

# Rewarewa (*Knightia excelsa*)



Tree character



Distribution



Colour and grain



Physical properties



Woodworking character



Uses

# Tree character

Slender evergreen tree up to 30 m

Trunk dbh up to 1 m

Erect branches (fastigiata)



Tall Rewarewa at Upper Hutt



## Rewarewa near Tokaanu

(Dawson and Lucas, 2019, p.341)



# Leaf character

- Young tree – up to 30 cm long, taper to a point at both ends and toothed
- Older trees – 15 cm long

(Dawson and Lucas, 2019, p.34o)



# Inflorescence (i.e. blossom)

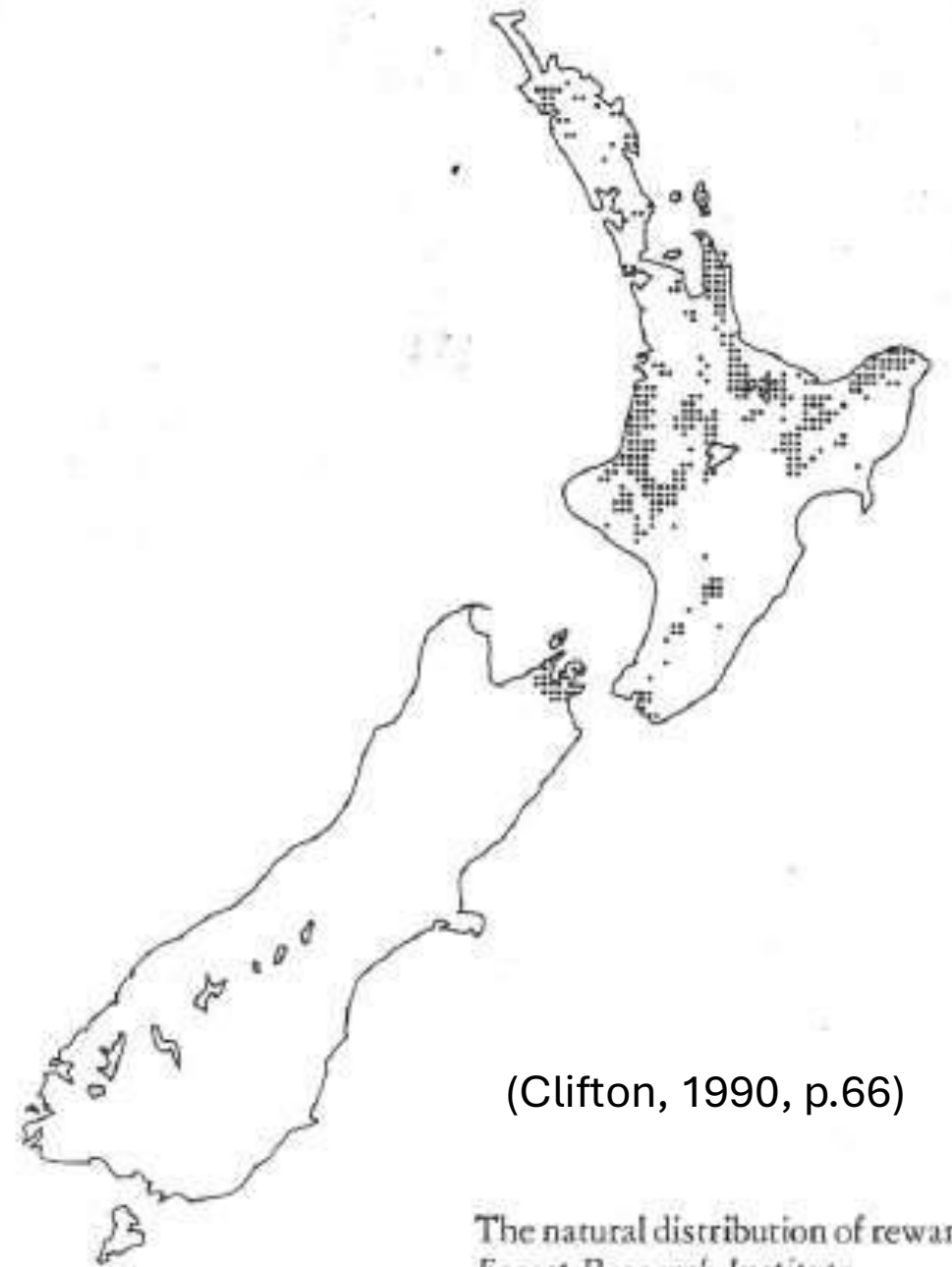
- Characteristic bottle brush
- Pollinated by birds and bees

