

Are invasive grasses directly impacting native plant diversity?

Richard Duncan, Andrew O'Reilly-Nugent, Don Driscoll, Sarah Bates, Jane Catford, Pete Thrall, Luke Barrett,



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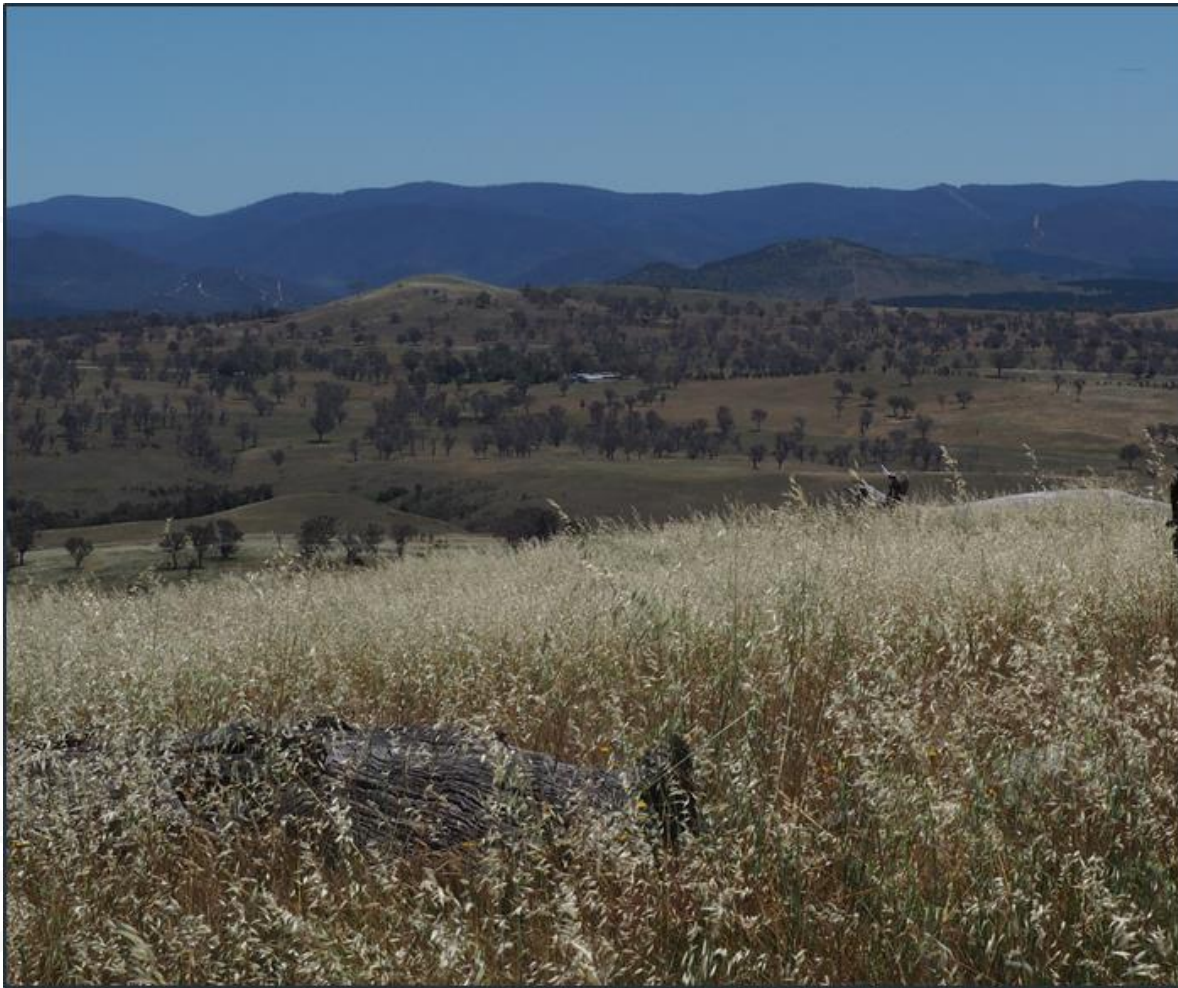
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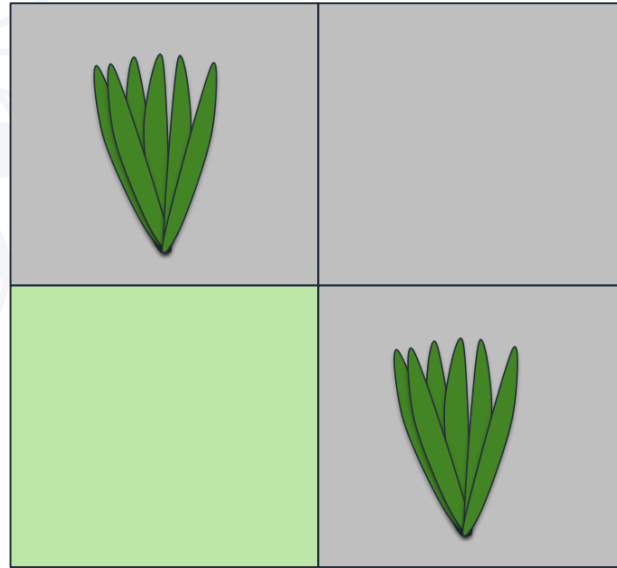
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1. Changing environment or competitive displacement?



Sites suited to native species

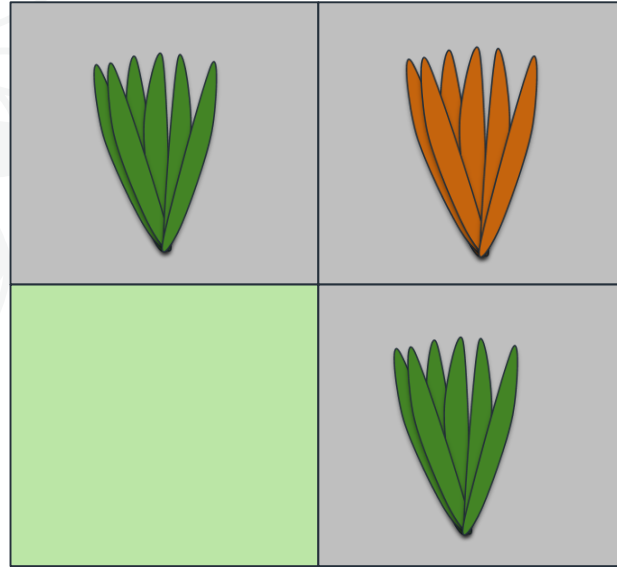


Sites not suited to native species

1. Changing environment or competitive displacement?



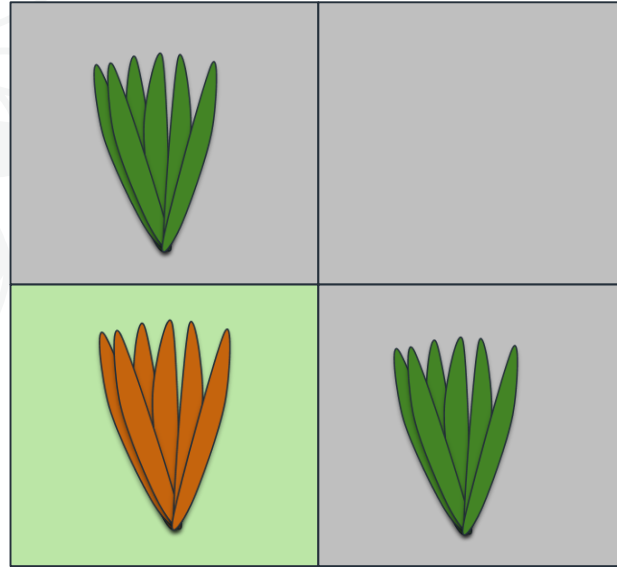
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1. Changing environment or competitive displacement?



