

invasion by exotic species is an environmental management challenge case



@cjlortie

environmental management challenge case

[Biological Invasions](#)

September 2017, Volume 19, [Issue 9](#), pp 2533–2542 | [Cite as](#)

Home and away: biogeographical comparison of species diversity in *Thymus vulgaris* communities

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novelty

excellent team science

many sites and in two countries

explored ecosystem engineering of an exotic species

explored context dependence

challenge

invasive species homogenize the world
and
alter ecosystem services



local variation within a region
and
even within a species
within a region
is a profoundly important
'when'
for environmental
management of invasion

methods



7 and 10 sites in the
home and the away region



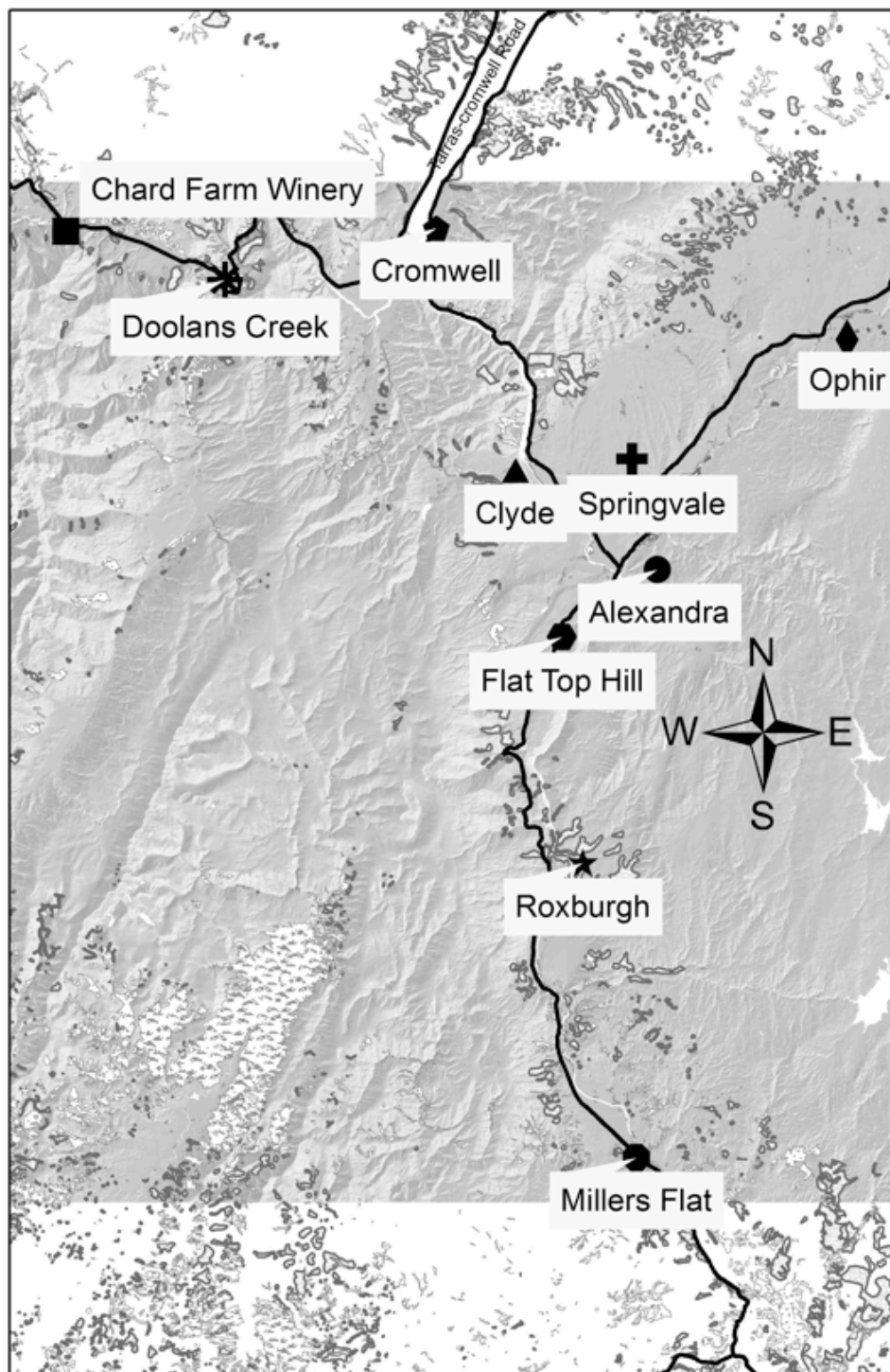
France



NZ



NZ

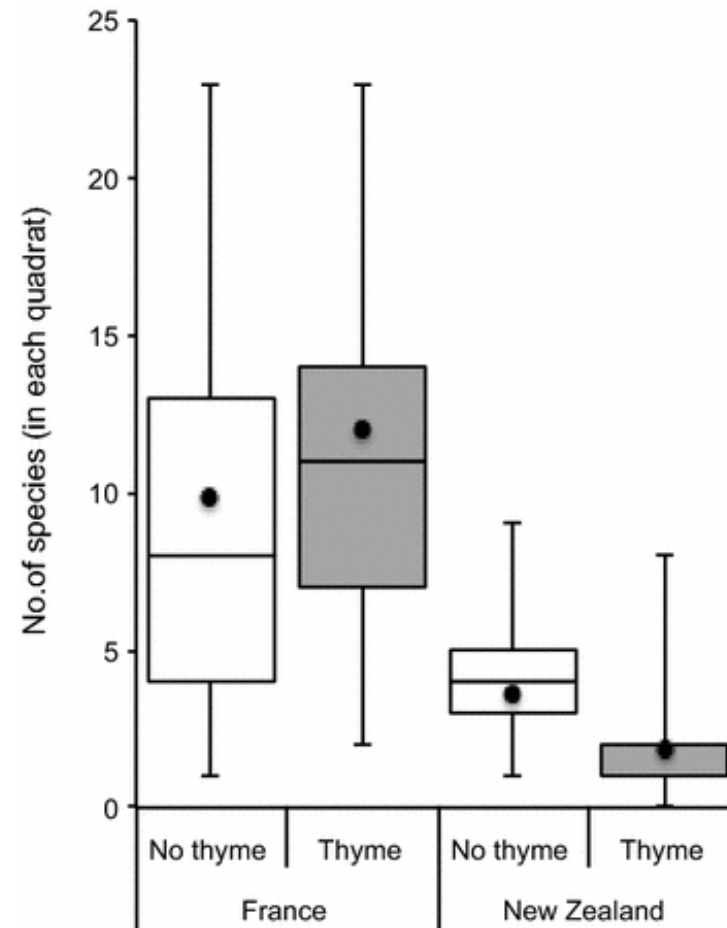


Coordinate System: New Zealand Transverse Mercator
Projection: Transverse Mercator
Datum: NZGD 2000
False Easting: 1,600,000.0000
False Northing: 10,000,000.0000
Central Meridian: 173.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter



surveys each region using quadrats
i.e. biodiversity census

evidence



thyme increased diversity in native range (home)
and decreased diversity novel range (away)

