Fivefinger *Pseudopanax arboreus*

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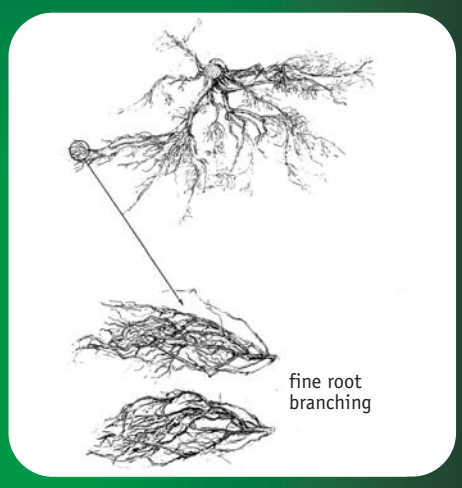
Introduction and Methods

The composition and extent of stream-side vegetation influences how well a riparian area functions and hence has a major impact on the state of streams. Though the role of exotic woody species such as willow is well recognised for improving bank stability, information on the performance of native woody species is limited. Thus, there is a need to quantify their effectiveness particularly as stream restoration enhancement projects involving native species increase in popularity.

Side view of canopy and root sytem of a 5-year old plant (see text box for dimensions)

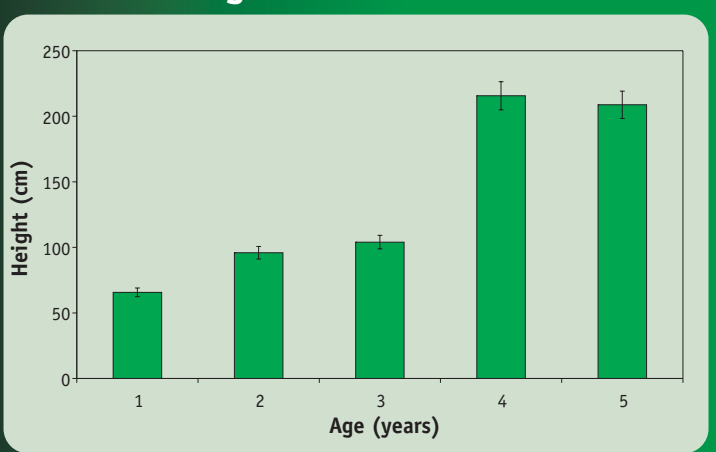
A trial was established in 1999 to assess growth performance of twelve 1 to 5 year-old native riparian plant colonisers. Ten plants were extracted each year and growth parameters measured.



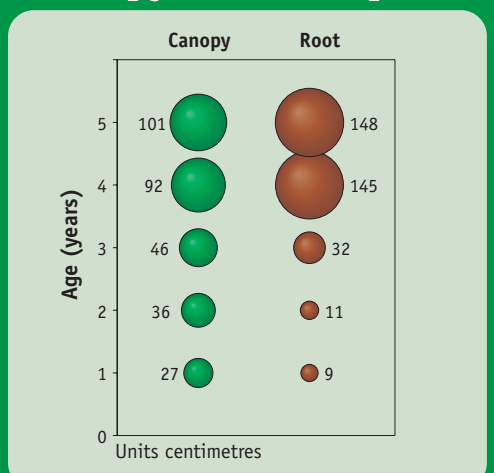
Plan view of 5-year old root system (see text box for dimensions)

Results

Tree Height

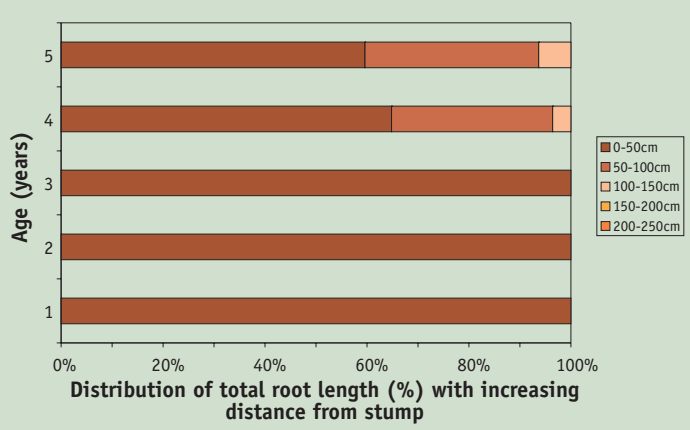


Canopy and Root Spread



Root Depth

Root Length Distribution



Distribution and Site Preferences

Occurrence	North Cape to Southland
Local occurrence	lowland forests and scrubland
Altitudinal range	sea-level to 760 m
Preferred soils	fertile and humus-rich soil
Moisture	prefers moist sites but tolerates most moisture conditions
Properties	very abundant in early stages of secondary succession, tolerates moderate frost and coastal conditions

