

Silver beech

Kapiti Woodworkers' Guild

Saturday 8th June 2024

Ian Owens

What indigenous timber species is the largest by volume in the 150+ SMF MPI operations?

i.e.- not recycled

- not recovered wind blown
- not sporadically felled
- not trimmed branches

Tōtara

Hard Beech

Kahikatea

Kauri

Mātai

Pink Pine

Red Beech

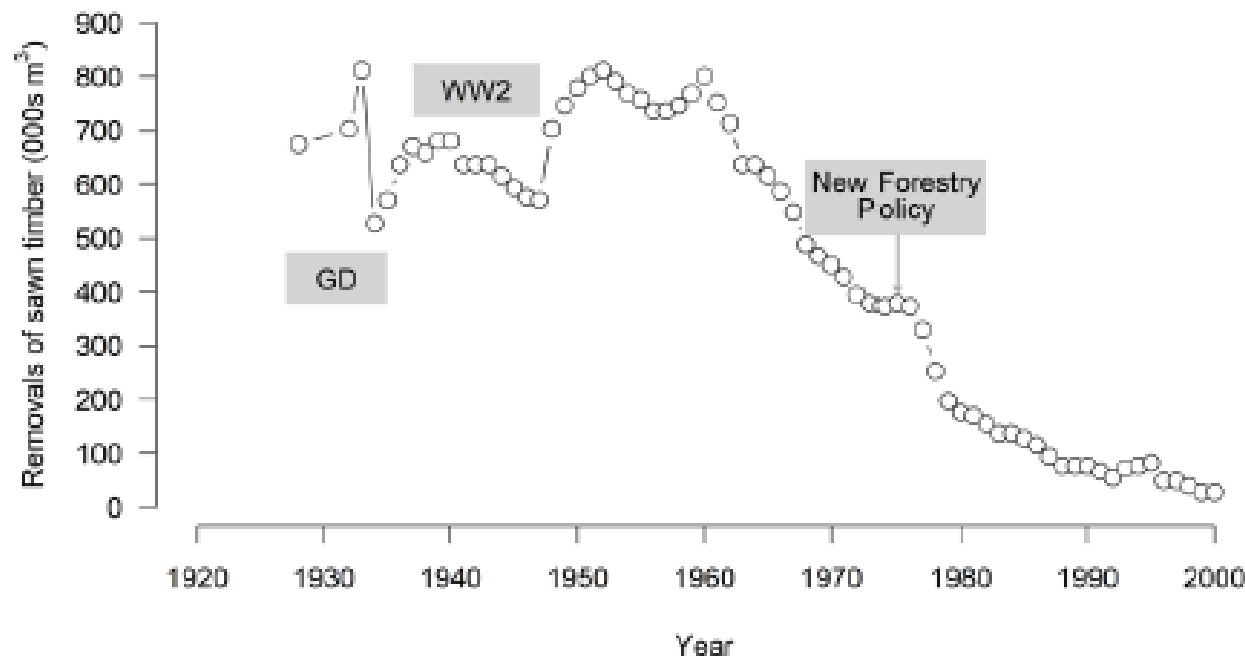
Rimu

Silver Beech

Kānuka

Other

MPI Forestry& land Management sawmilling newsletter 17, Aug 2020



Volumes of indigenous timber
McGlone et al.(2022)

Species and Volumes received at the Mill for 2018/2019

Below are the volumes of indigenous timber received at the mill for the 2018/2019 financial year. Volumes received for 2019/2020 will be published in a later newsletter.

SPECIES	VOLUME (M³)
Tōtara	259
Hard Beech	95
Kahikatea	93
Kauri	132
Mātai	214
Pink Pine	540
Red Beech	1 033
Rimu	1 898
Silver Beech	16 216
Kānuka	239
Other	169
TOTAL	20 886

New Zealand beeches

Leaves of beech taxa – mountain beech (top left); black beech (top right); hard beech (centre); red beech (bottom left); silver beech (bottom right).

Mountain beech

Black beech

Hard beech

Red beech

Silver beech

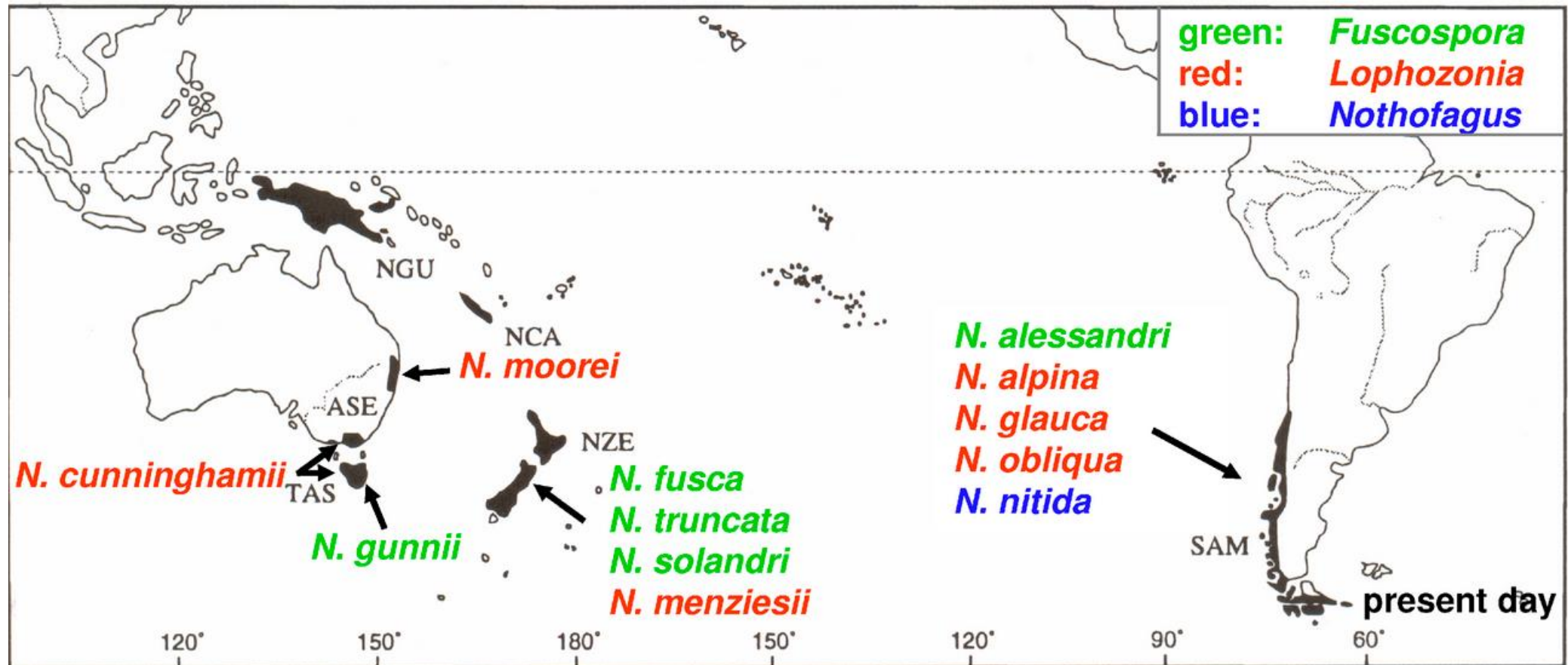
(Eagle, 2006)