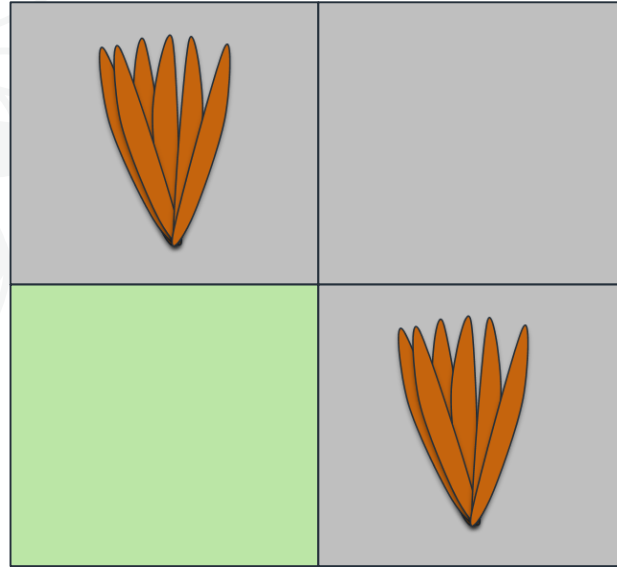
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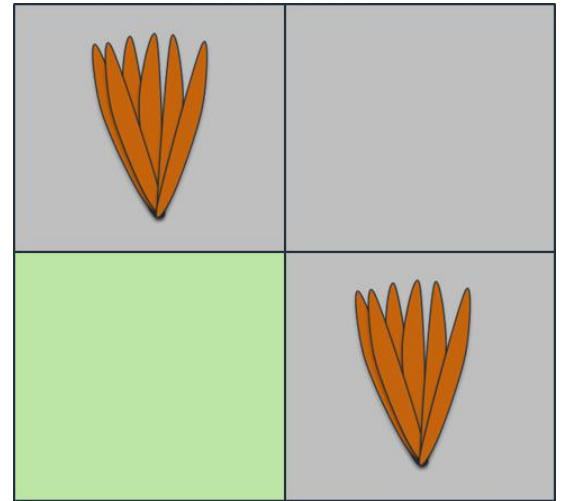
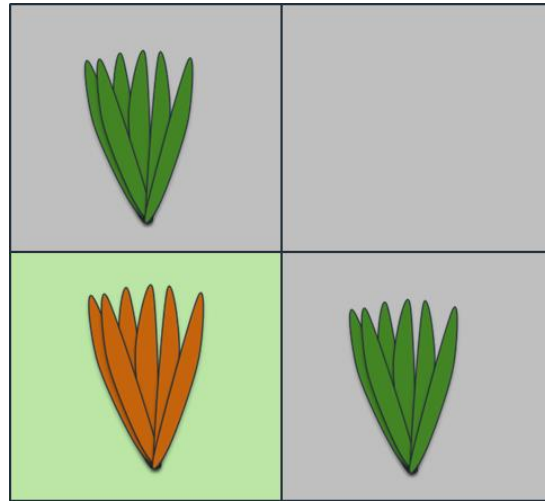
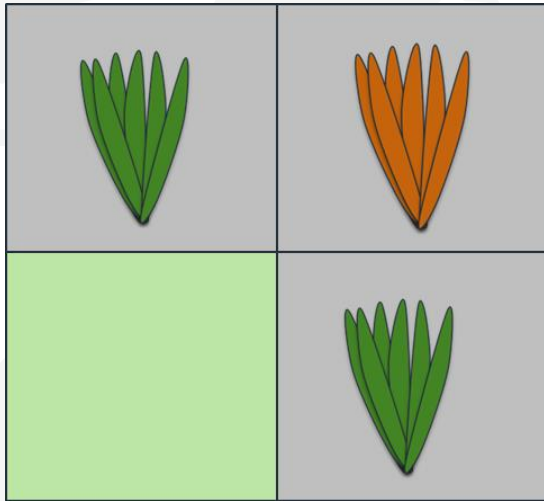
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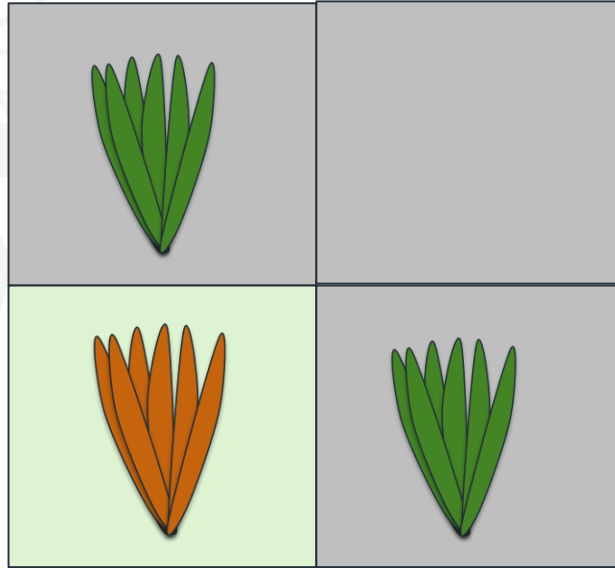
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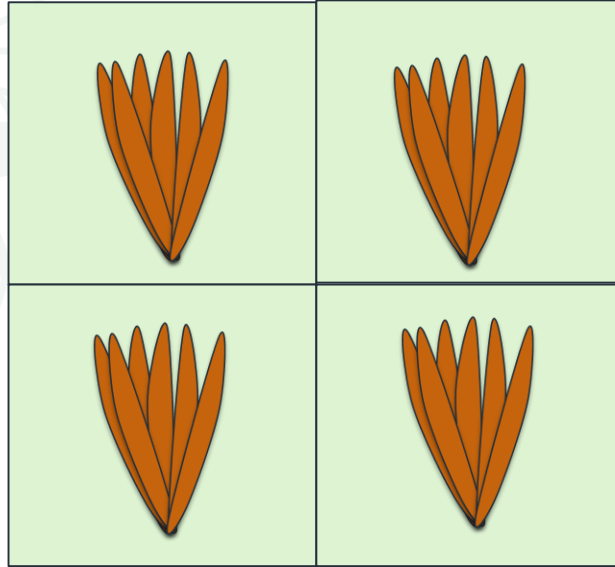
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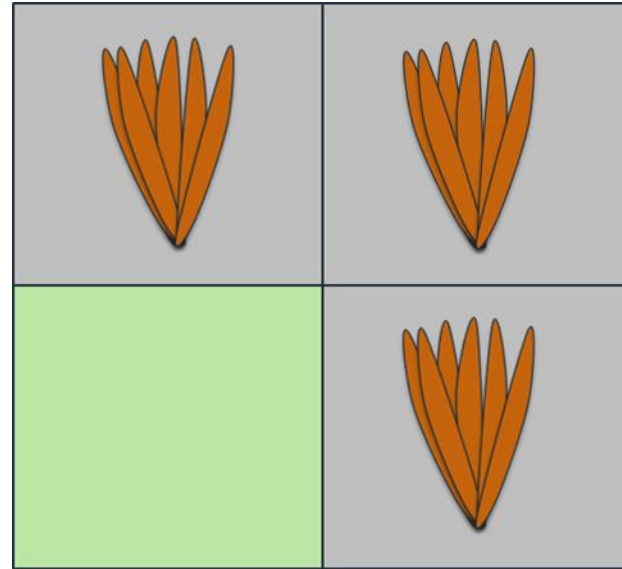
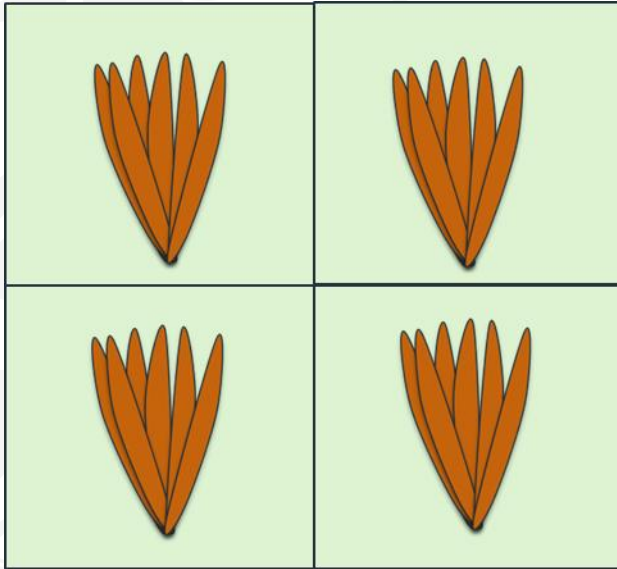
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1. Landscape scale observational data & large-scale manipulations
2. Common garden experiment



