Testing methods to establish the late-successional native tree *Beilschmiedia tawa* in monocultures of the weed *Tradescantia fluminensis*

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Urban restoration plantings are often infested by the introduced groundcover *Tradescantia fluminensis*, which can lead to suppression of “enrichment plantings” of late-successional native tree seedlings that are planted under early-successional tree canopies. If these enrichment plantings are not successful, early-successional restoration plantings may be stalled at this stage indefinitely or lapse back into a degraded state. Weeding around late-successional enrichment plantings can eliminate physical suppression by *T. fluminensis* but lead to desiccation of the soil and dieback of sensitive enrichment seedlings. An experiment was designed that combined weeding and mulching around planted late-successional *Beilschmiedia tawa* seedlings in a full factorial design. Mulching occurred at two levels: mulch and no mulch, and weeding occurred at three levels: unweeded, initially weeded and repeatedly weeded (every 3 months). It was hypothesised that mulching would retain soil moisture and provide a physical barrier against *T. fluminensis* growth, while weeding of *T. fluminensis* would reduce physical suppression of *B. tawa*. Replicate sites (n=11) throughout Hamilton had closed tree canopies comprised of at least half natives over established *T. fluminensis* patches that *B. tawa* seedlings were planted into. Treatment effects on *B. tawa* seedling growth were quantified by measuring relative growth rate (a composite of shoot height and trunk diameter over time), number of seedling leaves, and seedling survival. Height of *T. fluminensis* and soil moisture in each plot were also recorded. Data were analysed by two-way ANOVA where variables were mulch and weeding. First year results of this two-year experiment are presented. Mulching and weeding had no significant effects on soil moisture, *B. tawa* seedling survival, or number of *B. tawa* seedling leaves. Lack of differences in *B. tawa* seedling survival and number of leaves may be explained by the lack of difference in soil moisture, as desiccation is often a driver in *B. tawa* seedling death. There was a significantly greater relative growth rate of *B. tawa* in unmulched plots. Future soil testing will determine if mulch as a carbon source is making nitrogen unavailable for seedling growth. Initial weeding versus repeated weeding within a year reduced *T. fluminensis* height equally, which could help inform weeding budgets of natural areas. Re-measurement at year two will determine whether these trends continue.