



Department of Botany Seminar

Brad Howlett

Pollination Entomologist, Plant and Food Research **Designing native plantings for crop pollination**



Protecting, establishing and managing biodiverse semi-natural habitats supports pollinator diversity in agroecosystems. However, plant biodiversity alone may not lead to optimised crop pollination if species-level relationships between insects, crops and non-crop vegetation are ignored. We demonstrate the concept of designing mixed species native plantings (a type of semi-natural habitat and hereafter referred to as ‘designed plantings’) to boost verified

non bee and bee pollinators of five mass-flowering crops based on plant-insect interactions in an intensively managed landscape. Existing information identifying interactions between pollinators with native plants and crop species was used to design plantings that were subsequently established on three farms. We anticipated 21 crop pollinating species would be supported by the plantings of which 20 were verified in observational surveys five years post establishment. Anticipated bee-plant species interactions were largely confirmed, but for non-bees, actual networks highlighted a larger, more complex web than anticipated: the plantings were particularly effective in supporting these interactions. Most immature life-stages of non-bee pollinators were not directly supported by plantings and separate strategies should consider their requirements. Presenting the plant-pollinator networks to relevant industries has been a powerful tool for incentivising their support for designed habitats on farms.

Wednesday 4 August 2021, 12.00 noon

Physical Education Building, 55 Union St West, room 2.13

For those who cannot attend in person, you are welcome to join via the Zoom link below:

<https://otago.zoom.us/j/94239463064?pwd=d051YWFwdVB1bi9FSzBjYzkwNWJB>

UT09 Password: 807740