

## Supporting Information

Not a melting pot: plant species aggregate in their non-native range

## Appendix S1 – Study sites

Table S1.1: Subset of Herbaceous Diversity Network sites used in this study. Grids are 8x8 m areas, each with 64 1-m<sup>2</sup> plots. Number of native species, number of alien species, percent of alien species, total aboveground biomass and litter biomass per plot were calculated per site.

Site ID	Country	N° of grids	Number of native species per plot (mean ± se)	Number of alien species per plot (mean ± se)	Percent of alien species per plot (mean ± se)	Total aboveground biomass per plot (g/m <sup>2</sup> ) (mean ± se)	Litter biomass per plot (g/m <sup>2</sup> ) (mean ± se)
1	Canada	6	10.1 ± 0.23	0.9 ± 0.06	13.3 ± 1.12	293.8 ± 8.1	82.4 ± 4.10
2	Canada	6	5.2 ± 0.20	1.7 ± 0.12	33.2 ± 2.32	473.7 ± 16.2	183.0 ± 7.51
3	Canada	14	4.8 ± 0.07	1.6 ± 0.04	26.2 ± 0.82	489.3 ± 15.4	176.8 ± 7.21
4	Canada	4	13 ± 0.19	0.2 ± 0.03	1.2 ± 0.17	280.7 ± 10.0	51.9 ± 2.42
5	USA	6	4.5 ± 0.09	2 ± 0.10	26.4 ± 1.18	337.1 ± 12.4	94.3 ± 4.67
6	Canada	2	1.1 ± 0.08	4.4 ± 0.08	83.0 ± 1.21	390.8 ± 7.5	150.8 ± 4.61
7	USA	6	1.7 ± 0.13	0.9 ± 0.03	67.2 ± 2.16	1592.7 ± 59.9	855.9 ± 35.66
8	Brazil	4	5.2 ± 0.22	0.04 ± 0.01	1.3 ± 0.46	472.1 ± 13.0	118.7 ± 5.25
9	Brazil	2	26.7 ± 0.53	0.9 ± 0.05	3.4 ± 0.21	215.8 ± 4.7	39.1 ± 1.36
10	Argentina	4	19.6 ± 0.49	0.3 ± 0.03	2.1 ± 0.25	959.3 ± 48.7	322.5 ± 18.83
11	Estonia	10	18.7 ± 0.32	0	0	479.0 ± 13.6	120.7 ± 6.08
12	UK	4	10.9 ± 0.13	0	0	568.4 ± 22.2	0
13	Germany	6	12.6 ± 0.42	0.8 ± 0.04	5.3 ± 0.29	416.7 ± 15.5	94.0 ± 7.49
14*	Mongolia	4	15.9 ± 0.24	0	0	NA	NA
15	Mongolia	6	14.1 ± 0.21	0	0	317.8 ± 5.7	87.5 ± 2.78
16	Austria	6	22.6 ± 0.37	0	0	324.9 ± 5.8	11.6 ± 0.64
17	Hungary	2	5.7 ± 0.16	0.1 ± 0.02	0.9 ± 0.33	112.4 ± 4.2	77.2 ± 3.93
18	Hungary	2	16.3 ± 0.26	1.2 ± 0.06	6.8 ± 0.36	605.2 ± 12.1	242.9 ± 8.44
19	Italy	6	19.9 ± 0.25	0	0	365.3 ± 6.2	33.5 ± 1.49
20	Iran	11	9.6 ± 0.12	2.4 ± 0.06	18.3 ± 0.42	431.0 ± 11.0	17.9 ± 0.50
21	Israel	6	16.4 ± 0.43	0	0	288.2 ± 8.6	14.9 ± 1.15
22	South Africa	6	7.8 ± 0.17	0.1 ± 0.02	3.3 ± 0.49	533.4 ± 16.7	71.2 ± 2.82

\* Litter biomass was not harvested at this site, and therefore a measure of total biomass was

unavailable.

## Appendix S2 – Study species

Table S2.2: List of the 46 species for which we have data at home (native range) and away (non-native range). Only the portion of the native and non-native range where each species was encountered is indicated. 26 species were considered invasive in the non-native range, while 23 species considered naturalized (non-invasive) in the non-native range. Note that some species may be considered invasive in some non-native range, while not in others.

References (Ref.) are provided for the classification of species as native or alien, and of alien species into naturalized or invasive. Sample size (n, number of plots) is provided for the native range, followed by the non-native range.

Species	Native range	Non-native range	Invasive status	Ref.	n	Family	Growth Form
<i>Agropyron cristatum</i>	Mongolia	AB Canada BC, Canada	Naturalized	1, 2	83, 28	Poaceae	Grass
<i>Agrostis capillaris</i>	Germany Austria UK Estonia	OH, USA	Naturalized	3-6	319, 3	Poaceae	Grass
<i>Agrostis gigantea</i>	Mongolia	BC, Canada	Naturalized	2, 7	3, 34	Poaceae	Grass
<i>Agrostis stolonifera</i>	Austria Estonia	BC, Canada	Naturalized	2-5, 7	80, 26	Poaceae	Grass
<i>Alyssum simplex</i>	Italy	Iran	Invasive	8-11	45, 1	Brassicaceae	Forb
<i>Anagallis arvensis</i>	Israel	Iran	Invasive	8, 9, 12	82, 124	Primulaceae	Forb
<i>Arrhenatherum elatius</i>	Hungary Germany Austria Italy Estonia	ON, Canada	Naturalized	2, 3, 5, 10, 11, 13, 14	330, 88	Poaceae	Grass
<i>Astragalus cicer</i>	Hungary	AB, Canada	Naturalized	2, 14, 15	47, 5	Fabaceae	Forb
<i>Axyris amaranthoides</i>	Mongolia	AB, Canada	Naturalized	2	15, 62	Amaranthaceae	Forb
<i>Bromus inermis</i>	Mongolia	AB, Canada ON, Canada MT, USA	Invasive	1, 2, 7, 16, 17	172, 408	Poaceae	Grass
<i>Bromus squarrosus</i>	Hungary	BC, Canada	Naturalized	2, 14	23, 78	Poaceae	Grass
<i>Bromus tectorum</i>	Iran	BC, Canada OH, USA MT, USA	Invasive	2, 6, 8, 9, 17	65, 164	Poaceae	Grass

<i>Buglossoides arvensis</i>	Hungary Italy	Iran	Invasive	8-11, 14	43, 58	Boraginaceae	Forb
<i>Capsella bursapastoris</i>	Germany Israel	Iran	Invasive	3, 4, 8, 9, 12	25, 125	Brassicaceae	Forb
<i>Carex stenophylla</i>	AB, Canada	Iran	Invasive	2, 8, 9	289, 176	Cyperaceae	Sedge
<i>Cirsium arvense</i>	Italy	AB, Canada Iran OH, USA	Invasive	2, 8- 11, 18- 20	59, 58	Asteraceae	Forb
<i>Convolvulus arvensis</i>	Hungary Germany Italy	MT, USA	Invasive	2-4, 10, 11, 14, 17	178, 21	Convolvulaceae	Forb
<i>Cynodon dactylon</i>	Israel South Africa	Hungary Argentina Brazil	Invasive	21-23	58, 95	Poaceae	Grass
<i>Daucus carota</i>	Germany Israel	ON, Canada	Naturalized	2-4, 12, 13	65, 36	Apiaceae	Forb
<i>Elymus repens</i>	Germany Italy Estonia	AB, Canada BC, Canada	Invasive	2-5, 10, 11, 14, 24, 25	288, 286	Poaceae	Grass
<i>Erigeron canadensis</i>	MT, USA	South Africa	Naturalized	2, 26	7, 39	Asteraceae	Forb
<i>Erigeron primulifolium</i>	Brazil	South Africa	Naturalized	26, 27	5, 2	Asteraceae	Forb
<i>Festuca pratensis</i>	Germany Austria UK Estonia	ON, Canada	Naturalized	2-5	204, 6	Poaceae	Grass
<i>Galium album</i>	Germany Estonia	ON, Canada	Naturalized	2-5, 13	278, 6	Rubiaceae	Forb
<i>Lepidium ruderale</i>	Mongolia	Iran	Invasive	7-9	1, 5	Brassicaceae	Forb
<i>Linaria genistifolia</i>	Hungary	BC, Canada	Invasive	2, 14	3, 49	Plantaginaceae	Forb
<i>Lolium perenne</i>	Germany UK Italy	ON, Canada Iran	Invasive	2-4, 8- 11	307, 188	Poaceae	Grass
<i>Lotus corniculatus</i>	Hungary Germany Austria UK Italy Estonia	OH, USA	Invasive	3-5, 10, 11, 13, 14, 28	299, 4	Fabaceae	Forb
<i>Lysimachia nummularia</i>	Estonia	OH, USA	Invasive	5, 28, 29	13, 14	Primulaceae	Forb
<i>Malva parviflora</i>	Israel	Iran	Invasive	8, 9, 12	5, 9	Malvaceae	Forb