Changing NZ beech nomenclature(Heenan&Smissen,2013)

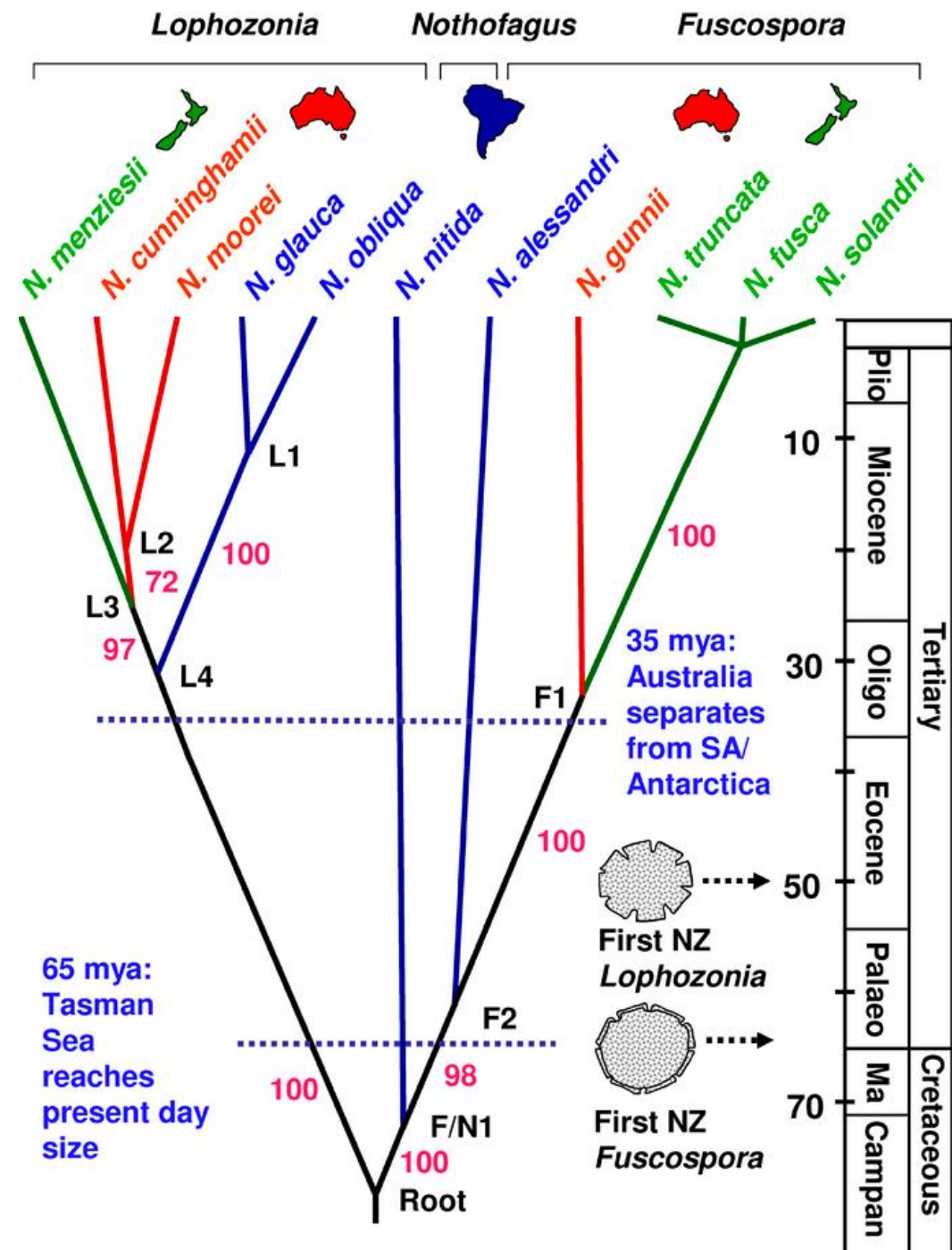
Mountain beech	Black beech	Hard beech	Red beech	Silver beech	
Tawhairauriki (small leaved)	Tawhairauriki (small leaved)	Tawhairaunui (large leaved)	Tawhairaunui (large leaved)	Tawhai or Tawai	
Fagus cliffortioides	Fagus solandri	Fagus truncata	Fagus fusca	Fagus menziesii	Early botanists
Nothofagus cliffortioides	Nothofagus solandri	Nothofagus truncata	Nothofagus fusca	Nothofagus menziesii	German-Dutch botanist Blume (1850)
Nothofagus solandri var cliffortioides	Nothofagus solandri	Nothofagus truncata	Nothofagus fusca	Nothofagus menziesii	
Fuscospora cliffortioides	Fuscospora solandri	Fuscospora truncata	Fuscospora fusca	Lophozonia menziesii	

Distribution of Nothofagus (southern beech)