(Dawson and Lucas, 2019, p.340)



# Distribution

- North Island – up to 850 m elevation
- Marlborough Sounds



(Clifton, 1990, p.66)

The natural distribution of rewarewa.  
*Forest Research Institute*

# Colour and grain

## Mature trees

- Sapwood - pink to silver
  - Heart – dark red and brown
- "..some of the finest quarter sawn ray figure in the world." (Massey, 1992)

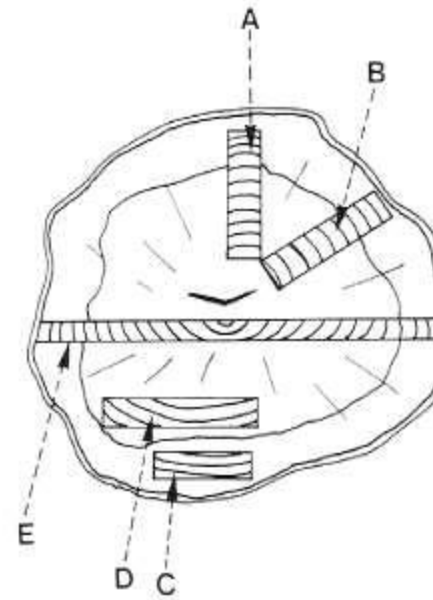
## Juvenile trees

Pale cream with pink fleck

Quarter sawn figure



Flat sawn figure

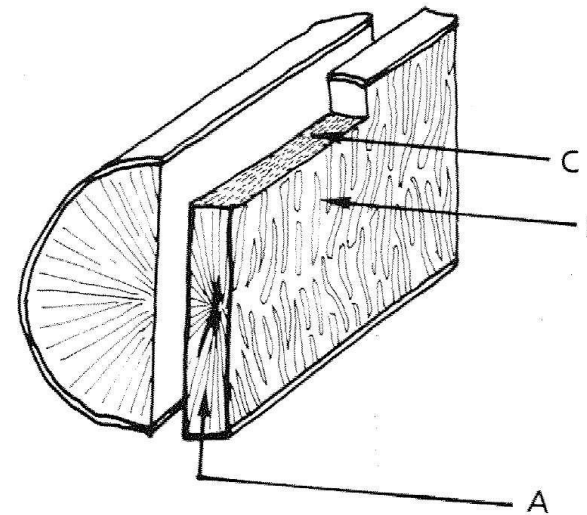


A&B – quarter sawn

C&D - flat sawn

E – through & through

(Massey, 1992, p.14)



A – medullary rays

B – quarter sawn figure

C – flat sawn figure

(Massey, 1992, p.7)

