Direct seeding urban wildflower meadows to reinstate species from threatened plant communities. A case study from Melbourne Katherine Horsfall¹ Stephen Livesley¹ John Delpratt¹ Lee Harrison² Meg Hirst³ Nicholas Williams¹ 1 Green Infrastructure Research Group, University of Melbourne, Burnley, VIC 3121, 2 City of Melbourne, Melbourne VIC 3001, 3 Royal Botanic Gardens, Melbourne VIC 3004

Background

Wildflower meadows are increasingly popular internationally, as they enhance the amenity and biodiversity of urban landscapes and require less maintenance than mown turfgrass. Direct seeding can create dense ground-layer vegetation, reducing potential for weed invasion and avoiding the expense of tubestock. This project adapts methods used in grassland restoration to meet the challenges of urban soil contamination, weed competition and soil nutrient enrichment. It tests the capacity of sand to support the germination and establishment of indigenous grassland and grassy woodland species from Melbourne, Australia.

Study Design

27 species sown on two depths of sharp sand (10 and 80 mm) as well as site soils

Seed hand-sown in April 2020 and 3 mm irrigation provided daily

Hand weeding every 2nd month, recording weed dry biomass and weeding duration

Plant cover and species richness assessed at six and twelve months















The meadow established well, with relatively even cover of native species one year after sowing. Weeding effort and weed biomass were greater on control plots (site soils) compared to 🗄 100sand plots.

sowing.



Conclusion Direct-seeded native wildflower meadows present a new opportunity to re-establish species from threatened plant communities in Australia's cities and towns, to improve the biodiversity of the urban realm. Using low-nutrient substrates as soil surface treatments can reduce management effort during meadow establishment.



Results

25 of the 27 sown species were present one year from





Month of weeding

Cumulative weeding time on 25 m² plots



@melbourne_meadows

k.horsfall@student.unimelb.edu.au