1. Changing environment or competitive displacement?

1.1 Landscape scale manipulations

friends of the pinnacle

weed control

weeds home recent effort past effort achievements resources

- about the pinnacle
- about us
- walking
- newsletters
- photo gallery
- weed control
- other issues
- useful links
- contact us

- be involved
- activity logging
- website updates
- website help
- contact the webmaster

The invasion of weeds is arguably one of the most obvious and serious threats to the environmental values of The Pinnacle. The consequences include the elimination of native grass species and the destruction of habitat that native birds and animals use for shelter, food and nesting. Weeds also alter bushfire pattern and intensity, and contribute to loss of plant cover and soil disturbance.

Fotpin's weed control activities have been based on a [Weed Management Plan](#) prepared by members in 2009-2010, based on a detailed survey of weeds present (more details [below](#)).

If you walked through the Reserve in late spring or early summer at that time you could suddenly be in a forest of vicious saffron thistles, surrounded by the bright yellow flowers of St. John's Wort or confronted by a thicket of briar roses or blackberries. The good news is that, thanks to the efforts of our volunteers, the worst weeds are much less prevalent now than they used to be and small native plants and grasses are slowly making a comeback. Continued vigilance is required to consolidate and extend these gains and make the Reserve an area where native plants are more visible than the weeds.

A weed can be an exotic or native species that colonises and persists in an ecosystem in which it did not previously exist. Weeds range in size from small herbs (e.g. Paterson's Curse, *Verbascum sp.*) and grasses to shrubs (e.g. Briar Rose, *Cotoneaster sp.*) and trees (e.g. Chinese Pistachio). Not all weeds pose the same risk to native ecosystems. For more information, see our [guide to the risk](#) of all the exotic species that have been found on The Pinnacle Mature Reserve.



Current Weeding Activities

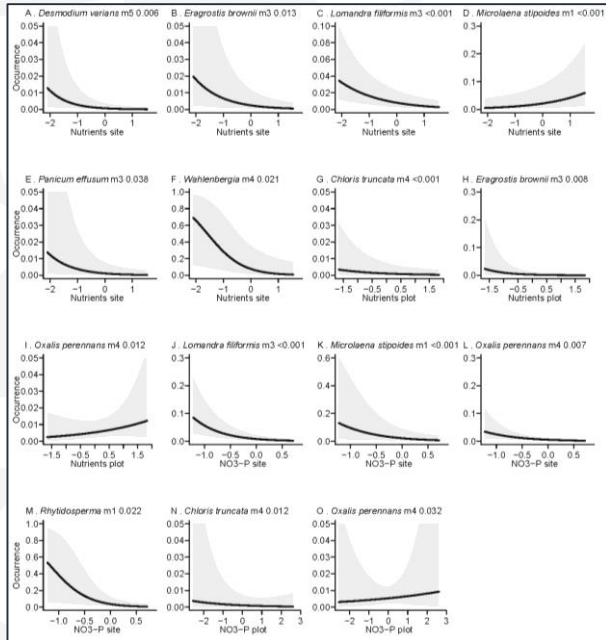
search tips advanced



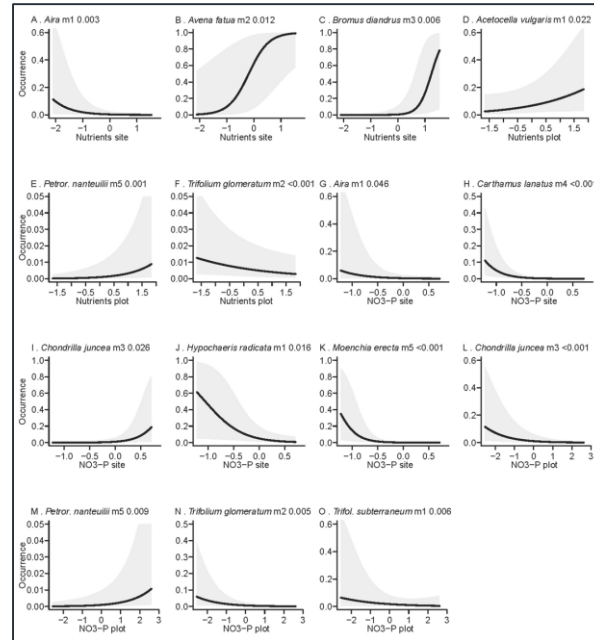
1. Changing environment or competitive displacement?