<i>Medicago lupulina</i>	Iran Italy Estonia	BC, Canada MT, USA	Invasive (Canada) Naturalized (US)	2, 5, 8- 11, 17	259, 129	Fabaceae	Forb
<i>Medicago minima</i>	Hungary	Iran	Invasive	8, 9, 14	11, 17	Fabaceae	Forb
<i>Medicago polymorpha</i>	Israel	Iran	Invasive	8, 9, 12	40, 5	Fabaceae	Forb
<i>Phleum pratense</i>	Germany Italy Estonia	BC, Canada	Naturalized	2-5, 10, 11	223, 58	Poaceae	Grass
<i>Plantago lanceolata</i>	Hungary UK Italy Estonia	Germany ON, Canada Iran	Naturalized (Germany, Canada) Invasive (Iran)	2-5, 8- 11, 14	452, 454	Plantaginaceae	Forb
<i>Plantago ovata</i>	Israel	Iran	Invasive	8, 9, 12	4, 3	Plantaginaceae	Forb
<i>Poa bulbosa</i>	Hungary Israel Italy	Iran	Invasive	8-12, 14	103, 171	Poaceae	Grass
<i>Polygonum aviculare</i>	Mongolia	MT, USA	Invasive	2, 7, 17, 24	2, 1	Polygonaceae	Forb
<i>Rhamnus cathartica</i>	Estonia	ON, Canada OH, USA	Invasive	2, 5, 28, 30	25, 3	Rhamnaceae	Shrub
<i>Rumex acetosella</i>	Germany	BC, Canada	Naturalized	2-4, 13, 31	32, 2	Polygonaceae	Forb
<i>Securigera varia</i>	Hungary	ON, Canada	Naturalized	2, 14	30, 127	Fabaceae	Forb
<i>Tagetes minuta</i>	Argentina	South Africa	Naturalized	21, 26	84, 5	Asteraceae	Forb
<i>Taraxacum campyloides</i>	Germany Mongolia Austria Italy Estonia	AB, Canada BC, Canada MT, USA Argentina	Naturalized (Canada) Invasive (Argentina, USA)	2-5, 10, 11, 21, 24, 31, 32	293, 675	Asteraceae	Forb
<i>Trifolium pratense</i>	Germany Austria Iran UK Italy Estonia	BC, Canada	Naturalized	2-5, 8- 11	637, 50	Fabaceae	Forb
<i>Veronica officinalis</i>	Estonia	ON, Canada	Naturalized	2, 5	22, 1	Plantaginaceae	Forb
<i>Vicia sativa</i>	Italy	Hungary	Naturalized	3, 4, 10, 11, 14	11, 6	Fabaceae	Forb

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### Appendix S3 – All species vs. Eurasian species

Table S3.3: Differences at home vs. away for the 42 Eurasian species and for all 46 species. General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied.

SE = standard error

Biogeogr. Origin	Resp. variable	Coefficient $\pm$ SE	p-value
Eurasian (42 spp)	Total biomass	-0.11 $\pm$ 0.03	< 0.001
	Total species richness	0.63 $\pm$ 0.05	< 0.001
	Native species richness	1.03 $\pm$ 0.07	< 0.001
	Alien species richness	-3.73 $\pm$ 0.29	< 0.001
All 46 species	Total biomass	-0.11 $\pm$ 0.03	< 0.001
	Total species richness	0.61 $\pm$ 0.05	< 0.001
	Native species richness	0.98 $\pm$ 0.07	< 0.001
	Exotic species richness	-3.34 $\pm$ 0.27	< 0.001

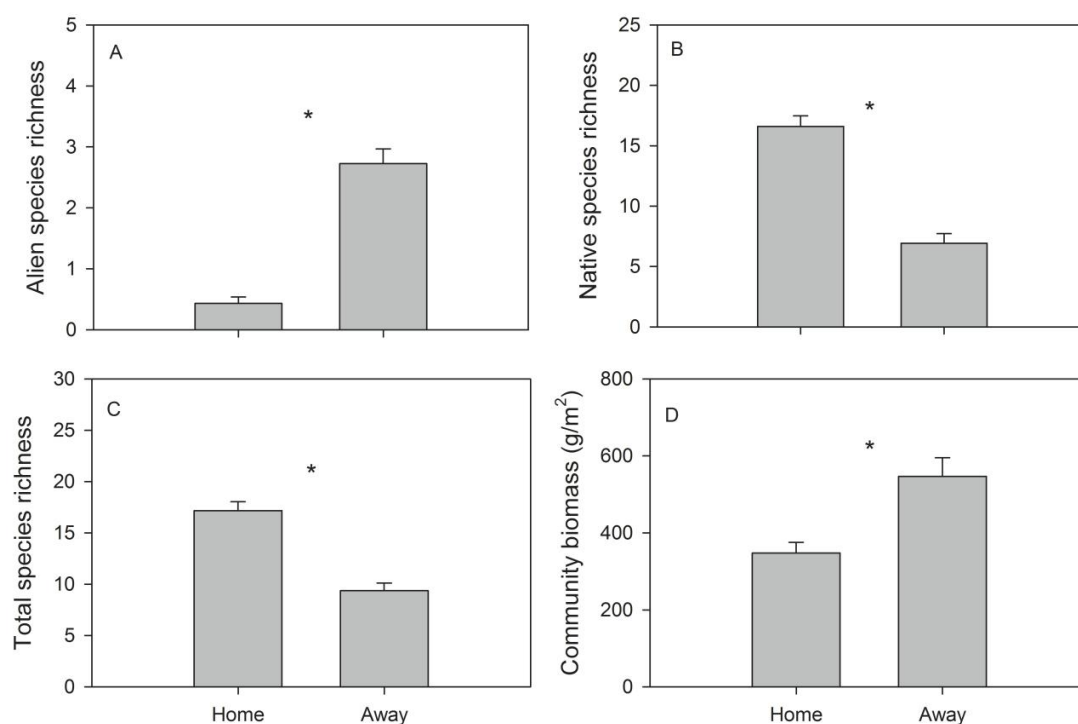


Figure S3.1: Characteristics of the communities (plots) in which the 42 Eurasian species are found in their native (home) and non-native (away) range. (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Bars indicate mean  $\pm$  se. Means per treatment were calculated by averaging species' means. See Appendix S2 for details on sample size for each of the 46 species included and Table S3.3 for statistical outputs. \* indicates significant differences among treatments ( $P < 0.05$ ).

## Appendix S4 – Species introduced to North America vs. elsewhere

Table S4.4: Differences at home vs. away for species introduced to North America and elsewhere.

General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied. SE = standard error.