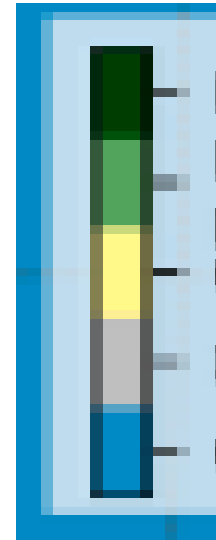
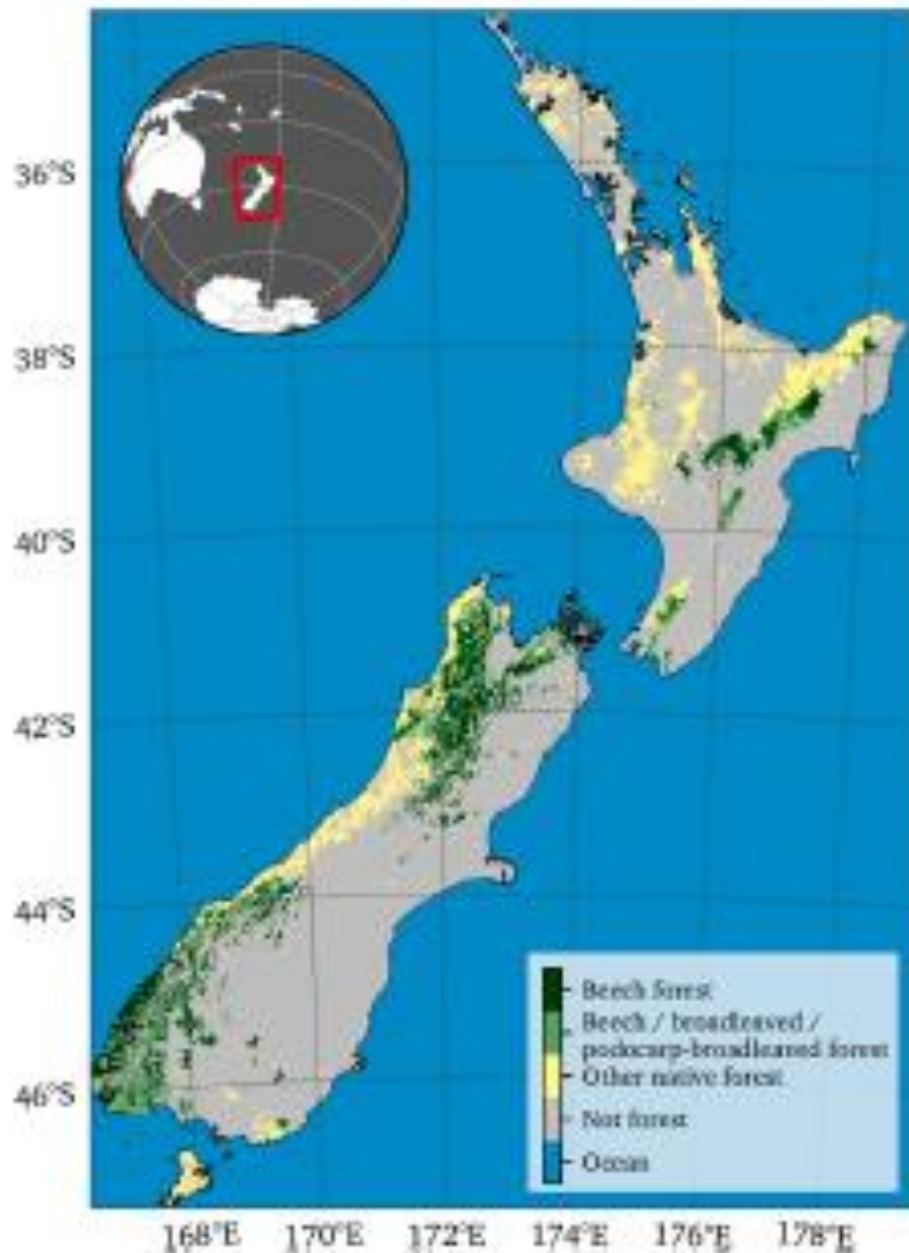
Knapp et al.(2005)



Evolutionary relationships for *Nothofagus* species with break up of Gondwanaland and dispersal(?) (Knapp et al., 2005)