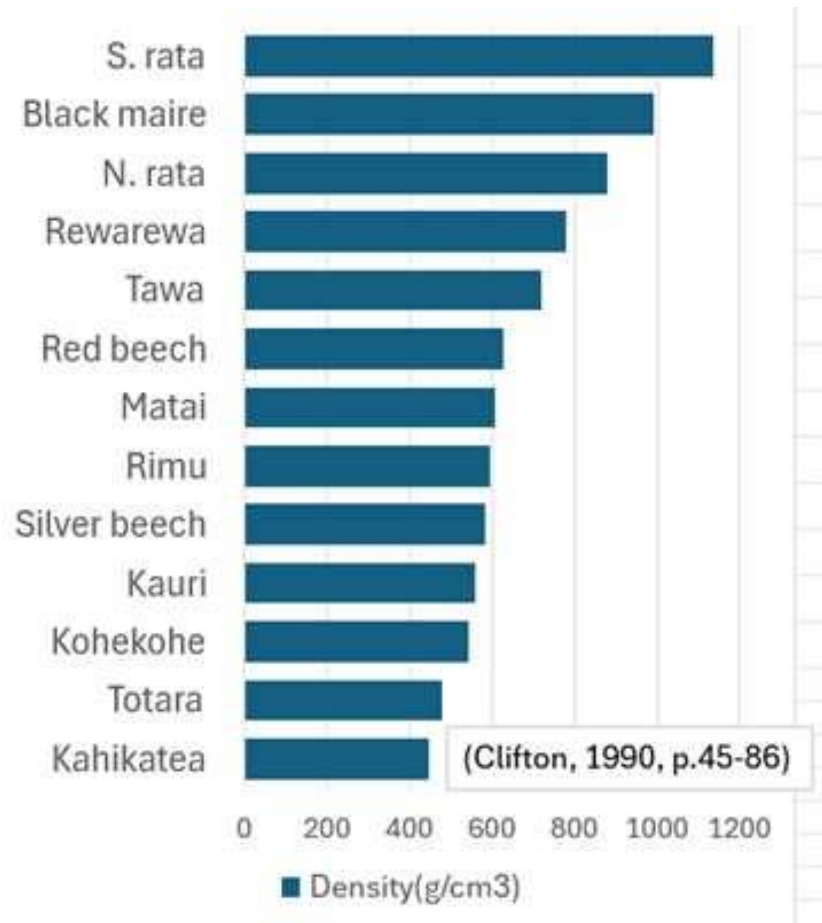
A turned piece will have some quarter sawn figure and some flat sawn figure



(Clifton, 1990)