1.1 Landscape scale manipulations

Native



Non-native



1. Changing environment or competitive displacement?



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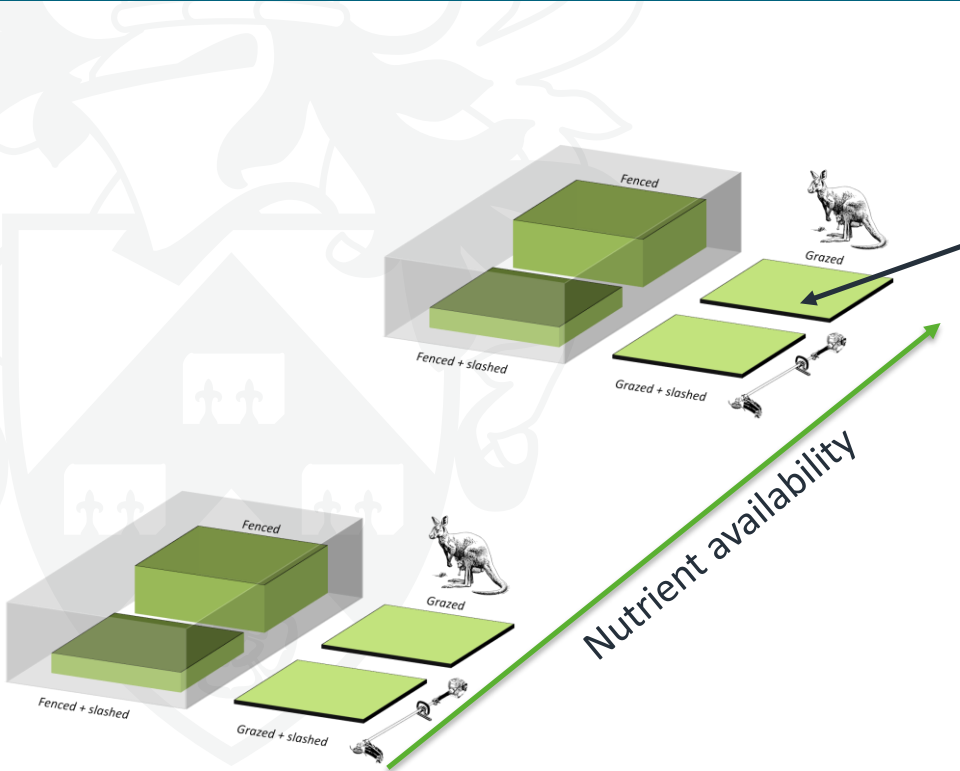
1.1 Landscape scale manipulations





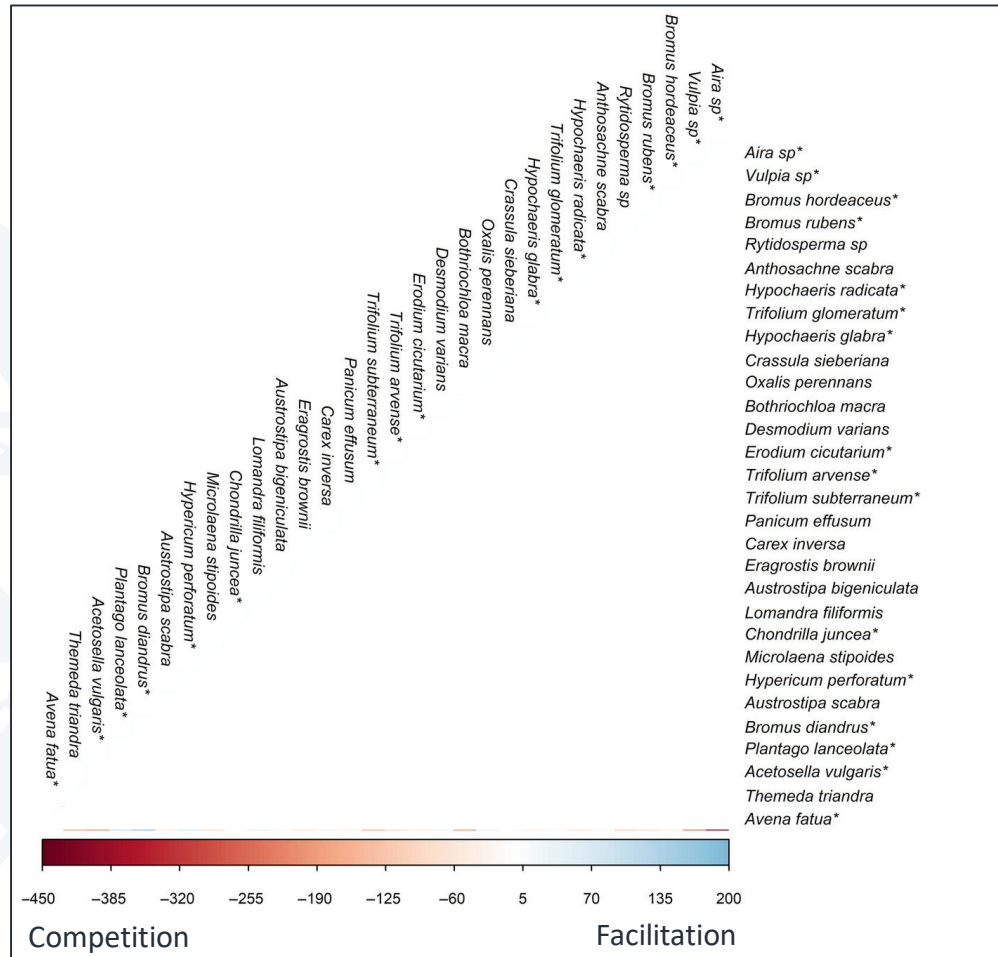
1. Changing environment or competitive displacement?

1.1 Landscape scale manipulations



Natives **present**: invaders competitively excluding otherwise.

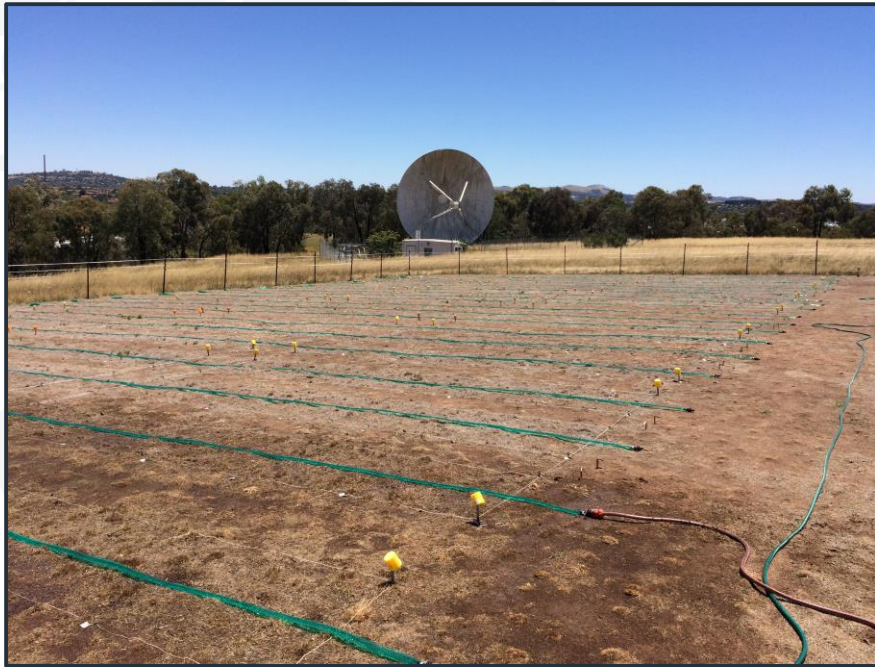
Natives **absent**: environmental change favours invaders.





