

Effectiveness of weed matting on riparian plant establishment

Ms Beth Hampton¹, Dr Jacqueline Rowarth²

¹University Of Waikato, ²University of Waikato

River bank erosion has been identified as an issue for water quality resulting in recommendations for planting of the interface between aquatic and dryland ecosystems (the riparian zone). Riparian planting is associated with considerable costs in clearing, planting and ongoing management, particularly with respect to weeds.

A restoration project at Lake Okoroire in South Waikato presented the opportunity for measurement of plants 1 and 3 years old in comparison with plants 2 years old established under weed-matting. Bank 1 plants (now 3 years old) and Bank 3 (1 year old) were established using the council-recommended method of glyphosate for weed control (recommended as 2 sprays pa for 5 years). In year two, weed matting was allowed by Council on Bank 2 (now 2 years old) before planting, eliminating the need for glyphosate.

A retrospective comparison was made between groups. Plants with weed matting were vigorous, flowering, and supported considerable bee activity. Plants per m² were 88% greater under weed mat than year 3 plantings. Estimated cover of desired species was double on the weed mat site (2 years old) compared with the 3 years old site (45% and 18%). Weed suppression, including blackberry, was apparent, reducing the need for chemical control. Plant mortality on the 1 year old site was 35% - a loss of \$3,180 in plants alone. Average soil temperature was higher (0.2-0.3°C) under weed mat. No significant difference in soil moisture was found under different treatments.

Weed matting control was estimated to cost \$8742/ha, compared to initial glyphosate control costs of \$15100/ha per spraying (equivalent to \$151000/ha over five years). Replacement plant costs would be in addition.

Further research is required to assess the viability of different types of weed matting.