Introd. biogeogr range	Resp. variable	Coefficient $\pm$ SE	p-value
North America (30 spp)	Total biomass	-0.09 $\pm$ 0.03	0.0085
	Total species richness	0.91 $\pm$ 0.05	< 0.001
	Native species richness	1.41 $\pm$ 0.07	< 0.001
	Alien species richness	-3.802 $\pm$ 0.34	< 0.001
Other (20 spp)	Total biomass	-0.16 $\pm$ 0.05	0.001
	Total species richness	0.26 $\pm$ 0.08	< 0.001
	Native species richness	0.37 $\pm$ 0.08	< 0.001
	Alien species richness	-3.57 $\pm$ 0.49	< 0.001

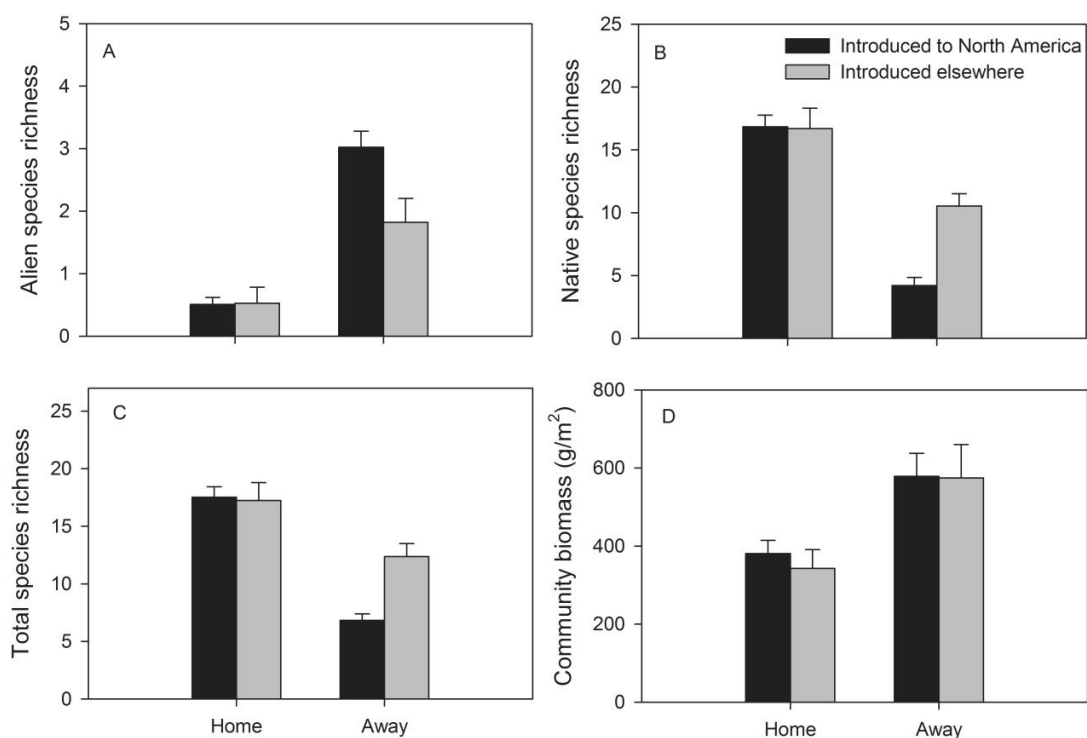


Figure S4.2: Characteristics of the communities in which species are found in their native (home) and non-native (away) range, for species introduced to North America and elsewhere. (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Means per treatment were calculated by averaging species' means. Bars indicate mean  $\pm$  se. See Table S4.4 for details in sample size and statistical outputs.

## Appendix S5 – Species' life cycles

Table S5.5: Differences at home vs. away across life cycles. General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied. SE = standard error.

Life cycle	Resp. variable	Coefficient $\pm$ SE	p-value
Short lived (15 spp)	Total biomass	-0.19 $\pm$ 0.07	0.007
	Total species richness	0.38 $\pm$ 0.12	0.001
	Native species richness	0.60 $\pm$ 0.15	< 0.001
	Alien species richness	-2.52 $\pm$ 0.07	< 0.001
Longed lived (26 spp)	Total biomass	-0.09 $\pm$ 0.03	0.009
	Total species richness	0.67 $\pm$ 0.05	< 0.001
	Native species richness	1.07 $\pm$ 0.08	< 0.001
	Alien species richness	-3.57 $\pm$ 0.03	< 0.001

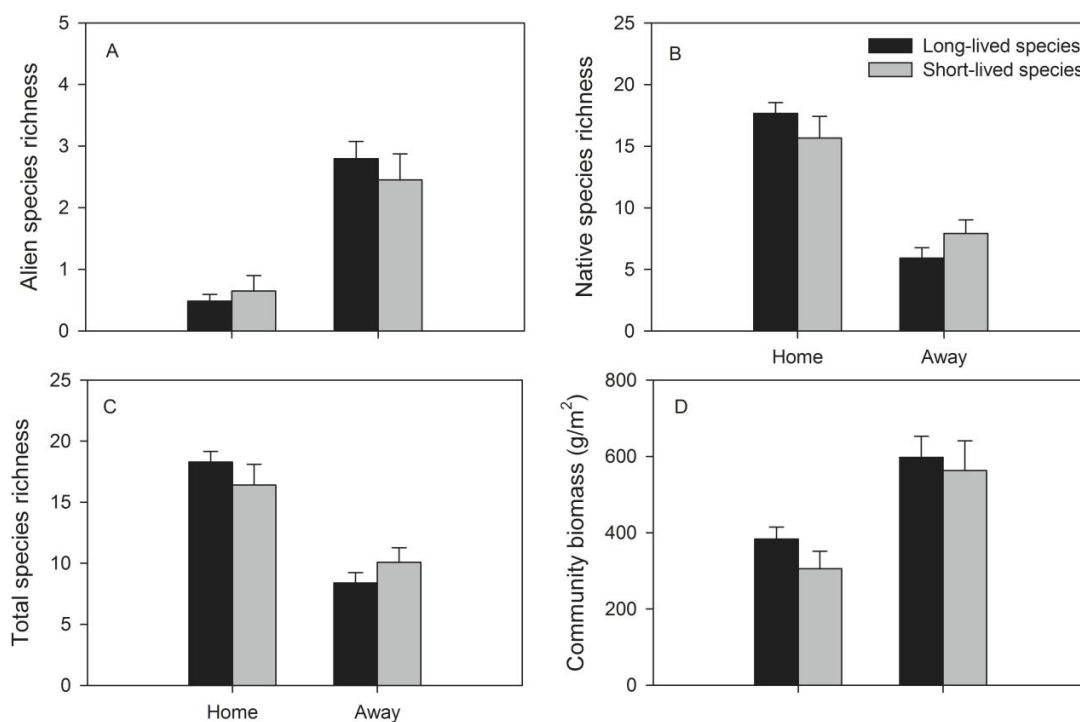


Figure S5.3: Characteristics of the communities in which species are found in their native (home) and non-native (away) range, depending on life cycle. (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Means per treatment were calculated by averaging species' means. Bars indicate mean  $\pm$  se. See Table S5.5 for details in sample size and statistical outputs.

## Appendix S6 – Species' growth forms

Table S6.6: Differences at home vs. away across growth forms. General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied. SE = standard error.