1. Changing environment or competitive displacement?

1.2 Common garden experiments



None





1. Changing environment or competitive displacement?

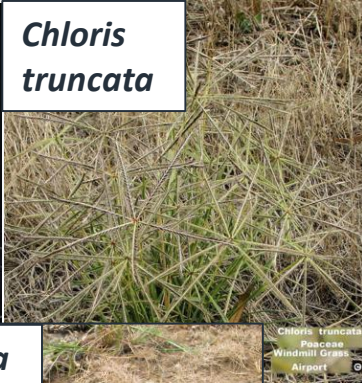
1.2 Common garden experiments

NATIVE

*Rytidosperma
caespitosum*



*Chloris
truncata*



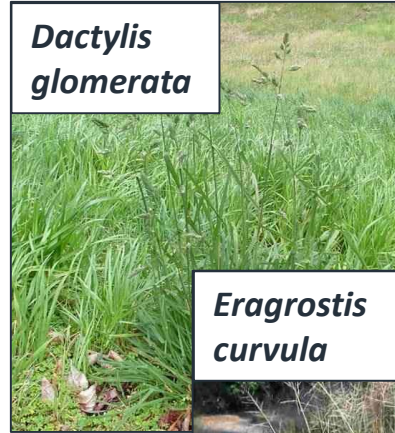
*Bothriochloa
macra*



Chloris truncata
Poaceae
Windmill Grass
Airport

NON-NATIVE

*Dactylis
glomerata*



*Phalaris
aquatica*



*Eragrostis
curvula*

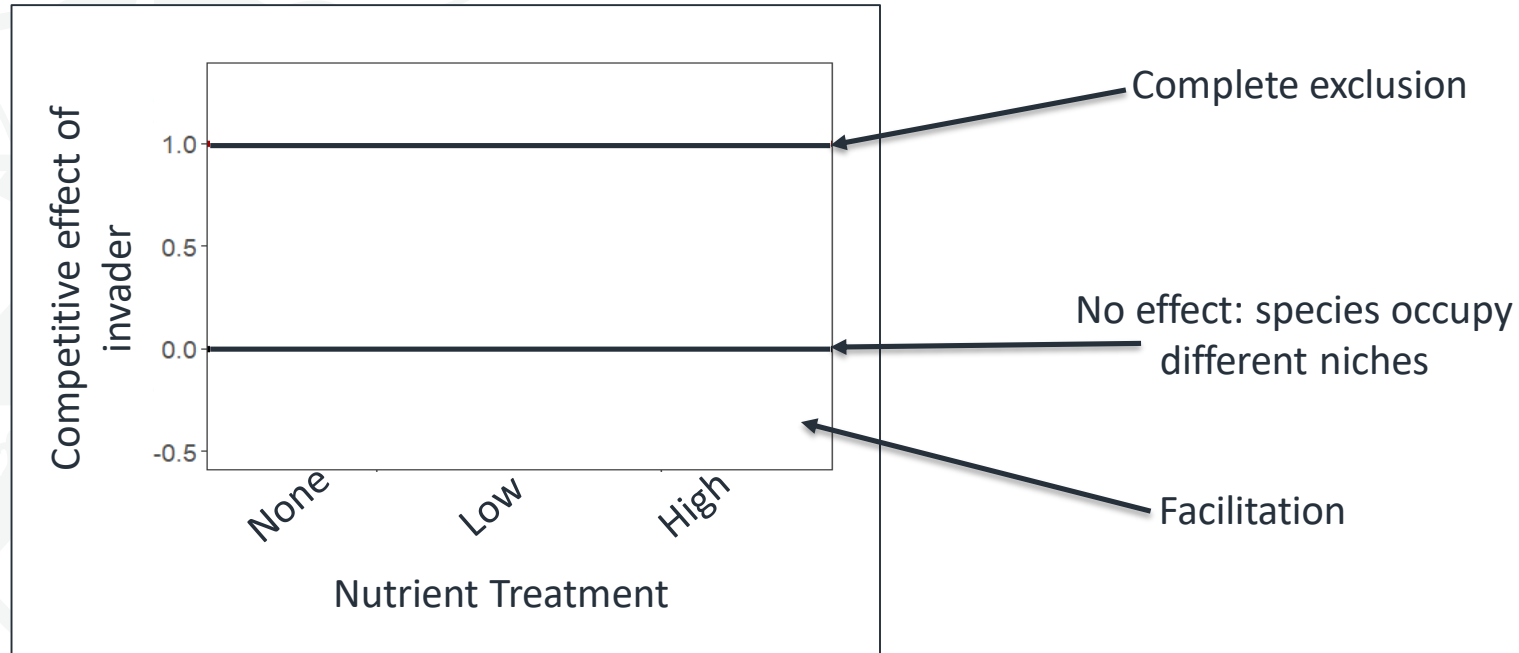


Photos: Lucid key server



1. Changing environment or competitive displacement?

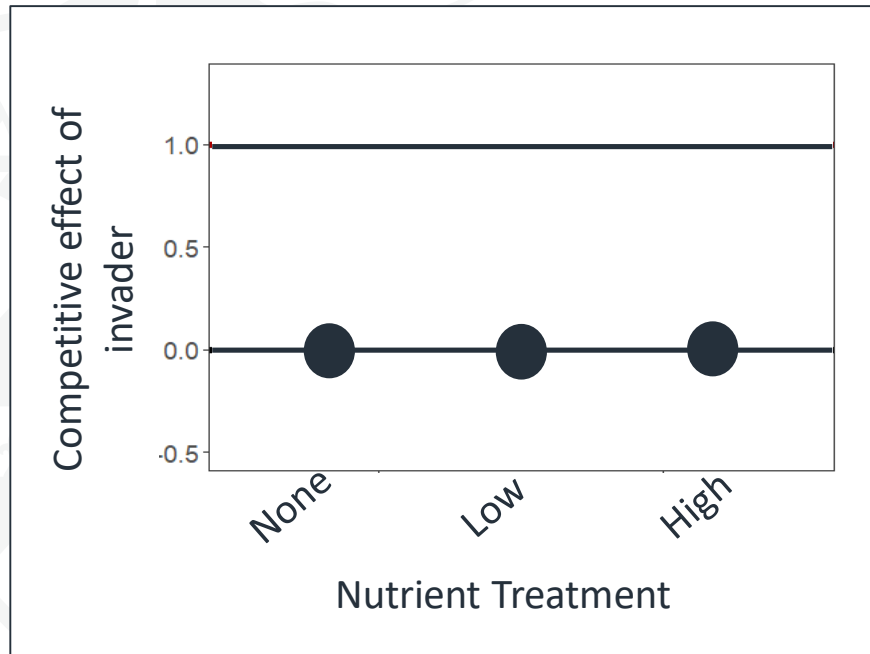
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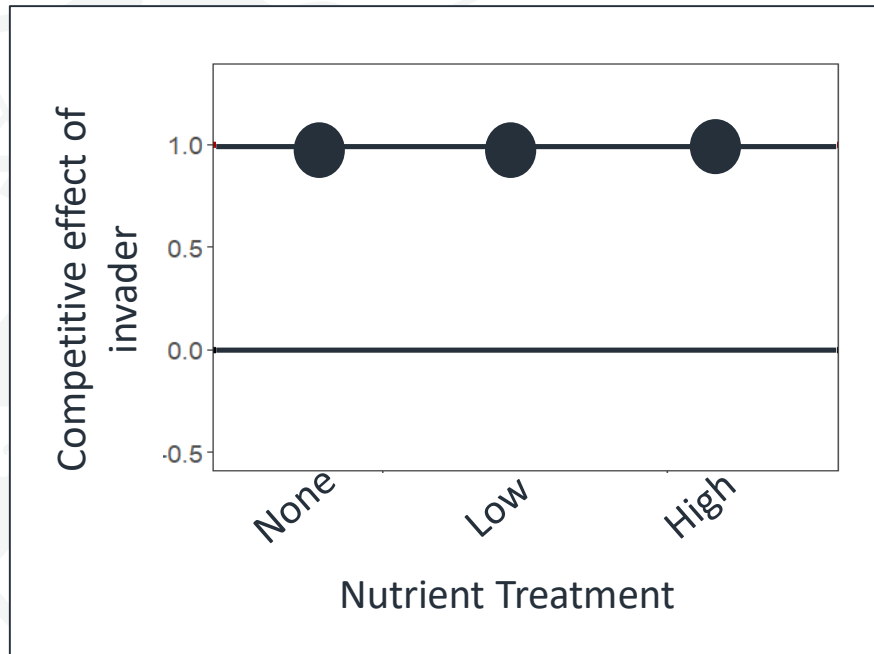