Distribution of New Zealand beeches



Beech forest

Beech/broadleaved/Podocarp

Other native forest

Not forest

Ocean

NI – axial ranges above ~600m

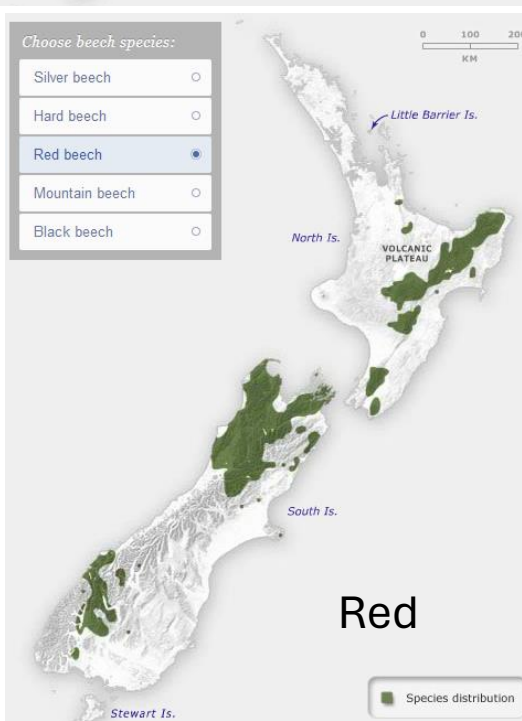
NSI – axial ranges

SSI – ranges to Sea level

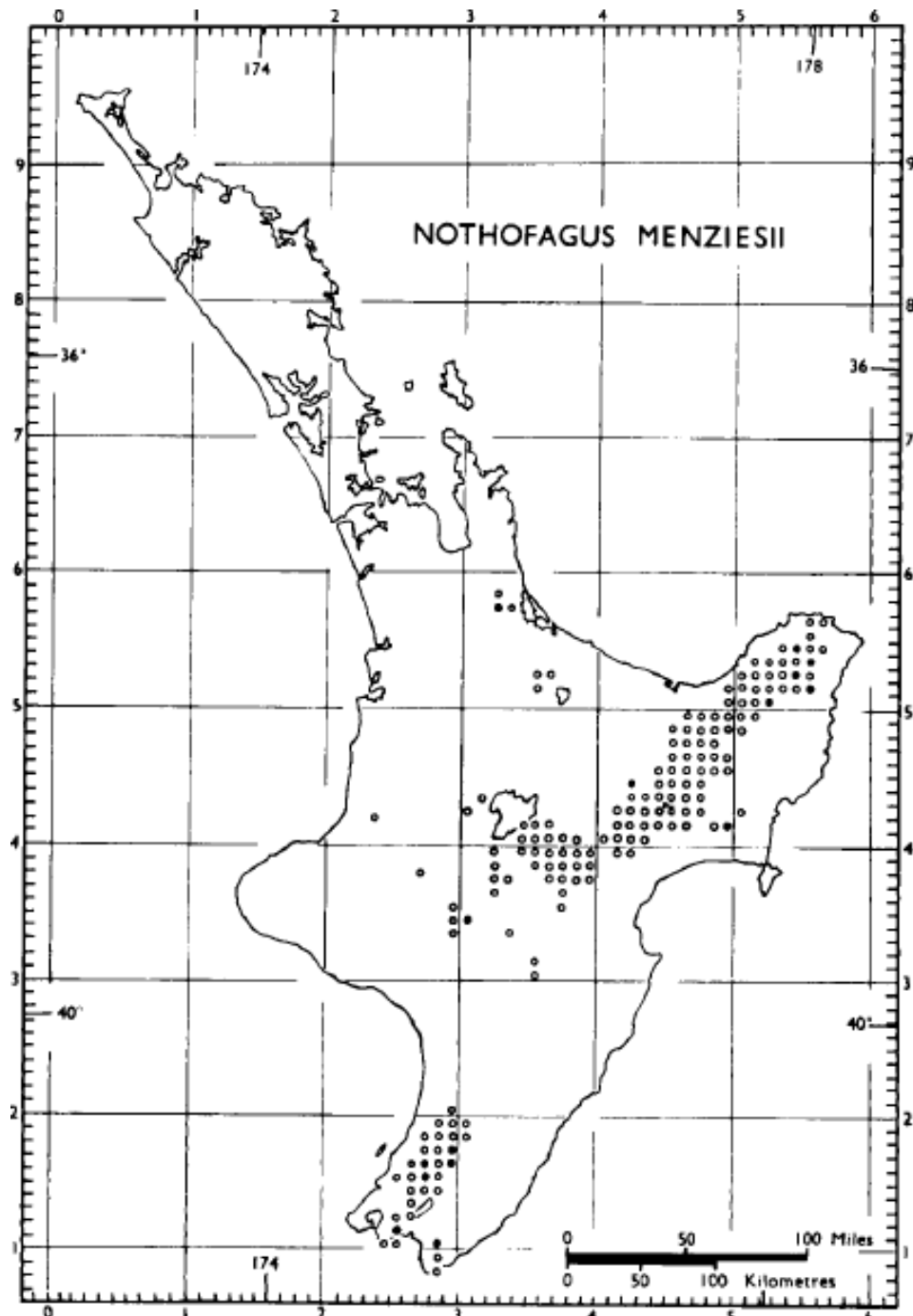
Beech gaps

Absent from Northland, Taranaki, Stewart Is

(Schindler et al.2021)



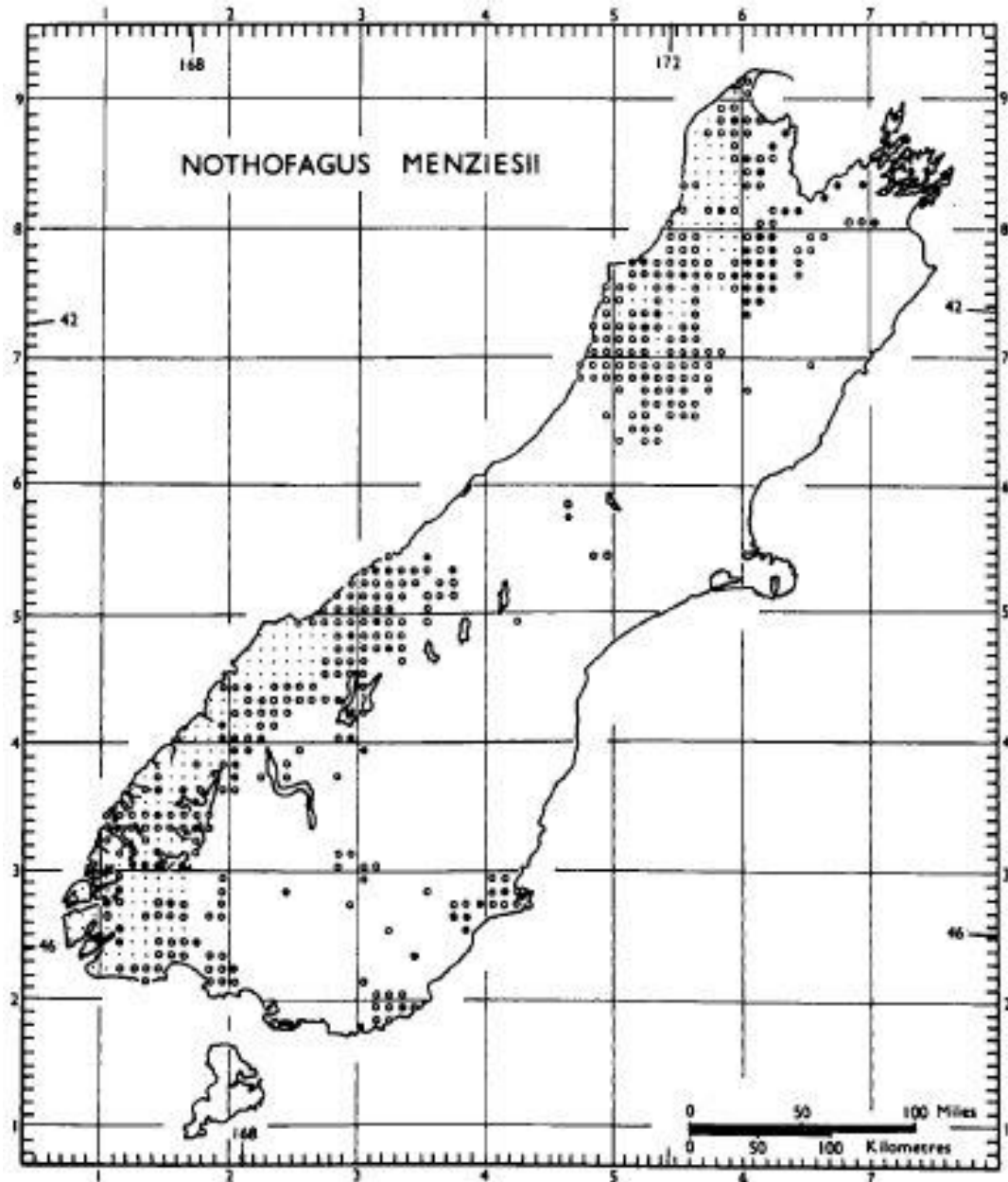
Five species' distributions
(Orwin, 2009)