Growth forms	Resp. variable	Coefficient $\pm$ SE	p-value
Grasses (14 spp)	Total biomass	-0.12 $\pm$ 0.05	0.02
	Total species richness	0.61 $\pm$ 0.08	< 0.001
	Native species richness	1.06 $\pm$ 0.12	< 0.001
	Alien species richness	-3.21 $\pm$ 0.43	< 0.001
Forbs (30 spp)	Total biomass	-0.11 $\pm$ 0.04	0.005
	Total species richness	0.72 $\pm$ 0.06	< 0.001
	Native species richness	1.02 $\pm$ 0.08	< 0.001
	Alien species richness	-3.49 $\pm$ 0.35	< 0.001

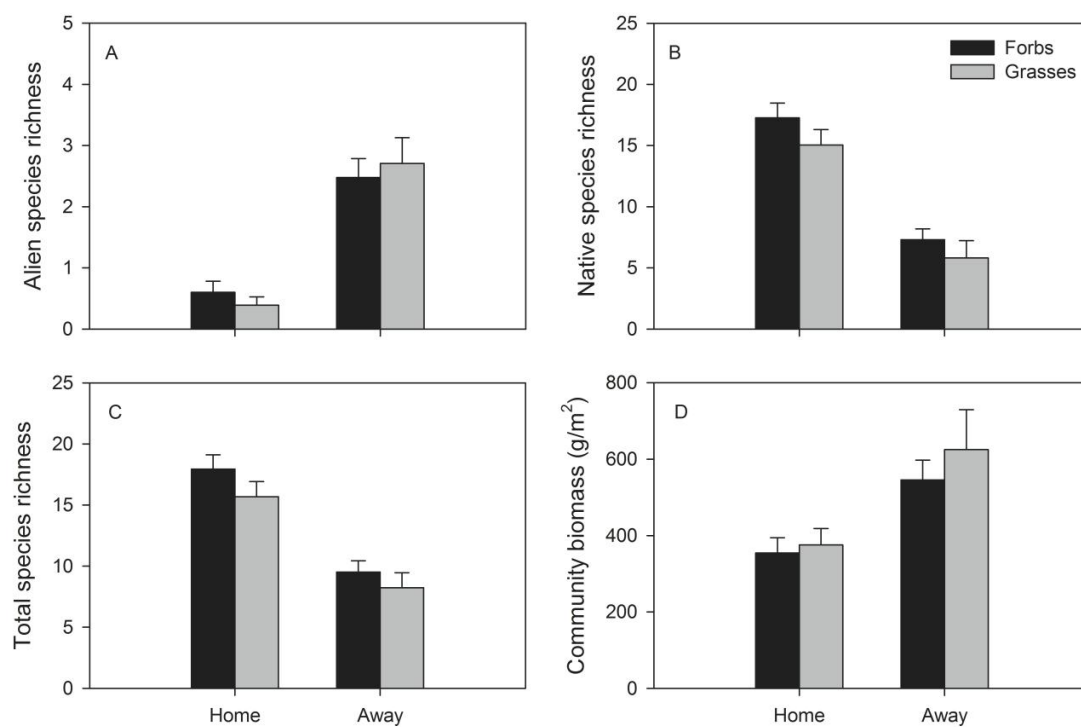


Figure S6.4: Characteristics of the communities in which species are found in their native (home) and non-native (away) range, depending on growth form (forbs, grasses). (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Means per treatment were calculated by averaging species' means. Bars indicate mean  $\pm$  se. See Table S6.6 for details in sample size and statistical outputs.

## Appendix S7 – European vs. non-European species

Table S7.7: Differences at home vs. away for European and non-European species. General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied.

SE = standard error

Biogeogr. Origin	Resp. variable	Coefficient $\pm$ SE	p-value
European (29 spp)	Total biomass	-0.09 $\pm$ 0.04	0.02
	Total species richness	0.71 $\pm$ 0.05	< 0.001
	Native species richness	1.08 $\pm$ 0.07	< 0.001
	Alien species richness	-3.51 $\pm$ 0.31	< 0.001
Non-European (23 spp)	Total biomass	-0.17 $\pm$ 0.05	0.002
	Total species richness	0.53 $\pm$ 0.07	< 0.001
	Native species richness	0.53 $\pm$ 0.07	< 0.001
	Alien species richness	-2.61 $\pm$ 0.33	< 0.001

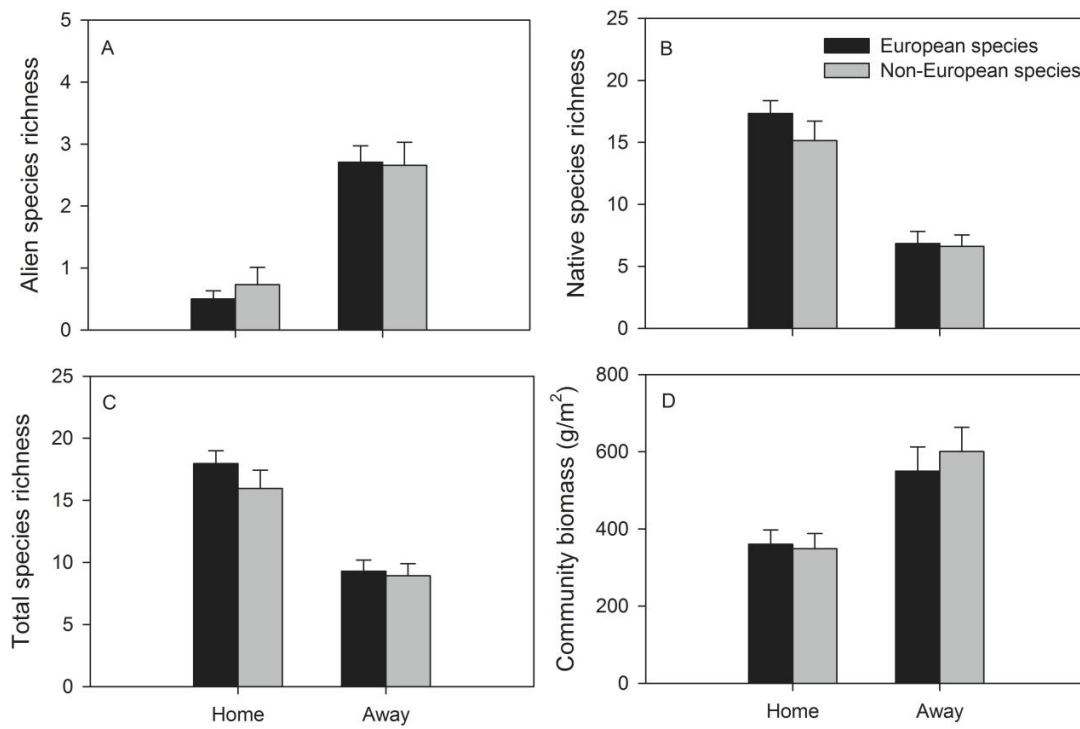


Figure S7.5: Characteristics of the communities in which species are found in their native (home) and non-native (away) range, for European and non-European species. (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Means per treatment were calculated by averaging species' means. Bars indicate mean  $\pm$  se. See Table S7.7 for details in sample size and statistical outputs.

## Appendix S8 – Species-specific differences at home vs. away

Table S8.8: Species-specific differences in characteristics of the communities occupied at home vs. away. Linear model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the areas occupied. SE = standard error.