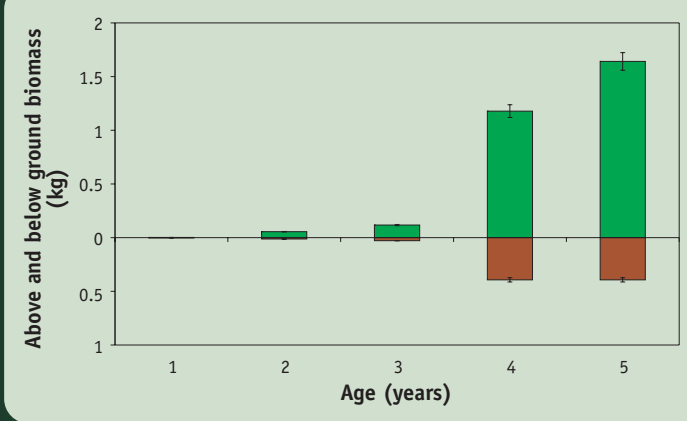
Summary of growth characteristics at age 5

Mean height	2 m, 8 m in adult trees
Mean canopy	1 m
Mean root spread	1.5 m
Max. root depth	0.3 m
Mean above ground biomass	1.6 kg
Mean below ground biomass	0.5 kg

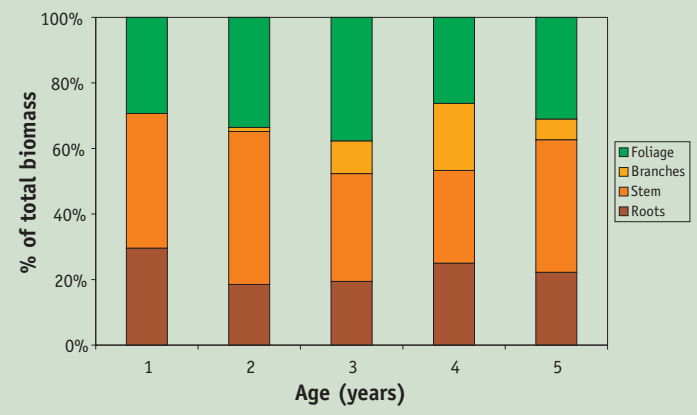
Notes: Suitable for low-tier shelter and general vegetation of disturbed sites where topsoil remains. Fertiliser is required if topsoil has been removed. Not recommended for very exposed sites subjected to strong winds. In moist climates it is suitable for planting on road embankments. Roots have moderate (mean: 28.16 MPa) tensile strength (Watson, A., Marden, M. 2004).

Suitable for streamside stabilisation of small streams with stable banks either as single species stands or in conjunction with other species. Its shallow rooting depth makes it unsuitable for riverbank stabilisation in situations where bank height exceeds the maximum rooting depth (~2m) of adult plants.

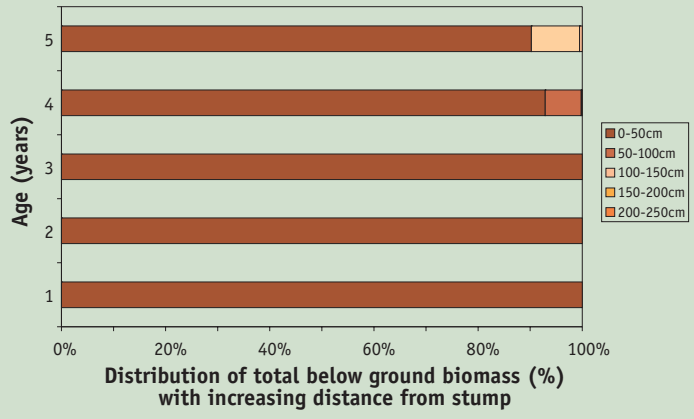
Biomass



Total Plant Biomass



Root Biomass Distribution



References

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http://icm.landcareresearch.co.nz/science_themes/freshwater/stabilising_characteristics_of_nz_native_riparian_plants.htm