Lacebark *Hoheria populnea*

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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)

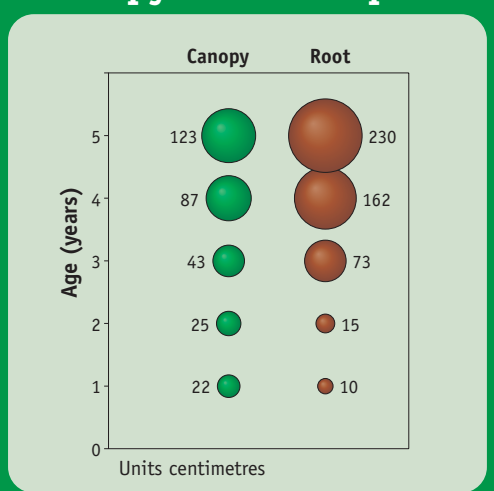
A trial was established in 1999 to assess growth performance of twelve 1 to 5 year-old native riparian plant colonisers. Ten plants were extracted each year and growth parameters measured.

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

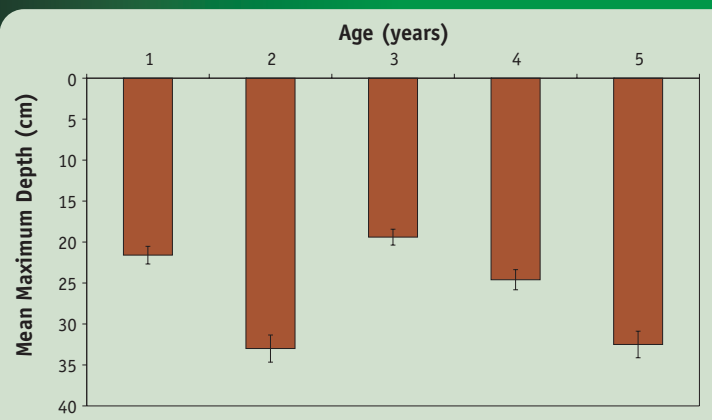
Results

Tree Height

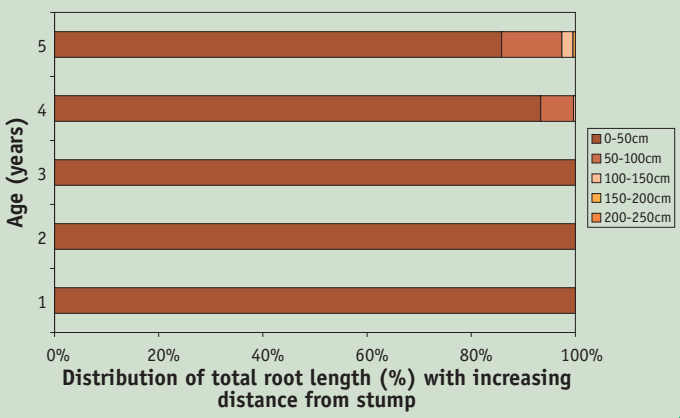
Canopy and Root Spread



Root Depth



Root Length Distribution



Distribution and Site Preferences

Occurrence	North Cape to Waikato abundant, North and South Island
Local occurrence	coastal and lowland forests, forest margins, streamsides, riverbanks
Altitudinal range	sea-level to 450 m
Preferred soils	fertile soil
Moisture	does not tolerate prolonged drought
Properties	tolerate moderate frost, not tolerant of persistent strong winds, infertile soils and excessive waterlogging

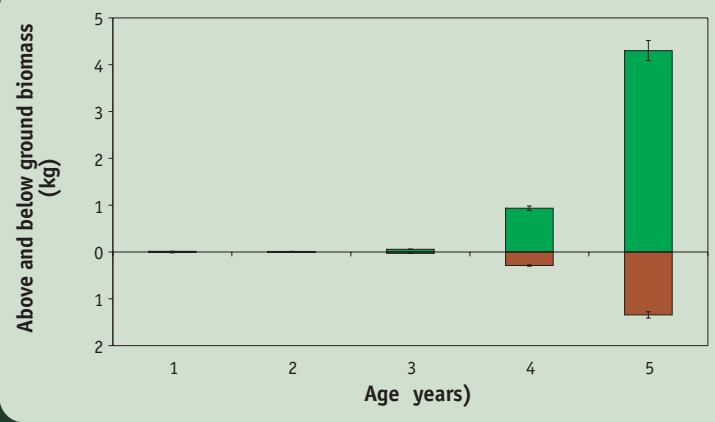
Summary of growth characteristics at age 5

Mean height	3.4 m, up to 10 m in adult trees
Mean canopy	1.2 m
Mean root spread	2.3 m
Max. root depth	0.3 m
Mean above ground biomass	4.3 kg
Mean below ground biomass	1.3 kg

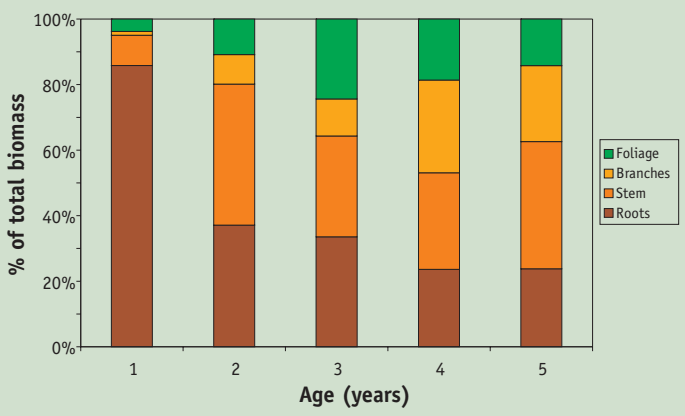
Notes: Suitable for revegetation in its natural range to provide medium height shelter. Is nutrient demanding and will impoverish the soil within its rooting zone. Is moderately palatable to browsing mammals. Roots have high (mean: 51.28 MPa) tensile strength (Watson, A., Marden, M. 2004).

Suitable for streamside stabilisation in small streams with stable banks and 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 (~2 m) of adult trees.

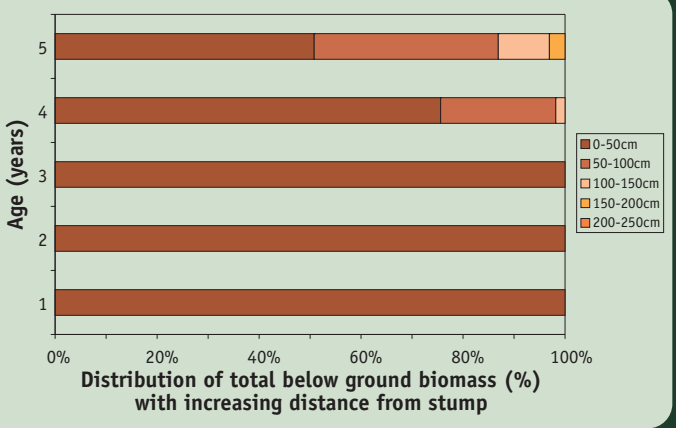
Biomass



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