Species	Response variables	Coefficient ± SE	P-value
<i>Agropyron cristatum</i>	Total biomass	-0.45 ± 0.04	< 0.001
	Total species richness	1.03 ± 0.08	< 0.001
	Native species richness	2.17 ± 0.14	< 0.001
	Alien species richness	-2.09 ± 0.16	< 0.001
<i>Agrostis capillaris</i>	Total biomass	-0.47 ± 0.13	< 0.001
	Total species richness	3.06 ± 0.95	0.001
	Native species richness	17.3 ± 728	0.981
	Alien species richness	-2.44 ± 0.58	0.675
<i>Agrostis gigantea</i>	Total biomass		
	Total species richness	0.49 ± 0.17	0.004
	Native species richness	0.87 ± 0.18	< 0.001
	Alien species richness	-18.18 ± 2002	0.993
<i>Agrostis stolonifera</i>	Total biomass	-0.05 ± 0.03	0.126
	Total species richness	-0.43 ± 0.87	0.619
	Native species richness	0.1 ± 0.05	0.060
	Alien species richness	0.05 ± 0.06	0.384
<i>Alyssum simplex</i>	Total biomass	-0.64 ± 0.10	< 0.001
	Total species richness	0.20 ± 0.24	0.42
	Native species richness	0.32 ± 0.26	0.215
	Alien species richness	-26.99 ± 46535	1.00
<i>Anagallis arvensis</i>	Total biomass	-0.79 ± 0.03	< 0.001
	Total species richness	0.70 ± 0.03	< 0.001
	Native species richness	0.85 ± 0.04	< 0.001
	Alien species richness	-.20.94 ± 1716	0.99
<i>Arrhenatherum elatius</i>	Total biomass	-0.04 ± 0.02	0.05
	Total species richness	1.55 ± 0.07	< 0.001
	Native species richness	3.03 ± 1.65	< 0.001
	Alien species richness	-1.11 ± 0.08	< 0.001
<i>Astragalus cicer</i>	Total biomass	0.08 ± 0.05	0.111
	Total species richness	0.87 ± 0.17	< 0.001
	Native species richness	0.87 ± 0.18	< 0.001
	Alien species richness	0.56 ± 0.51	0.275
<i>Axyris amaranthoides</i>	Total biomass	-0.20 ± 0.07	0.004

	Total species richness	0.79 ± 0.09	< 0.001
	Native species richness	1.57 ± 0.19	< 0.001
	Alien species richness	-3.03 ± 0.58	< 0.001
<i>Bromus inermis</i>	Total biomass	-0.12 ± 0.02	< 0.001
	Total species richness	0.67 ± 0.04	< 0.001
	Native species richness	1.16 ± 0.06	< 0.001
	Alien species richness	-5.70 ± 0.71	< 0.001
<i>Bromus squarrosus</i>	Total biomass	-0.12 ± 0.04	0.003
	Total species richness	-0.07 ± 0.09	0.386
	Native species richness	-0.04 ± 0.09	0.642
	Alien species richness	-3.44 ± 1.00	< 0.001
<i>Bromus tectorum</i>	Total biomass	0.16 ± 0.03	< 0.001
	Total species richness	0.04 ± 0.06	0.452
	Native species richness	0.22 ± 0.06	< 0.001
	Alien species richness	-0.44 ± 0.11	< 0.001
<i>Buglossoides arvensis</i>	Total biomass	-0.42 ± 0.05	< 0.001
	Total species richness	-0.41 ± 0.10	< 0.001
	Native species richness	-0.14 ± 0.11	0.185
	Alien species richness	-3.84 ± 0.50	< 0.001
<i>Capsella bursapastoris</i>	Total biomass	-0.06 ± 0.06	0.316
	Total species richness	0.26 ± 0.05	< 0.001
	Native species richness	0.43 ± 0.05	< 0.001
	Alien species richness	-0.23 ± 0.13	0.06
<i>Carex stenophylla</i>	Total biomass	-0.13 ± 0.02	< 0.001
	Total species richness	-0.33 ± 0.03	< 0.001
	Native species richness	-0.16 ± 0.03	< 0.001
	Alien species richness	-0.39 ± 0.06	< 0.001
<i>Cirsium arvense</i>	Total biomass	0.15 ± 0.03	< 0.001
	Total species richness	1.12 ± 0.05	< 0.001
	Native species richness	1.38 ± 0.06	< 0.001
	Alien species richness	-21.2 ± 2023	0.992
<i>Convolvulus arvensis</i>	Total biomass	-0.12 ± 0.04	0.006
	Total species richness	1.40 ± 0.10	< 0.001
	Native species richness	1.84 ± 0.14	< 0.001
	Alien species richness	-1.02 ± 0.16	< 0.001
<i>Cynodon dactylon</i>	Total biomass	-0.13 ± 0.03	< 0.001
	Total species richness	-0.29 ± 0.05	< 0.001
	Native species richness	-0.31 ± 0.05	< 0.001
	Alien species richness	-2.39 ± 0.59	< 0.001
<i>Daucus carota</i>	Total biomass	-0.74 ± 0.07	< 0.001
	Total species richness	1.52 ± 0.07	< 0.001
	Native species richness	2.75 ± 0.13	< 0.001
	Alien species richness	-1.70 ± 0.16	< 0.001
<i>Elymus repens</i>	Total biomass	-0.36 ± 0.02	< 0.001
	Total species richness	0.90 ± 0.04	< 0.001
	Native species richness	1.51 ± 0.05	< 0.001
	Alien species richness	-1.93 ± 0.1	< 0.001

<i>Erigeron canadensis</i>	Total biomass	-0.57 ± 0.03	< 0.001
	Total species richness	0.93 ± 0.15	< 0.001
	Native species richness	0.36 ± 0.18	0.045
	Alien species richness	4.02 ± 0.61	< 0.001
<i>Erigeron primulifolium</i>	Total biomass	-0.59 ± 0.08	< 0.001
	Total species richness	1.96 ± 0.34	< 0.001
	Native species richness	2.06 ± 0.36	< 0.001
	Alien species richness	0.18 ± 1.15	0.875
<i>Festuca pratensis</i>	Total biomass	0.07 ± 0.10	0.487
	Total species richness	1.17 ± 0.30	< 0.001
	Native species richness	2.31 ± 0.58	< 0.001
	Alien species richness	-2.43 ± 0.28	< 0.001
<i>Galium album</i>	Total biomass	-0.05 ± 0.08	0.524
	Total species richness	1.16 ± 0.22	< 0.001
	Native species richness	2.72 ± 0.47	< 0.001
	Alien species richness	-4.09 ± 0.27	< 0.001
<i>Lepidium ruderale</i>	Total biomass	0.04 ± 0.16	0.835
	Total species richness	-0.83 ± 0.52	0.11
	Native species richness	-0.81 ± 0.52	0.12
	Alien species richness	-17.69 ± 9426	0.999
<i>Linaria genistifolia</i>	Total biomass	-0.50 ± 0.06	< 0.001
	Total species richness	-0.05 ± 0.19	0.781
	Native species richness	0.25 ± 0.20	0.219
	Alien species richness	-20.34 ± 5442	0.997
<i>Lolium perenne</i>	Total biomass	0.20 ± 0.02	< 0.001
	Total species richness	0.61 ± 0.05	< 0.001
	Native species richness	0.91 ± 0.06	< 0.001
	Alien species richness	-4.56 ± 0.38	< 0.001
<i>Lotus corniculatus</i>	Total biomass	-0.47 ± 0.17	0.006
	Total species richness	1.15 ± 0.34	< 0.001
	Native species richness	1.24 ± 0.34	< 0.001
	Alien species richness	-0.68 ± 0.51	0.177
<i>Lysimachia nummularia</i>	Total biomass	0.15 ± 0.03	< 0.001
	Total species richness	0.52 ± 0.13	< 0.001
	Native species richness	0.59 ± 0.14	< 0.001
	Alien species richness	-21.55 ± 7106	0.998
<i>Malva parviflora</i>	Total biomass	-0.10 ± 0.09	0.315
	Total species richness	-0.05 ± 0.13	0.701
	Native species richness	0.34 ± 0.14	0.016
	Alien species richness	-24.15 ± 18893	0.999
<i>Medicago lupulina</i>	Total biomass	-0.16 ± 0.02	< 0.001
	Total species richness	1.11 ± 0.05	< 0.001
	Native species richness	1.39 ± 0.06	< 0.001
	Alien species richness	-0.68 ± 0.10	< 0.001
<i>Medicago minima</i>	Total biomass	-0.23 ± 0.06	< 0.001
	Total species richness	-0.53 ± 0.13	< 0.001
	Native species richness	-0.41 ± 0.15	0.005