NI Silver beech distribution

- Abundant in montane and subalpine forests Rimutaka and S Tararua, Huiarau and Raukumara Ra
- Smaller blocks on Mamaku plateau, Mt Te Aroha, N Kaweka, W side of Ahimanawa Ra, SW slopes of Mt Ruapehu and Haurangi Ra.
- Isolated stands N Tararua Ra, NW side of Ruahine Ra, W of L.Taupo and Inland Taranaki

(Wardle, 1967)



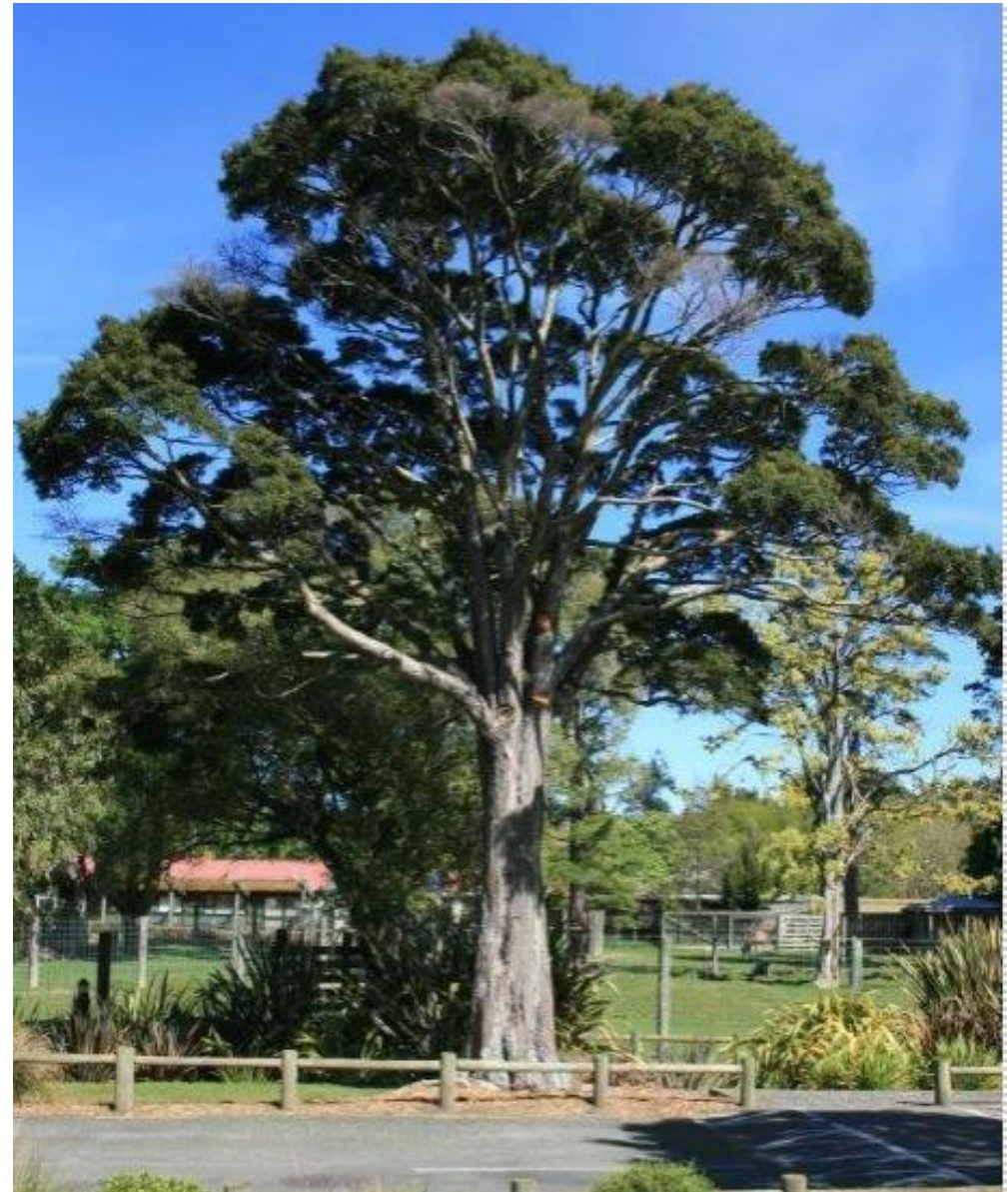
SI Silver beech distribution

- Abundant NW of a line from Marlborough Sds to Taramakau R and W of a line from Paringa and Landsborough R through the valleys at head of L. Ohau, Hawea, Wanaka and Wakatipu to the Livingstone, Takitimu and Longwood Ra.
- Other blocks in APNP, Catlins inland from Dunedin.

(Wardle, 1967)