Native and invasive species
occupy different sites.



1. Changing environment or competitive displacement?

1.2 Common garden experiments

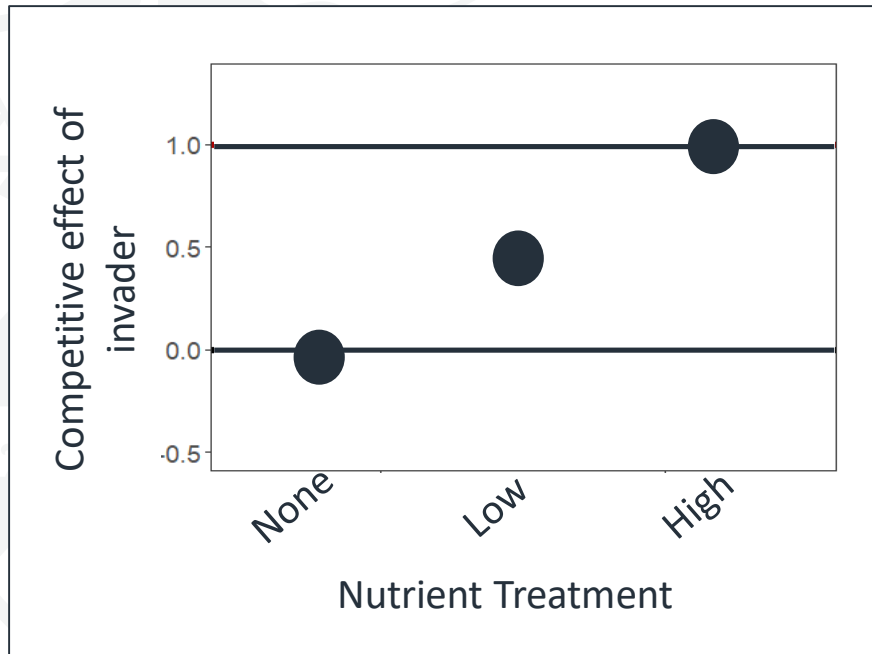


Invasive species always competitively excludes native from sites.

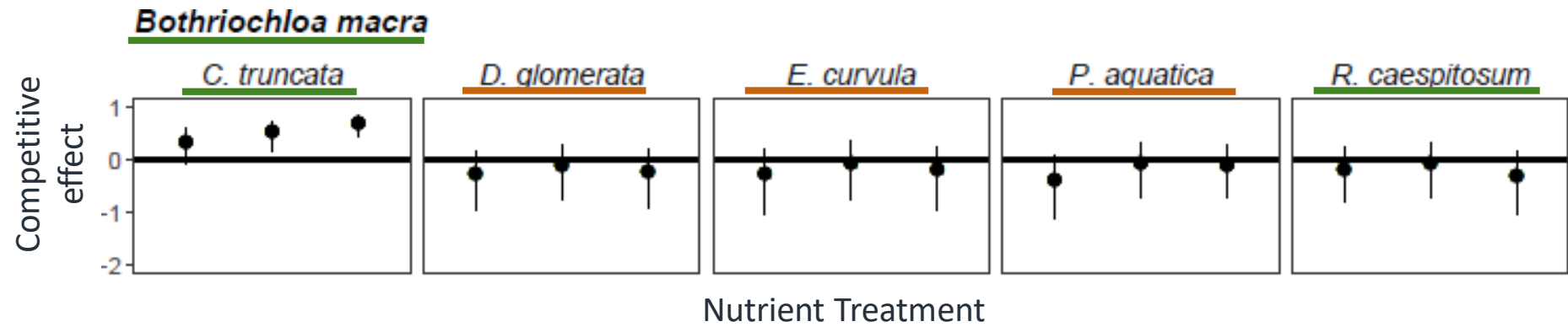


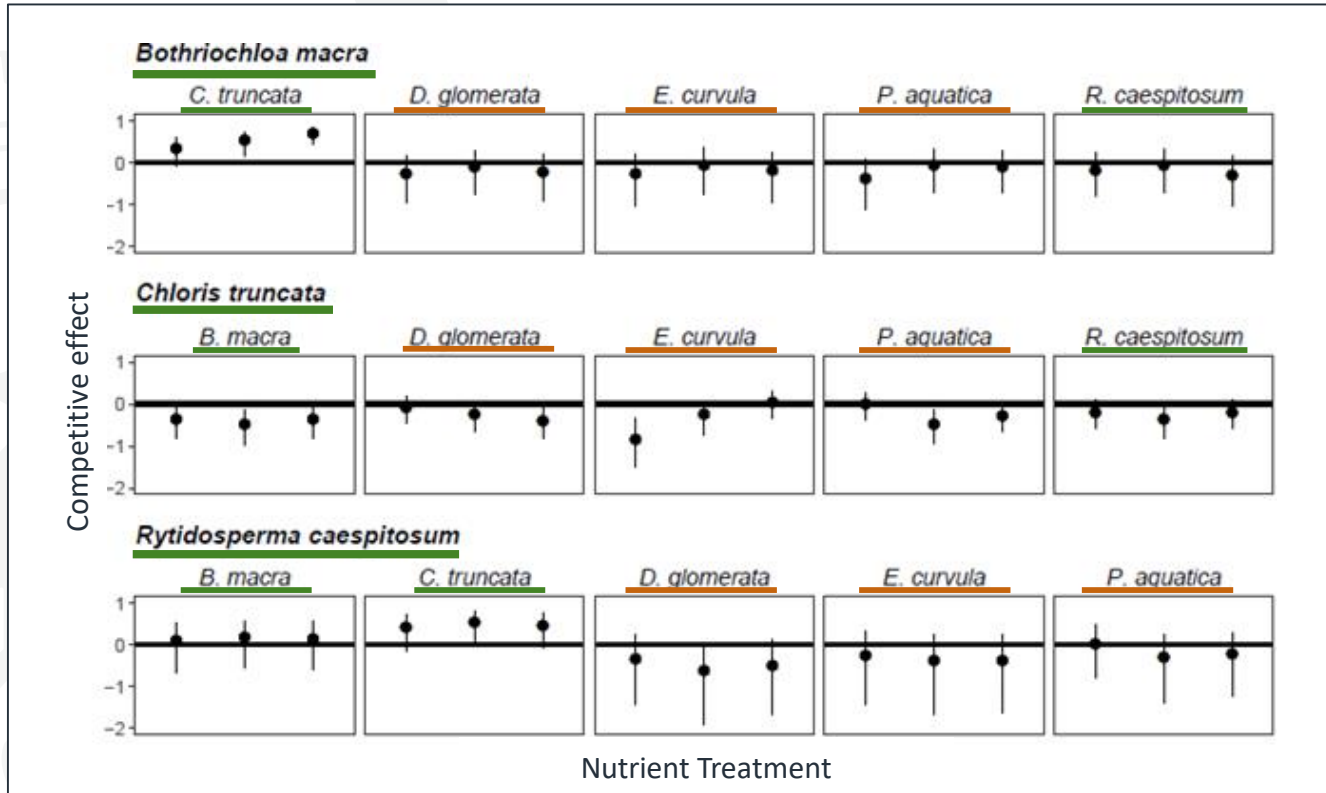
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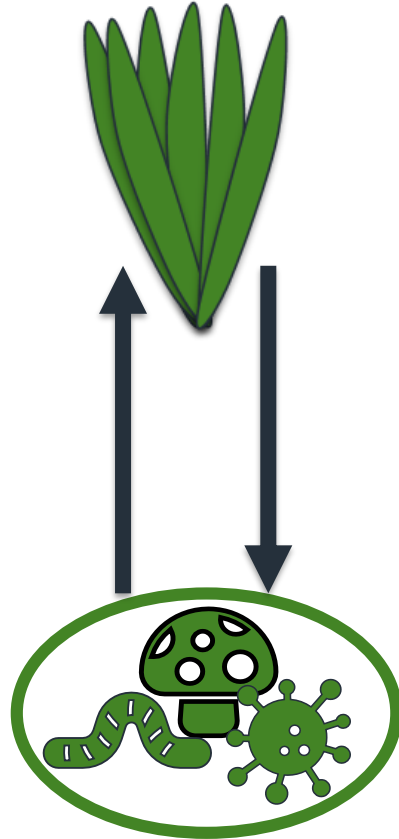