	Alien species richness	-3.52 ± 1.01	< 0.001
<i>Medicago polymorpha</i>	Total biomass	0.01 ± 0.08	0.92
	Total species richness	0.27 ± 0.16	0.08
	Native species richness	0.26 ± 0.16	0.10
	Alien species richness	0.00 ± 0.48	1
<i>Phleum pratense</i>	Total biomass	-0.43 ± 0.03	< 0.001
	Total species richness	1.04 ± 0.08	< 0.001
	Native species richness	1.74 ± 0.11	< 0.001
	Alien species richness	-3.51 ± 0.24	< 0.001
<i>Plantago lanceolata</i>	Total biomass	0.03 ± 0.01	0.008
	Total species richness	0.27 ± 0.02	< 0.001
	Native species richness	0.35 ± 0.02	< 0.001
	Alien species richness	-4.65 ± 0.31	< 0.001
<i>Plantago ovata</i>	Total biomass	-0.32 ± 0.20	0.159
	Total species richness	0.30 ± 0.21	0.155
	Native species richness	0.56 ± 0.23	0.015
	Alien species richness	-22.51 ± 12812	0.999
<i>Poa bulbosa</i>	Total biomass	-0.43 ± 0.03	< 0.001
	Total species richness	0.51 ± 0.06	< 0.001
	Native species richness	0.77 ± 0.06	< 0.001
	Alien species richness	-5.72 ± 1.00	< 0.001
<i>Polygonum aviculare</i>	Total biomass		
	Total species richness	0.91 ± 0.49	0.061
	Native species richness	1.39 ± 0.61	0.024
	Alien species richness	-24.40 ± 49252	0.999
<i>Rhamnus cathartica</i>	Total biomass	-0.29 ± 0.04	< 0.001
	Total species richness	1.68 ± 0.28	< 0.001
	Native species richness	2.63 ± 0.45	< 0.001
	Alien species richness	-24.40 ± 13939	0.998
<i>Rumex acetosella</i>	Total biomass	-0.26 ± 0.16	0.124
	Total species richness	0.11 ± 0.18	0.54
	Native species richness	0.17 ± 0.19	0.377
	Alien species richness	0.82 ± 0.72	0.25
<i>Securigera varia</i>	Total biomass	0.11 ± 0.02	< 0.001
	Total species richness	1.42 ± 0.06	< 0.001
	Native species richness	2.78 ± 0.10	< 0.001
	Alien species richness	-1.22 ± 0.19	< 0.001
<i>Tagetes minuta</i>	Total biomass	-0.12 ± 0.15	0.422
	Total species richness	1.73 ± 0.37	< 0.001
	Native species richness	1.69 ± 0.40	< 0.001
	Alien species richness	16.2 ± 1551	0.992
<i>Taraxacum campylodes</i>	Total biomass	-0.06 ± 0.02	< 0.001
	Total species richness	0.88 ± 0.02	< 0.001
	Native species richness	1.24 ± 0.03	< 0.001
	Alien species richness	-1.93 ± 0.07	< 0.001
<i>Trifolium pratense</i>	Total biomass	-0.65 ± 0.03	< 0.001
	Total species richness	1.12 ± 0.09	< 0.001

	Native species richness	1.81 ± 0.13	< 0.001
	Alien species richness	-2.10 ± 0.10	< 0.001
<i>Veronica officinalis</i>	Total biomass	-0.07 ± 0.08	0.338
	Total species richness	1.48 ± 0.41	< 0.001
	Native species richness	2.57 ± 0.71	< 0.001
	Alien species richness	-26.69 ± 40367	0.999
<i>Vicia sativa</i>	Total biomass	0.04 ± 0.04	0.426
	Total species richness	0.14 ± 0.11	0.194
	Native species richness	0.18 ± 0.11	0.10
	Alien species richness	-20.61 ± 7725	0.998

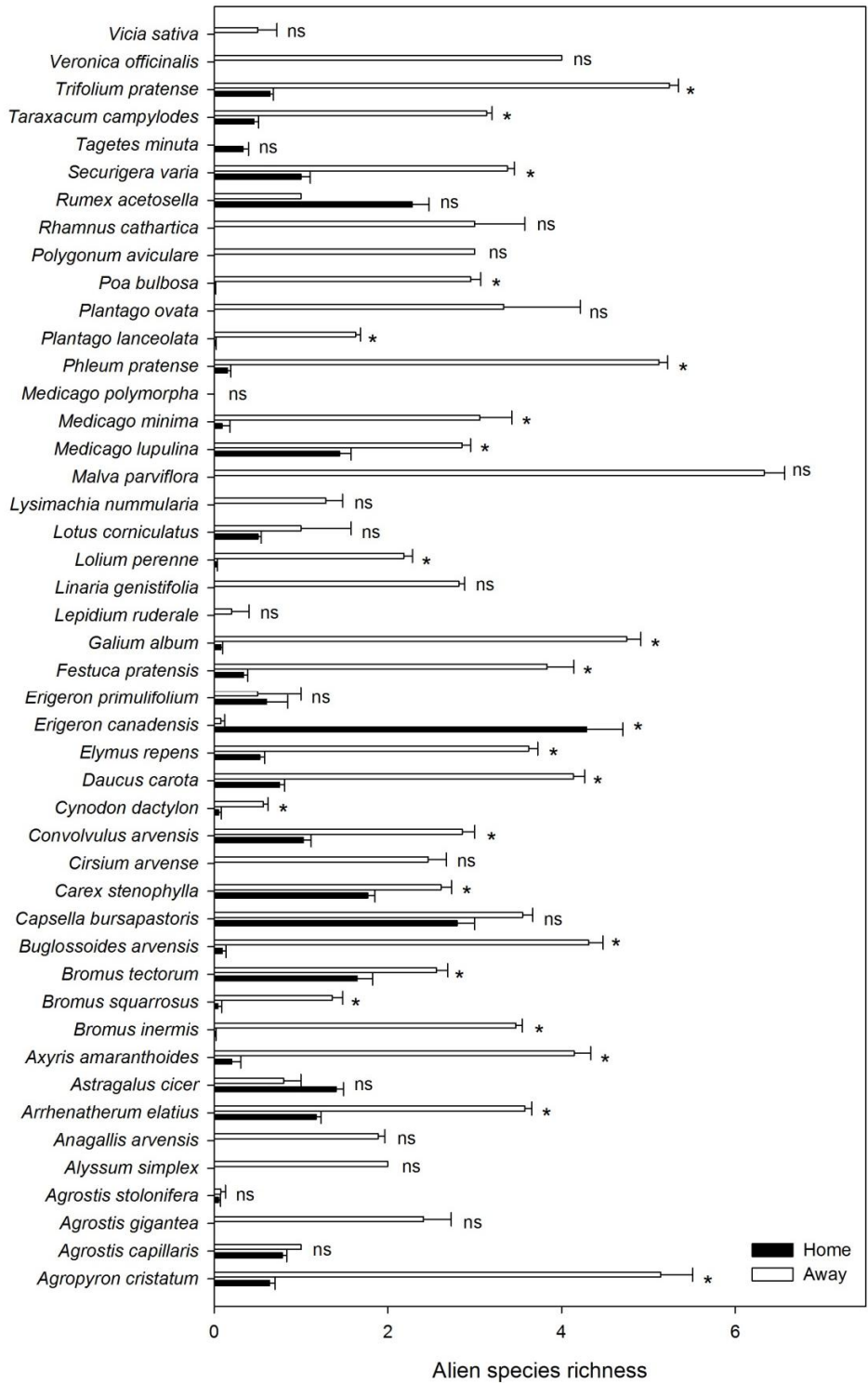


Figure S8.6: Species-specific differences in alien species richness at home vs. away. Bars indicate mean  $\pm$  se. \* indicates significant differences ( $P < 0.05$ ).