Silver beech characteristics

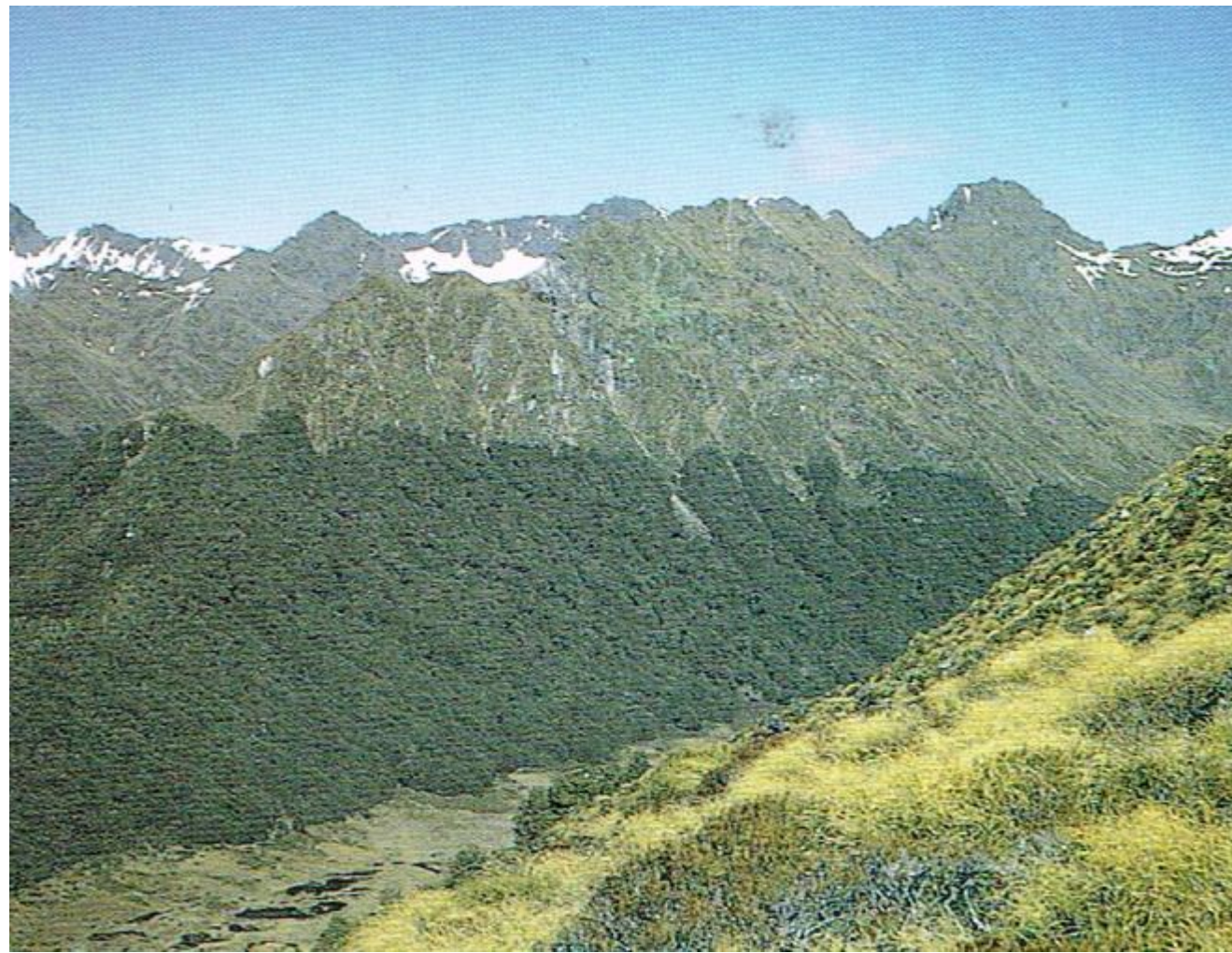
- Grows to 20-25 m with trunk diameters 0.6-1.5 m
- Grows as a bush at high elevn with horizontal trunks in deep snow
- Tolerant of heavy frosts (-12°C) and snow
- Dense tiered foliage
- Slowest growing of NZ beeches, diameter rates 1.2 mm/yr
- Grows under heavier rainfall but also mixed with red and mountain beech (Smale et al. 2012)



<https://images.app.goo.gl/EC9VTbQHj5zTikML8>

Silver beech elevation

- Uncommon below 600 m in NI
- Abundant at sea level S of 43.7°S
- Timberlines
- 1,430 m on Mt Hikurangi
- 1,200 – 1,280 in the Tararua Ra and W Nelson
- 910-980 m in W Fiordland
- Superseded at timberline by Mountain beech on most NI ranges
- Eastern SI alt limit ~910 m



Timberline , Takahe Valley, Fiordland

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Silver beech
bark:

- young (left)
- old (right)

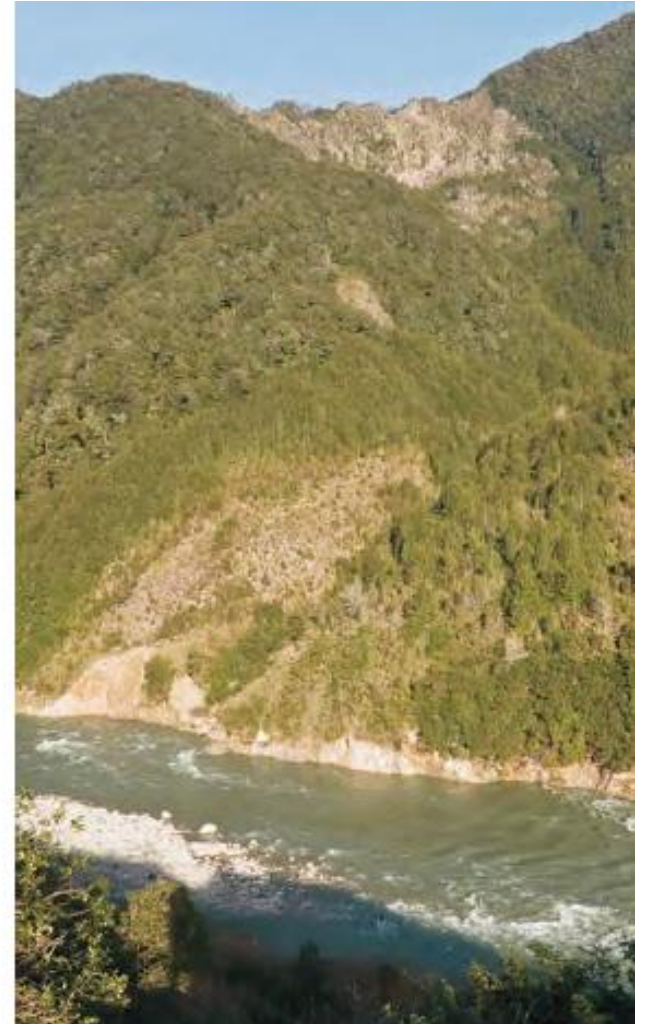


• (Wardle and Platt, 2001)

Beech recovery after
Inangahua earthquake,
Buller Gorge



1968



2011

Silver beech timber colour

- Heartwood is pink/brown
 - darker than totara
 - occasionally deep red
- Sapwood is light grey/pink

Examples:

Small piece from 1mx150mmx40mm
plank bought in ChCh ~20 yrs ago

Dark red beech burr from Milford Rd

Turning blank from mountains
behind Tauranga



(Smale et al., 2012)

Other properties

- Fine straight grain
- Consistent (does not hybridise with other beeches)
- Machines and veneers easily
- Bends well
- Moderate strength
- Durability – unsuited for outdoor applications
- Finishes well
- Occasional burrs

(Smale et al., 2012)



(Musgroves.co.nz)