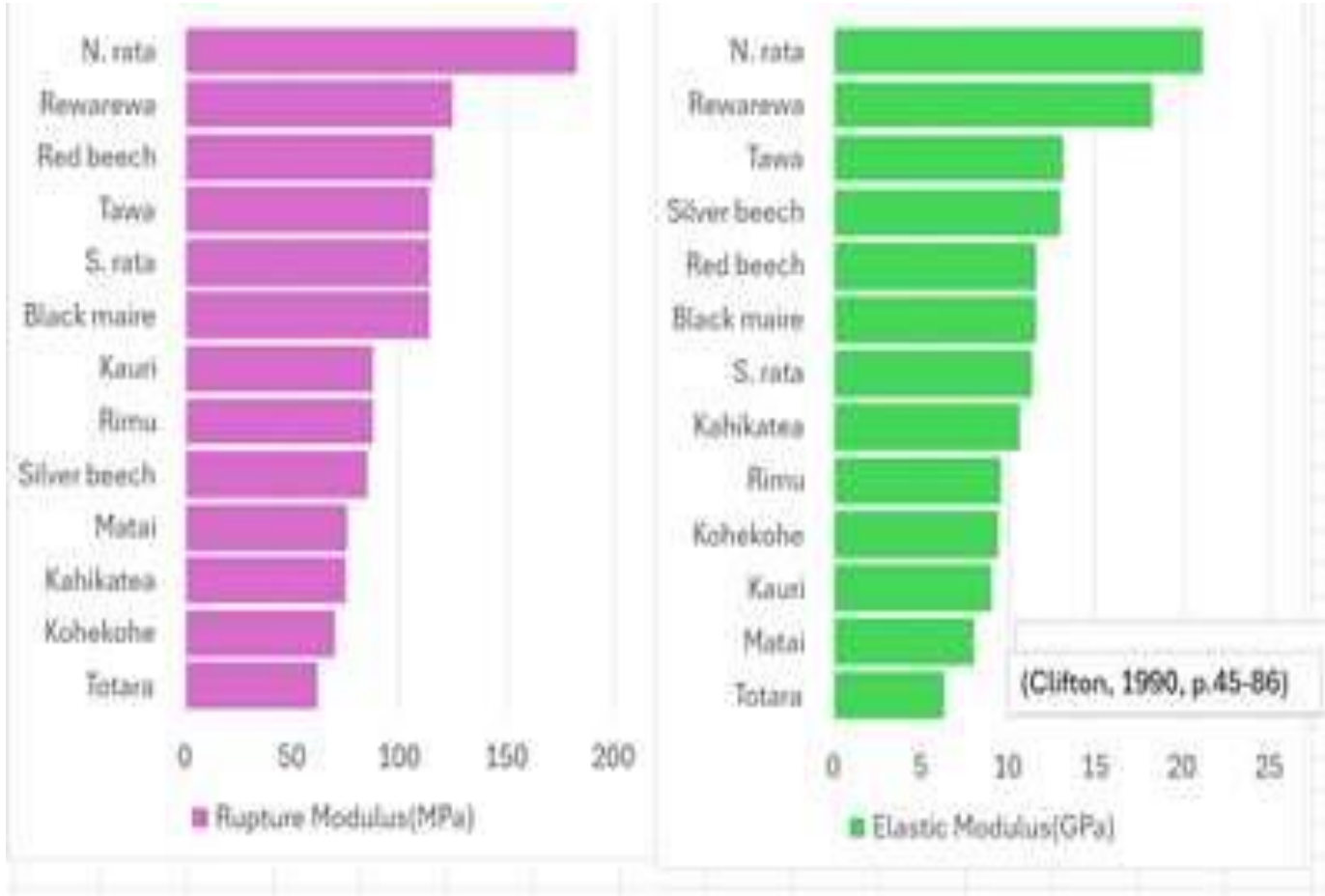


# Physical properties - density and durability



- Reasonably dense
- Sapwood non-durable and susceptible to borer
- Heartwood is more durable but not recommended for outdoor use

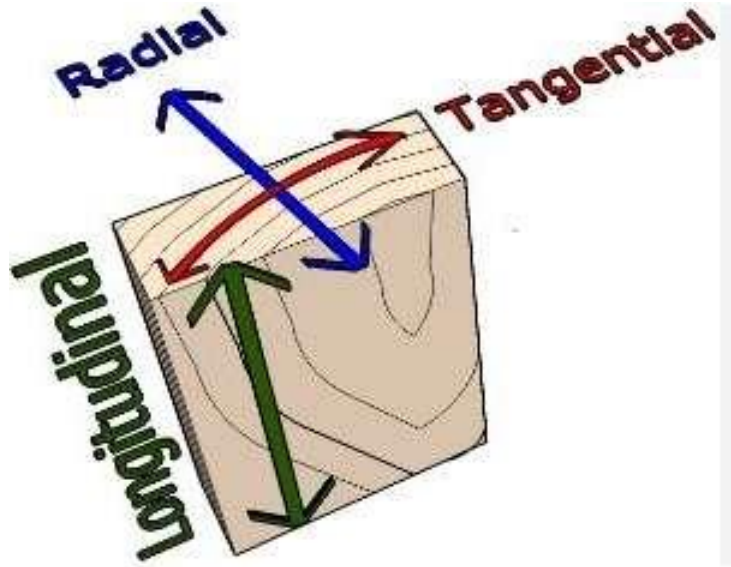
# Physical properties - strength



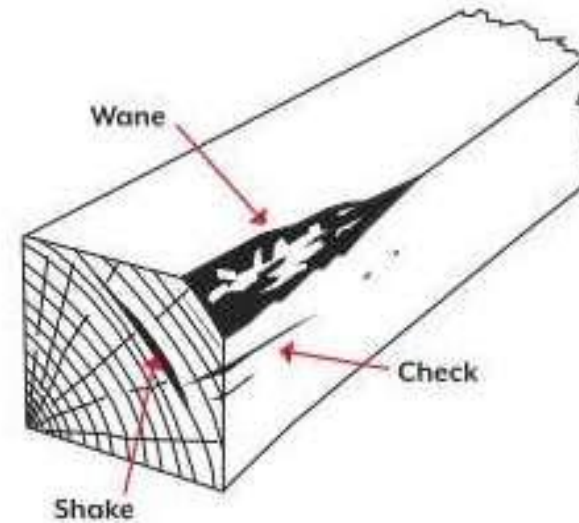
- Quite strong both in terms of
- rupture
- stiffness