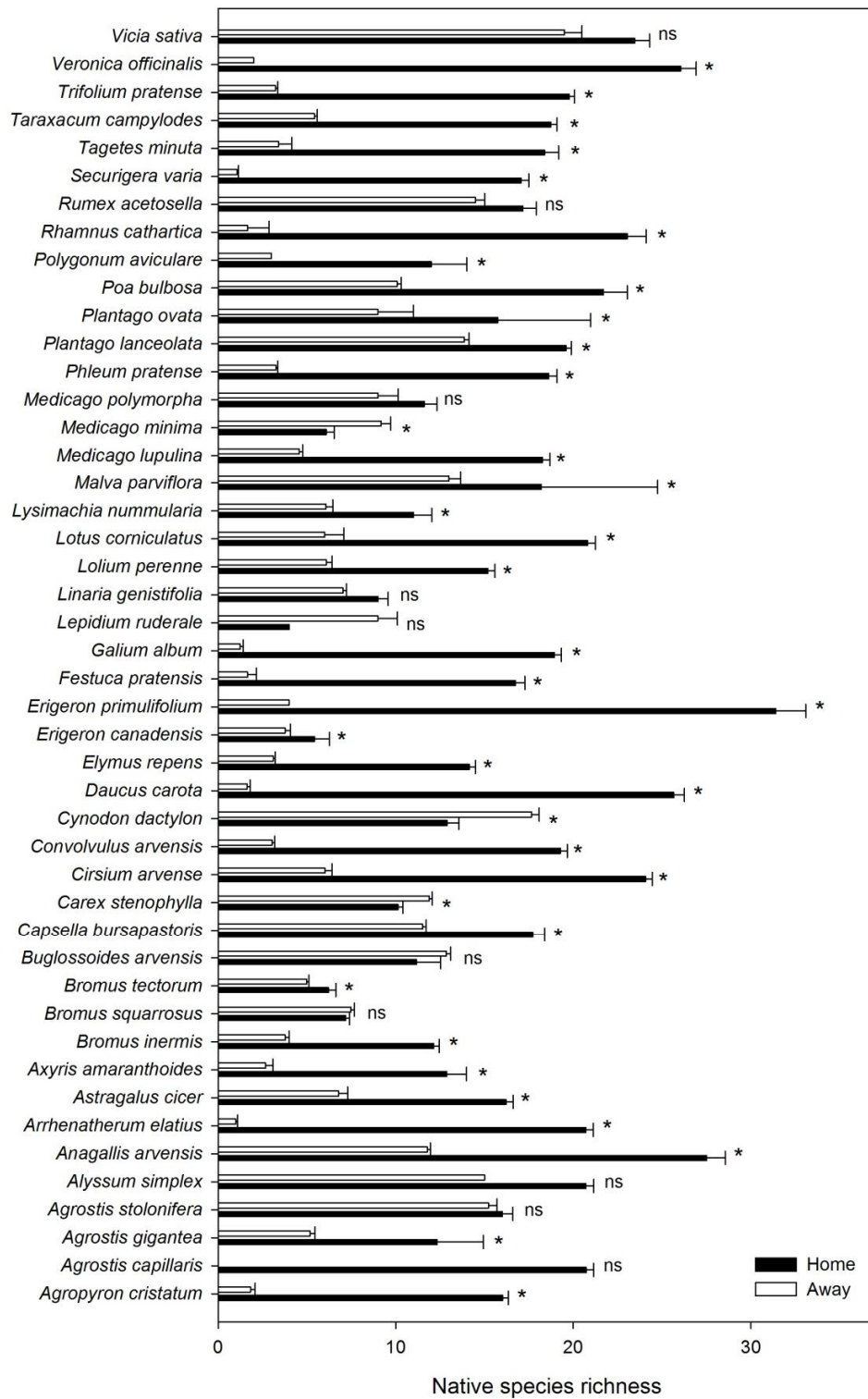


Figure S8.7: Species-specific differences in native species richness at home vs. away. Bars indicate mean  $\pm$  se. \* indicates significant differences ( $P < 0.05$ ).

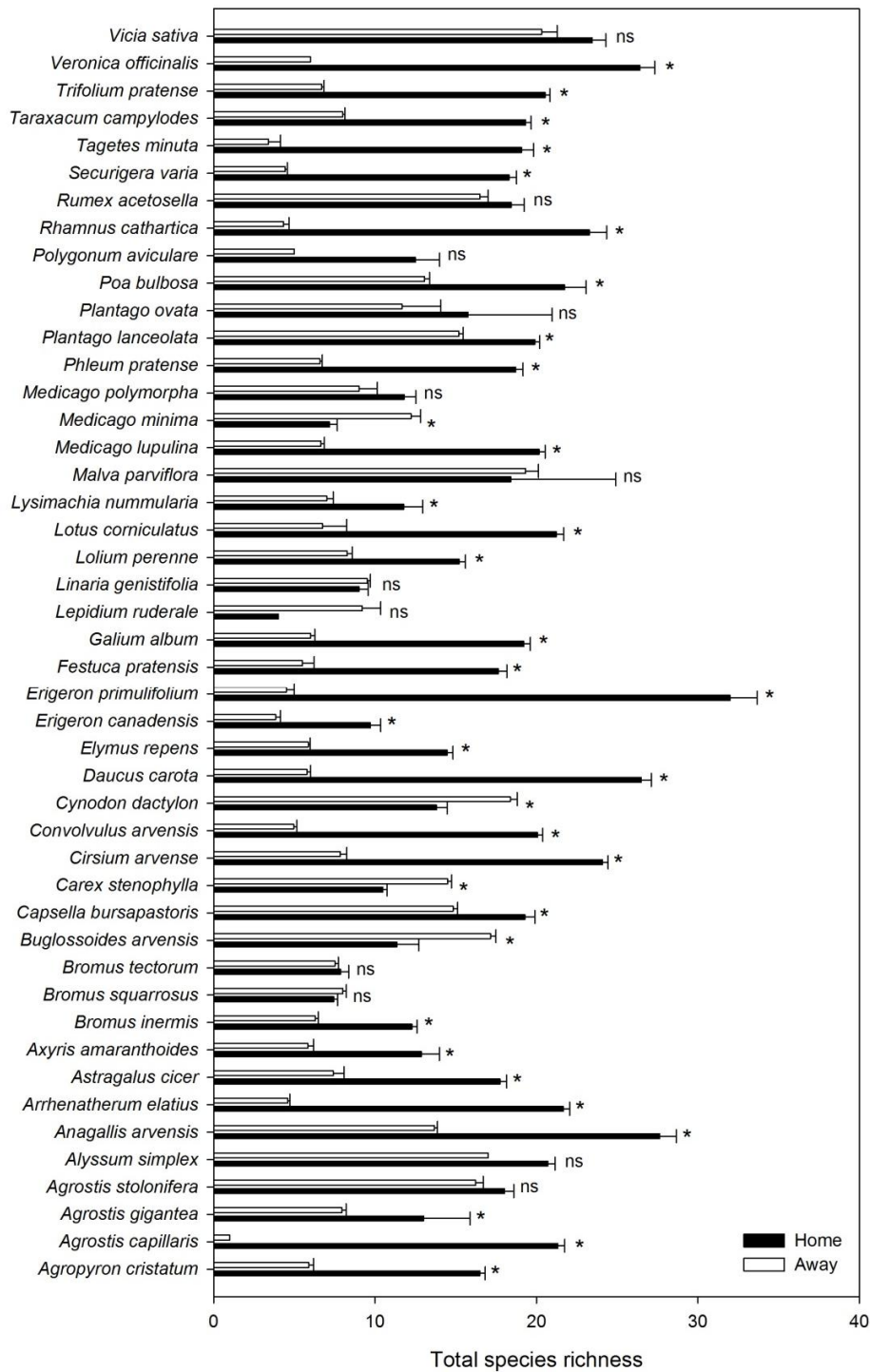


Figure S8.8: Species-specific differences in total species richness at home vs. away. Bars indicate mean  $\pm$  se. \* indicates significant differences ( $P < 0.05$ ).