Silver beech uses

- Furniture
- Turnery
- Brushware
- Flooring
- Panelling



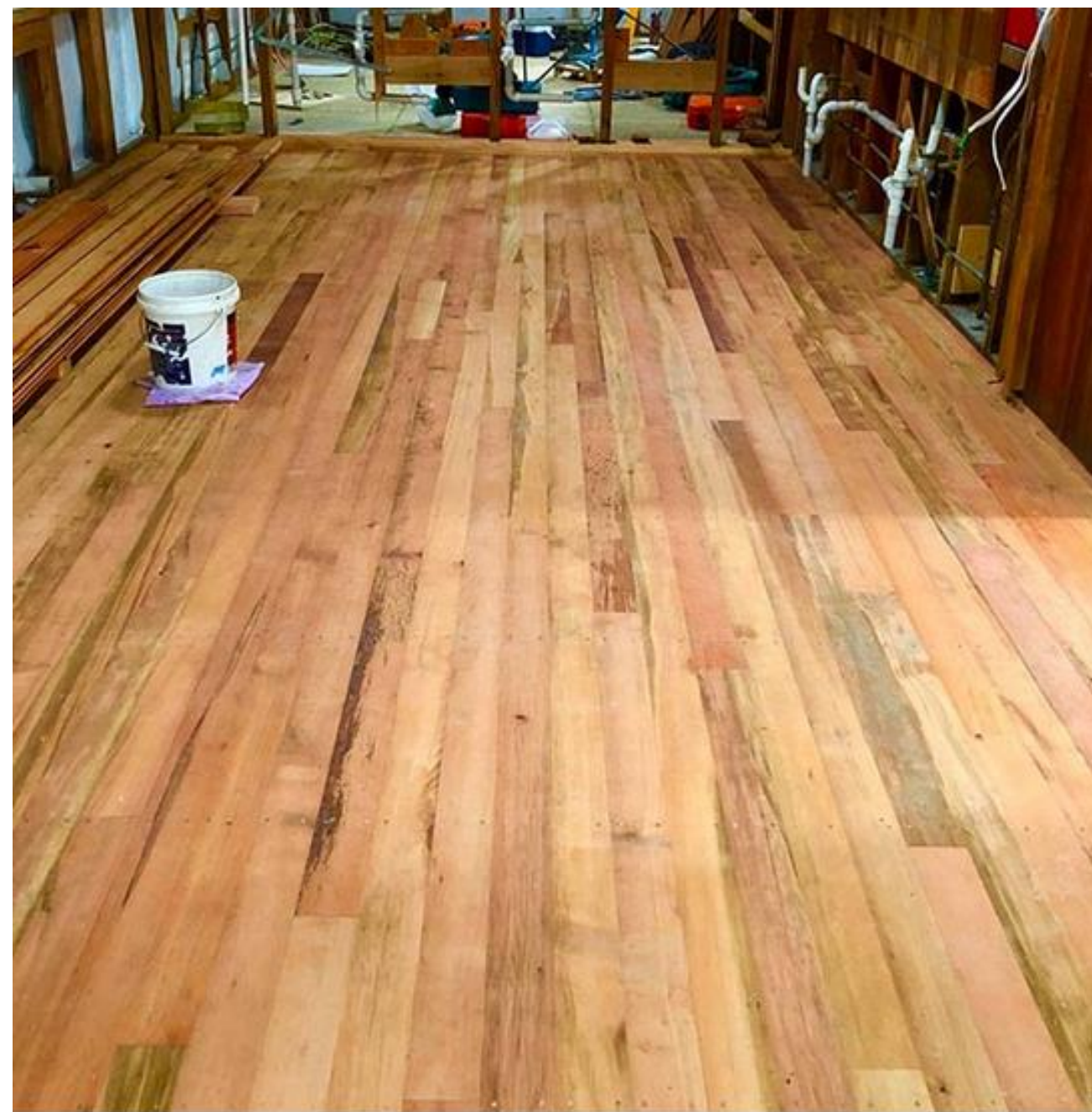
Silver beech used for high-quality furniture.

(Smale et al., 2012)

Bending and flooring



(Smale et al., 2012)



<https://tenamutimber.co.nz/product/silver-beech-flooring/>

Brushware and handles



Broom handles
(Smale et al., 2012)