Invasive species only competitively exclude natives under high nutrient levels.

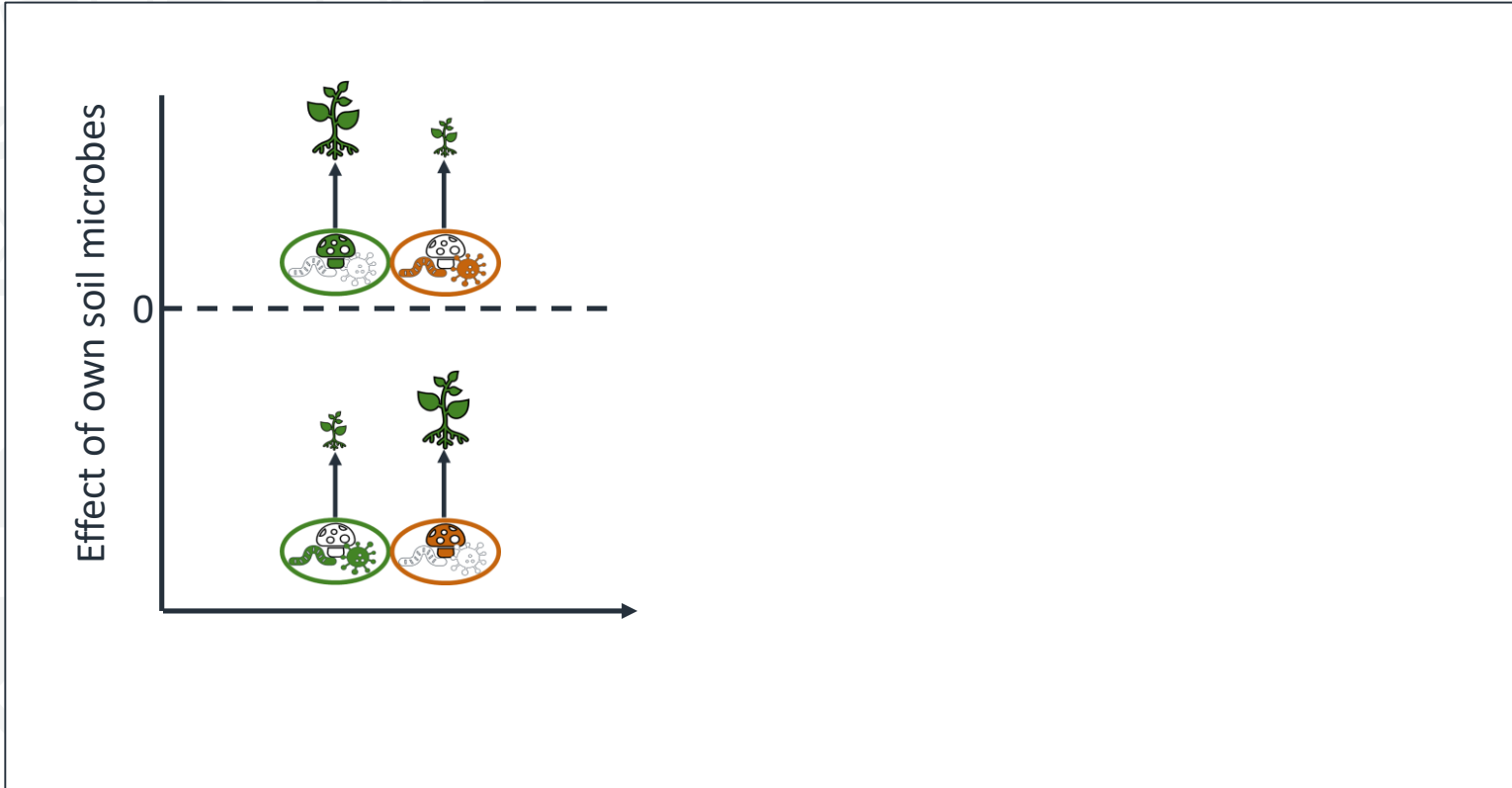




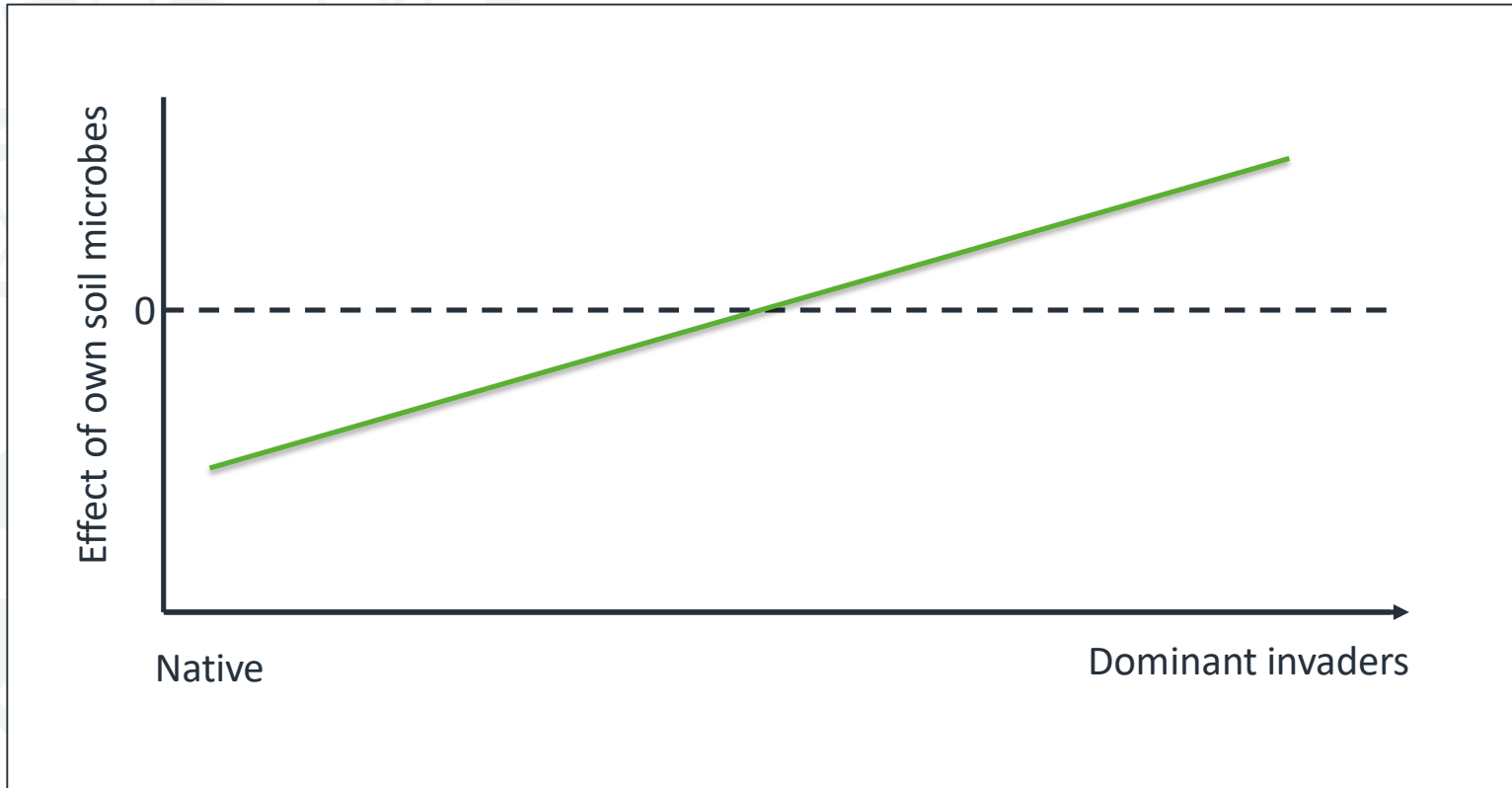
2. Do soil microbes influence invasion outcomes?



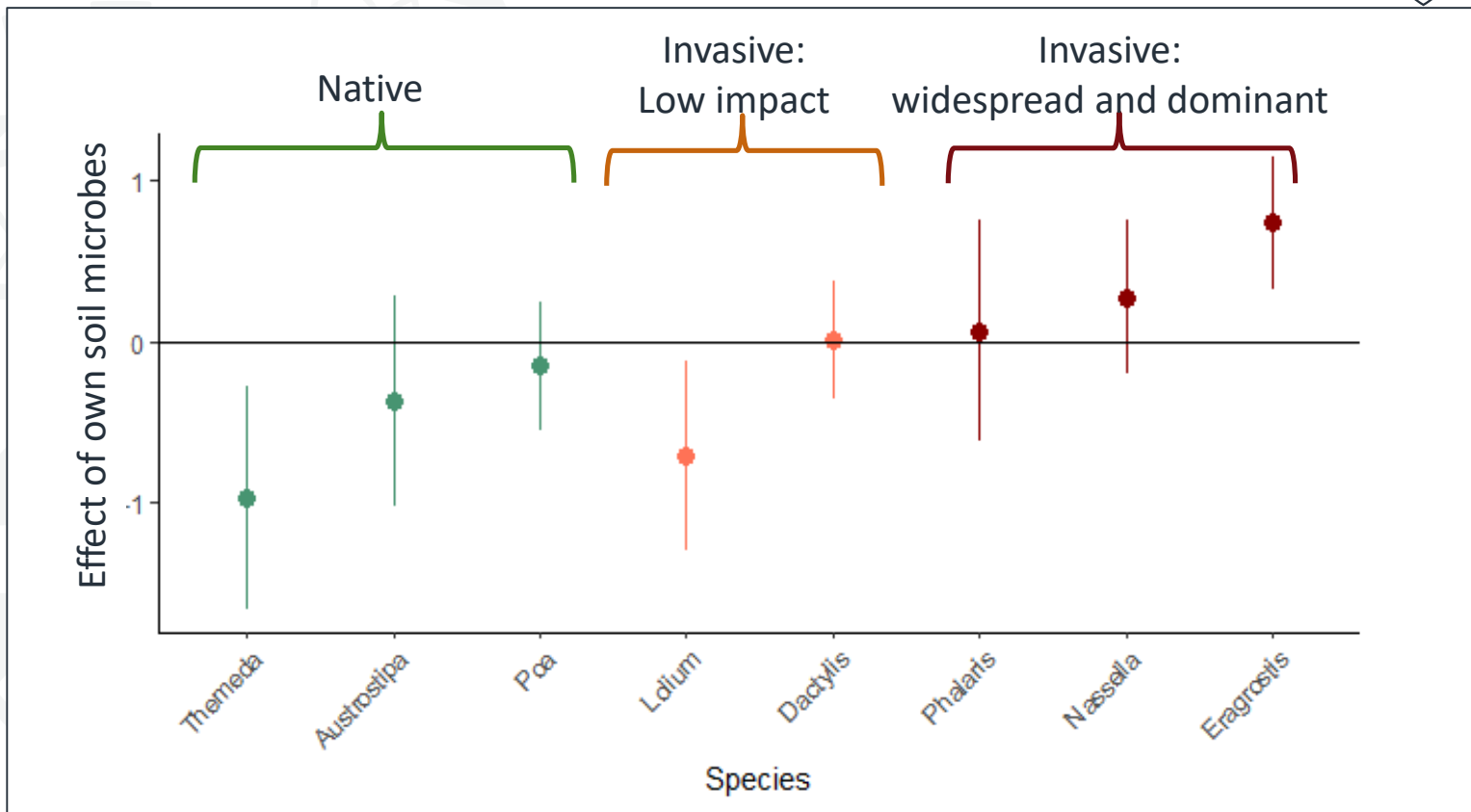
2. Do soil microbes influence invasion outcomes?



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**Are invasive grasses directly
impacting native plant
diversity?**

Thank you:

Spaceman Africa, Vernon Arguelles, Andy Duncan, Bruno de Oliveira Ferronato, Claire Foster, Kyle Hemming, Rheyda Hinlo, Pandora Holliday, Angelica Lopez, Margarita Mendoza, Andrew O'Reilly-Nugent, Luke Richmond, Rakhi Palit, Lise Sandenberg, Ingrid Stirnemann, Anne-Lise Tromelin

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