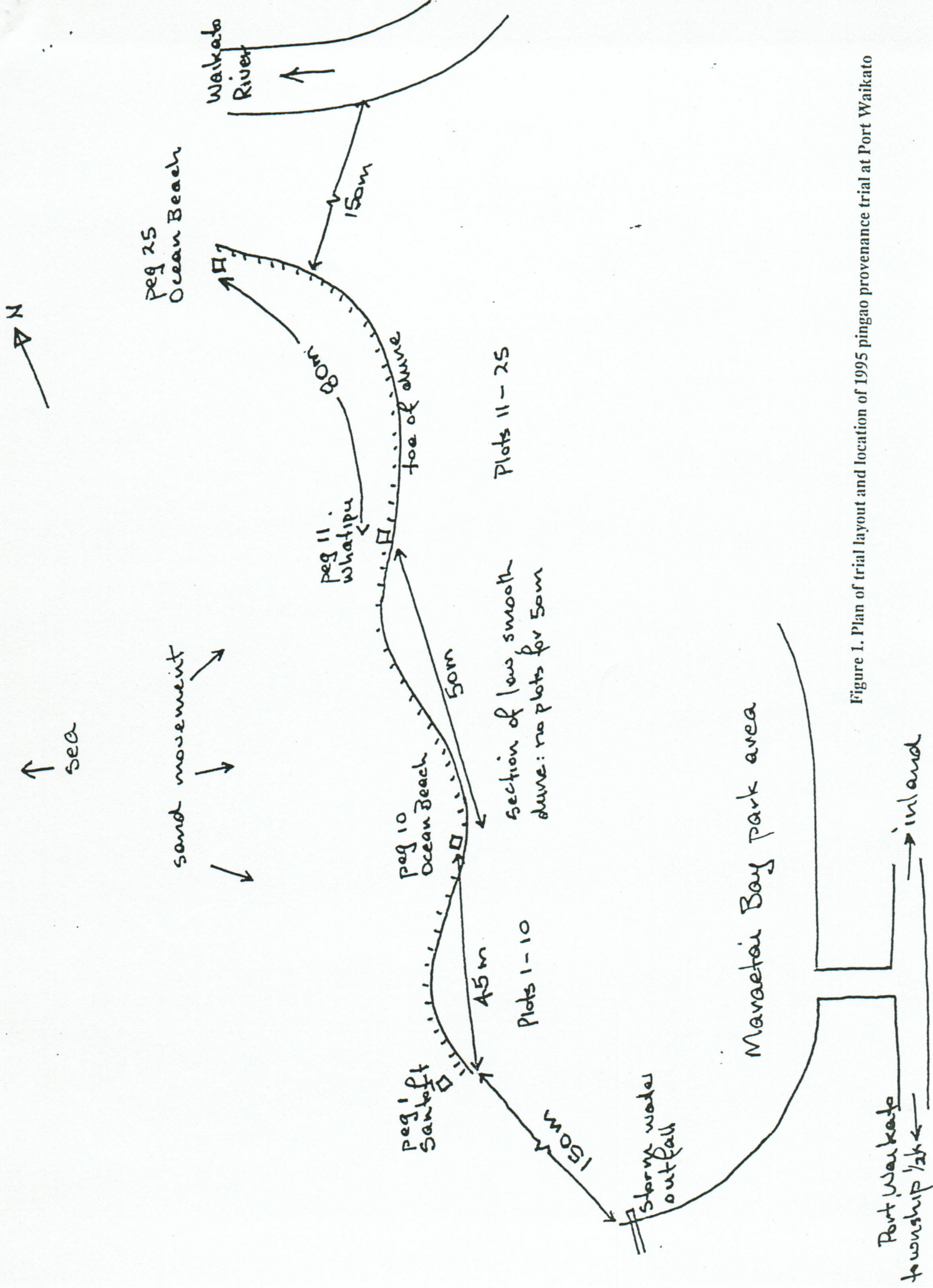


Figure 1. Plan of trial layout and location of 1995 pingao provenance trial at Port Waikato

1995 Outplanting Trial of Five Selected Pingao Provenances

Plot	Replication	Provenance
1	1	Santoft
2	1	Whangamata
3	1	Port Waikato
4	1	Ocean Beach
5	1	Whatipu
6	2	Port Waikato
7	2	Whatipu
8	2	Santoft
9	2	Whangamata
10	2	Ocean Beach
11	3	Whatipu
12	3	Port Waikato
13	3	Ocean Beach
14	3	Santoft
15	3	Whangamata
16	4	Ocean Beach
17	4	Port Waikato
18	4	Whatipu
19	4	Whangamata
20	4	Santoft
21	5	Whatipu
22	5	Whangamata
23	5	Port Waikato
24	5	Santoft
25	5	Ocean Beach

Table 2. Trial design of 1995 pingao provenance trial at Port Waikato