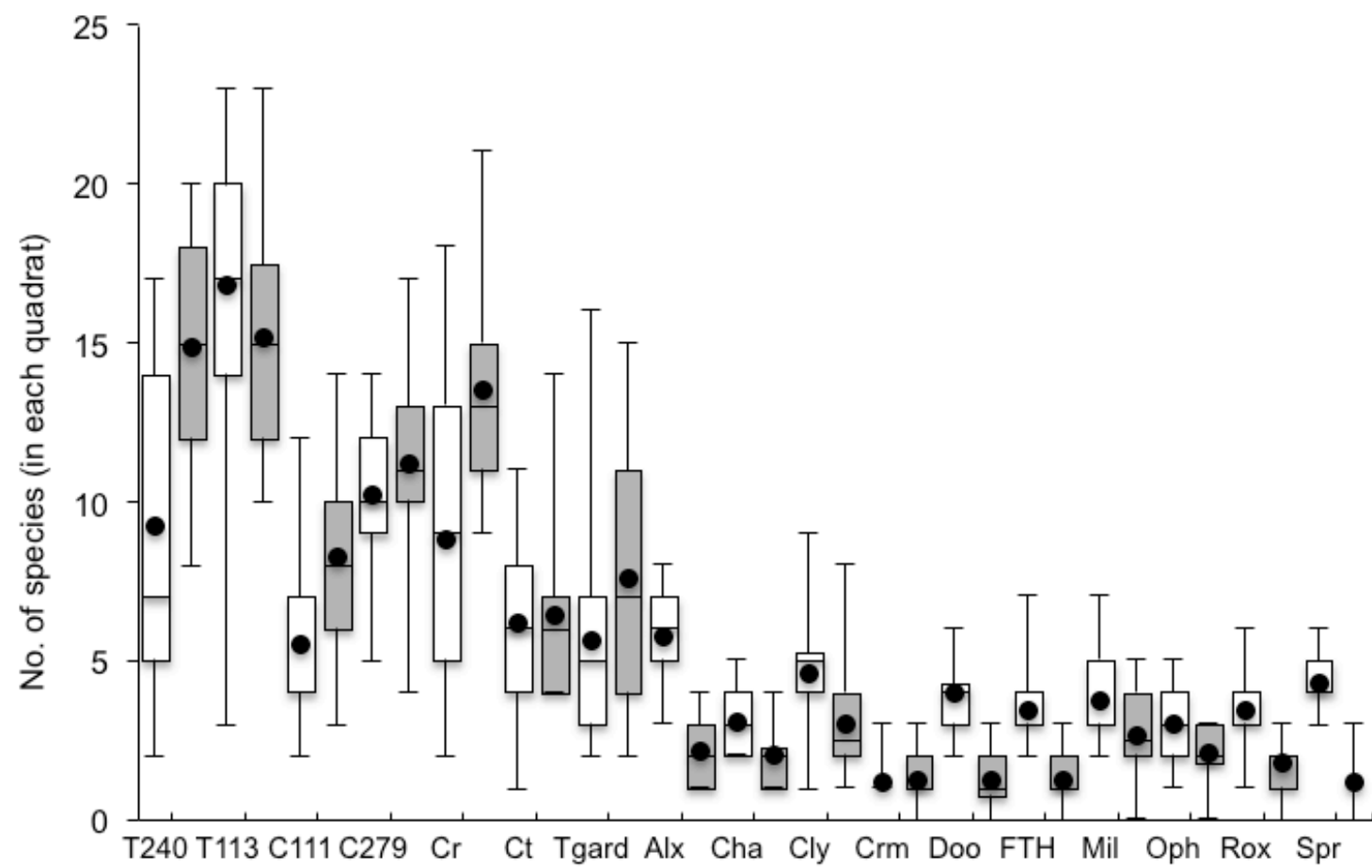


Table 1

Overall species richness across all sites in France and New Zealand

	France	New Zealand	% Difference
Total	248 (101)	63 (35)	-75 (-65)
With thyme	188 (98)	41 (29)	-78 (-70)
Outside thyme	203 (101)	57 (35)	-72 (-65)
Shared	139 (98)	29 (29)	-79 (-70)

Reduced data set in brackets

Table 3

Similarity of species composition inside and outside of thyme communities in France and New Zealand

	With thyme	Outside thyme	Combined
France (%)	18	13	15
New Zealand (%)	9	15	12
France–New Zealand (%)	0.1	1.1	0.6

response of different species was important

bio4enviro connection

invasion > simple surveys > global collaboration > differences

tools

team science
biogeographical contrasts
simple surveys
diversity measures

implications



understanding
the rules in a given
context
facilitates
better
environmental
management