# Physical properties – shrinkage 1

## Shrinkage type



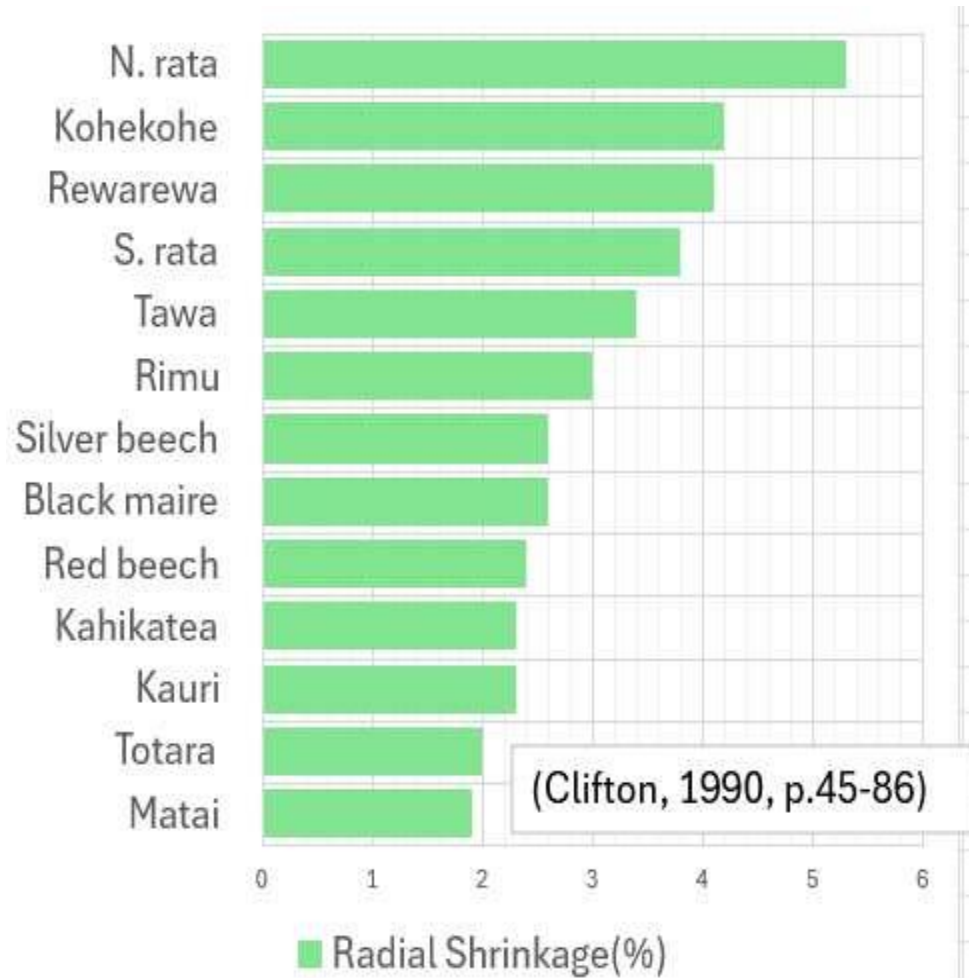
## Effects of shrinkage



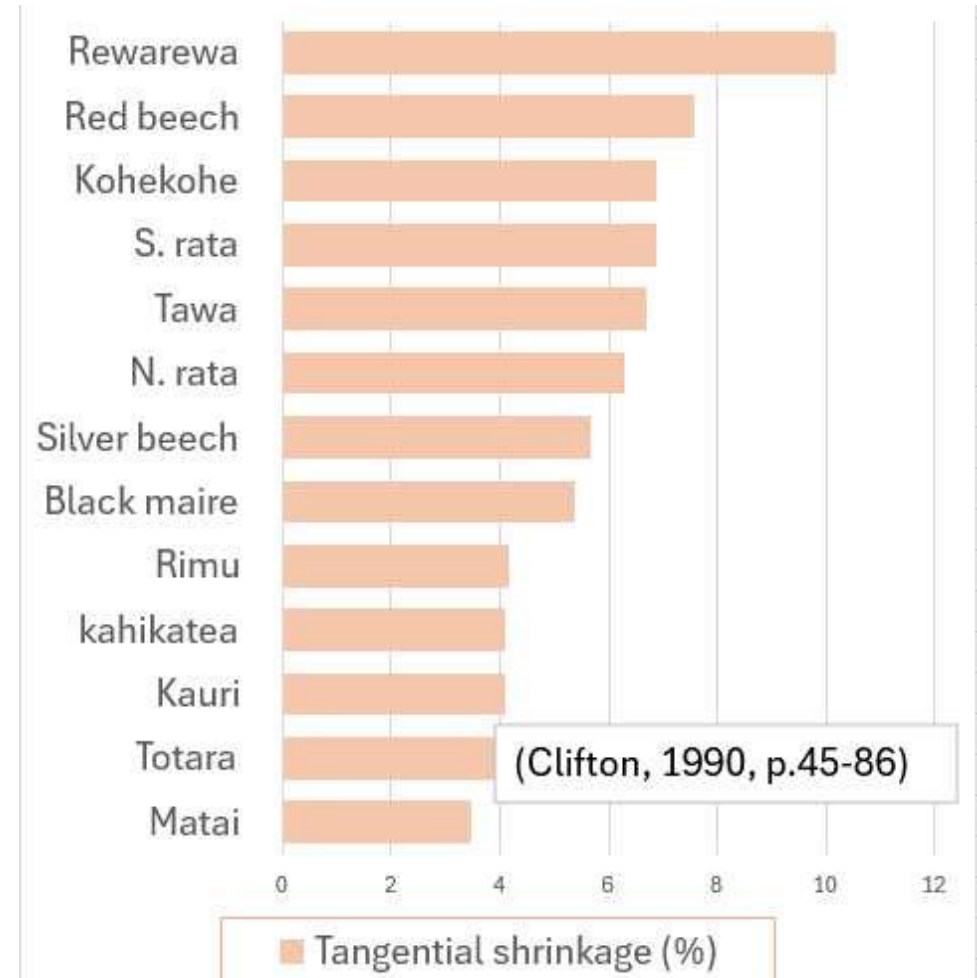
(Rogers, 2019)

# Physical properties – shrinkage 2

## Radial shrinkage



## Tangential shrinkage



# Physical properties – shrinkage 3

- "One of the most difficult timbers to dry without cracking and twisting all over the shop; often cracks internally. Very nice figure when quarter sawn and if used sparingly in small pieces, but too flamboyant for large pieces."
- (Clifton, 1990, p.158)

# Use of Rewarewa

- Little used by Maori
- Later became useful for trim in boat building along with Kohekohe because of the contrast with Kauri – borer less problematic
- Popular for inlay work
- In former times bush tramways, brake blocks, swingle-trees
- Popular today for craft woodwork

# Rewarewa references

- Clifton, N.C. 1990 New Zealand Timbers, Exotic and indigenous The Complete Guide 170 p.
- Dawson, J. and Lucas, R. 2019 New Zealand's native trees. Potton and Burton 688 p.
- Massey, B. 1987 Woodturning in New Zealand 104 p.
- Rogers, s. 2019 Wood moves, get over it.  
<https://www.mcilvain.com/news/wood-moves-get-over-it/>