Turnery



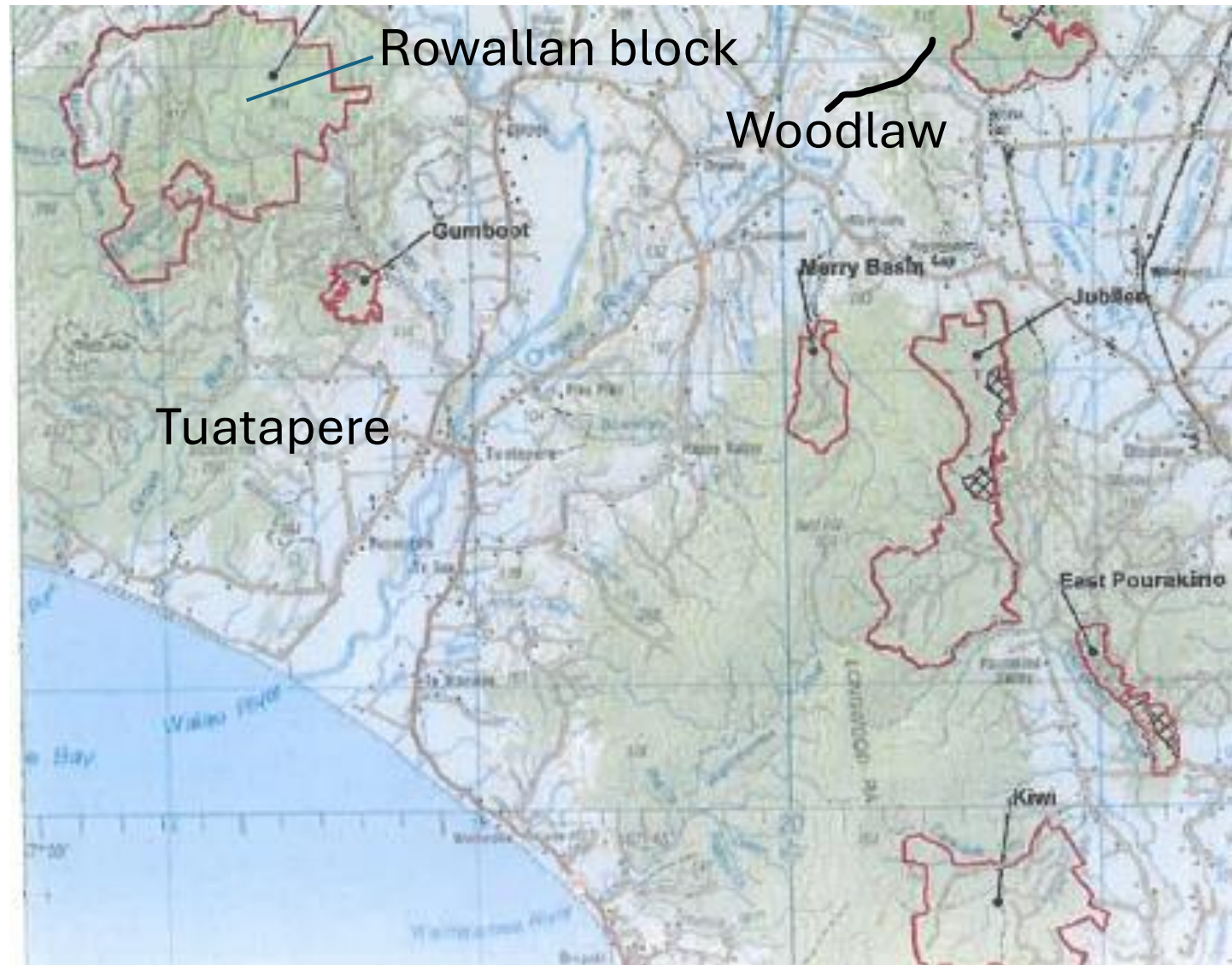
www.redwoodvalleyturnery.co.nz/

Small turned items



Lindsay & Dixon forestry blocks, W. Southland

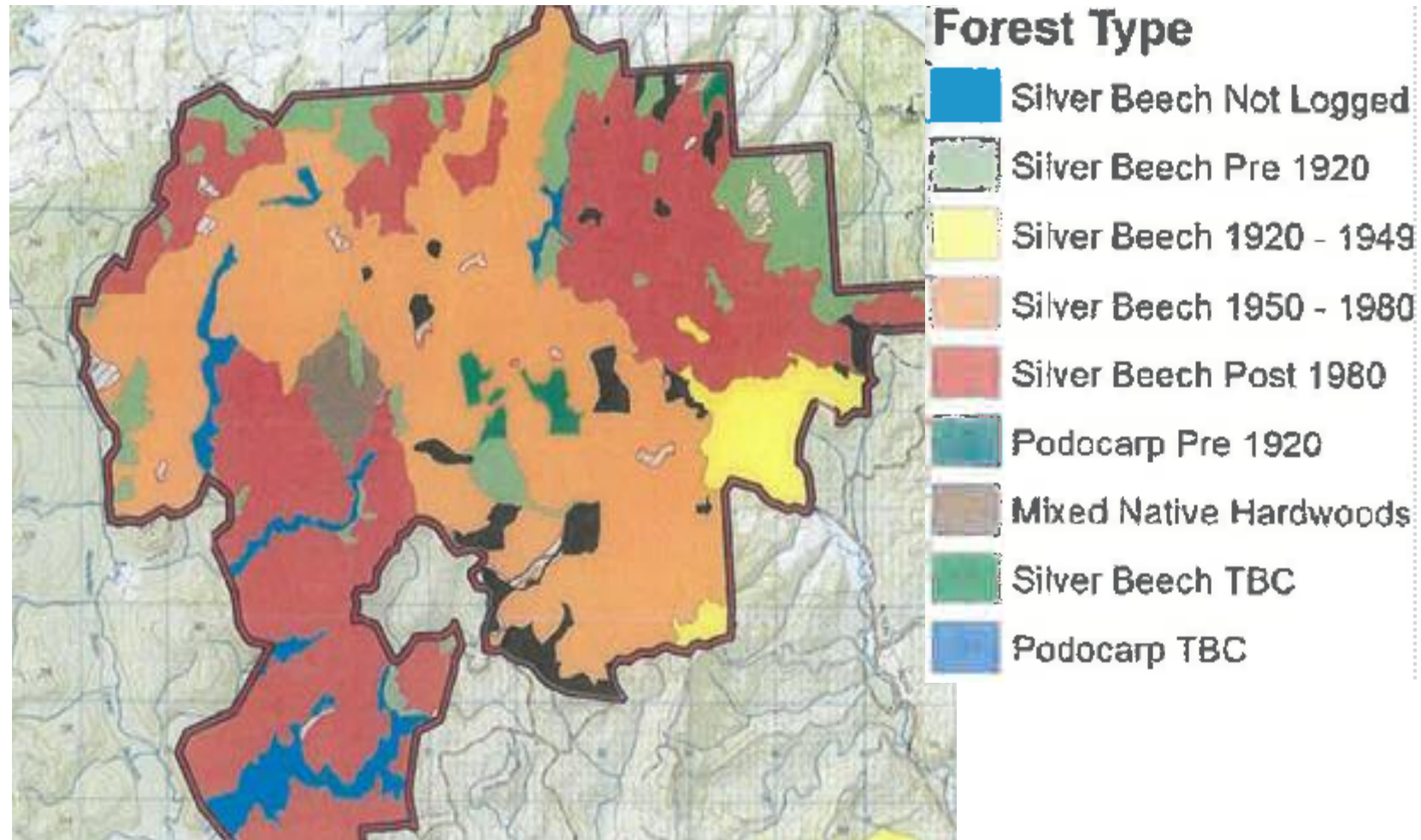
- Seven forestry blocks - 11582 ha
- Predominantly Silver beech and small areas of Rimu and Totara
- Total est. stock 1.32 mill m³
- Permissible harvest 23682 m³
- 1.8% (cf int standards of 10%)
- Second growth forests clear felled in early 1900s
- Trees extracted in small coups designed to promote regeneration
- Removed on temporary roads
- Local iwi (Waitutu) has cutting rights through 1906 SILNA – L&D have contract with WHC
- Int environmental Forestry Stewardship Council accreditation



(Lindix.co.nz)

Annual allowable harvest

Species	Cubic Metres
<u>Beech</u>	
Silver beech	21 277
Mountain beech	892
Total Beech	22 169
<u>Hardwoods</u>	
Kamahī	1 680
Rata	559
Total Hardwoods	2 239
<u>Podocarps</u>	
Rimu	142
Totara	62
Miro	53
Kahikatea	53
Matai	9
Total Podocarps	319
Total	24 727



Rowallan block mapping
(Lindix.co.nz)

80 year old logs, approx
70 cm diameter



Making boards from
flitches

Silver beech marketed as:

Southland cherry beech

Southland maple beech



Koru lounge ChCh airport



<http://www.lindix.co.nz/Koru.html>

Supreme court Wellington

Designed by Warren & Mahoney

Kauri dome

Silver beech 2048 triangular or diamond shaped panels



<http://www.lindix.co.nz/Courthouse.html>