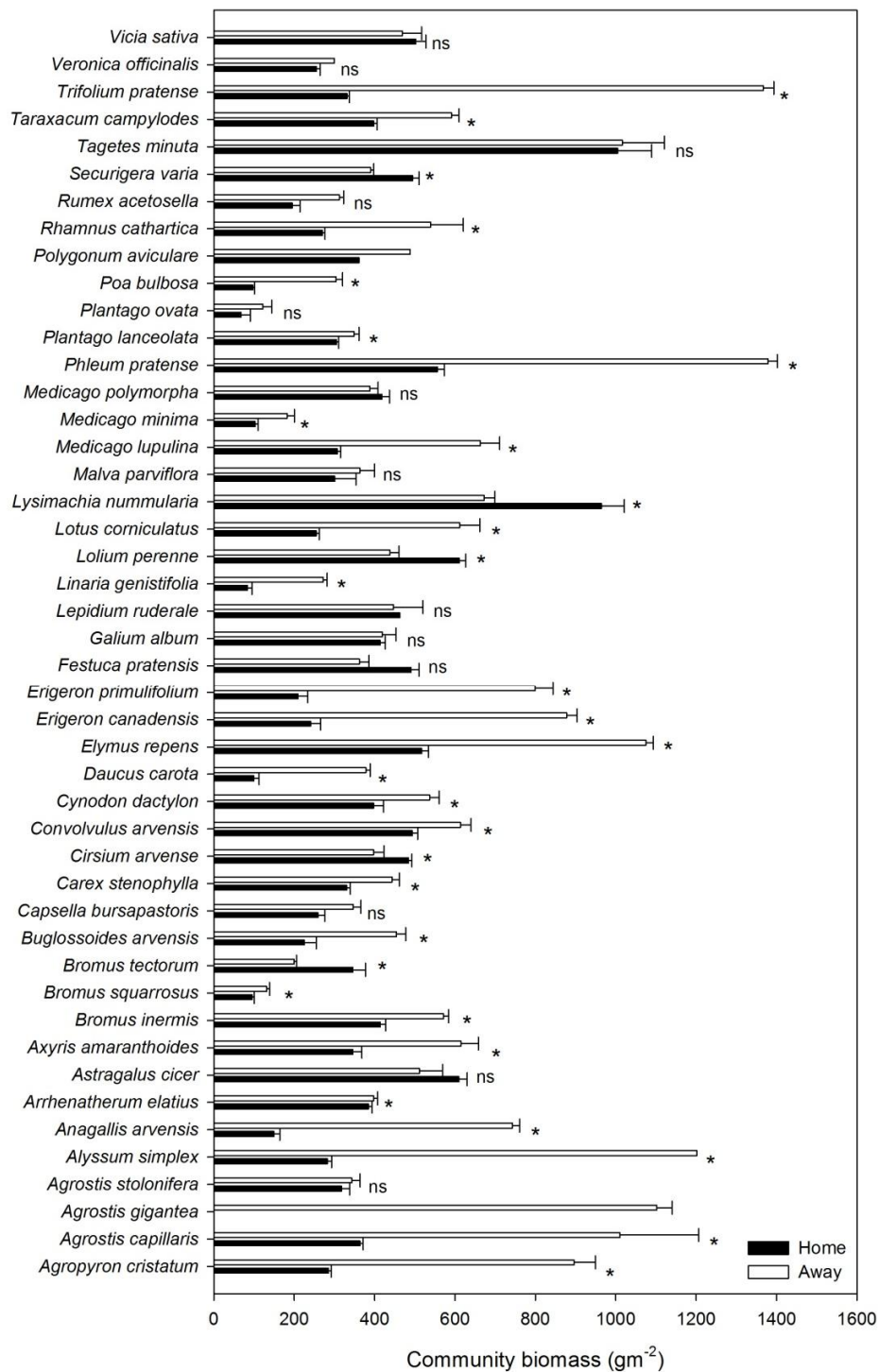


Figure S8.9: Species-specific differences in community biomass at home vs. away. Bars indicate mean  $\pm$  se. \* indicates significant differences ( $P < 0.05$ ).

## Appendix S9 – Grid scale results

Table S9.9: Differences at home vs. away for the 46 species at the grid (8 x 8 m) scale. General and generalized linear mixed model results of the effect of species range (home vs. away) on community biomass, total species richness, native species richness and alien species richness of the grids occupied.

SE = standard error

Resp. variable	Coefficient $\pm$ SE	p-value
Total biomass	-0.12 $\pm$ 0.03	< 0.001
Total species richness	1.05 $\pm$ 0.09	< 0.001
Native species richness	0.94 $\pm$ 0.06	< 0.001
Alien species richness	-1.86 $\pm$ 0.01	< 0.001

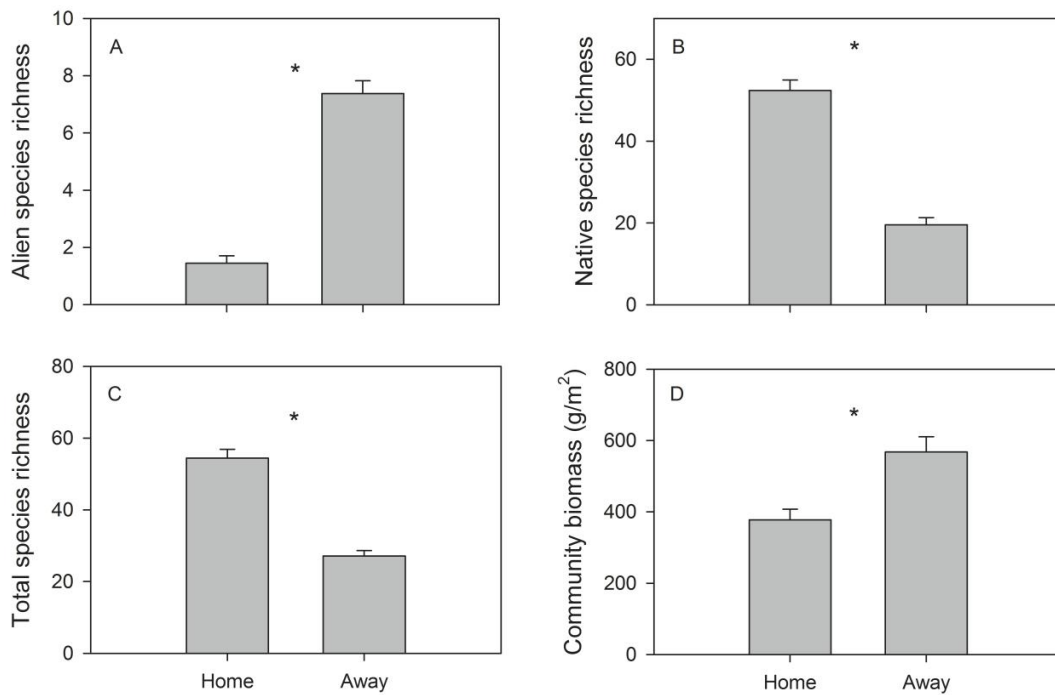


Figure S9.10: Characteristics of the grids (8 x 8 m) in which the 46 species are found in their native (home) and non-native (away) range. (A) Alien species richness, (B) native species richness, (C) total species richness and (D) community biomass of the plots occupied by species in their native (home) vs. non-native (away) range. Bars indicate mean  $\pm$  se. Means per treatment were calculated by averaging species' means. See Table S9.9 for statistical outputs. \* indicates significant differences among treatments ( $P < 0.05$ ).