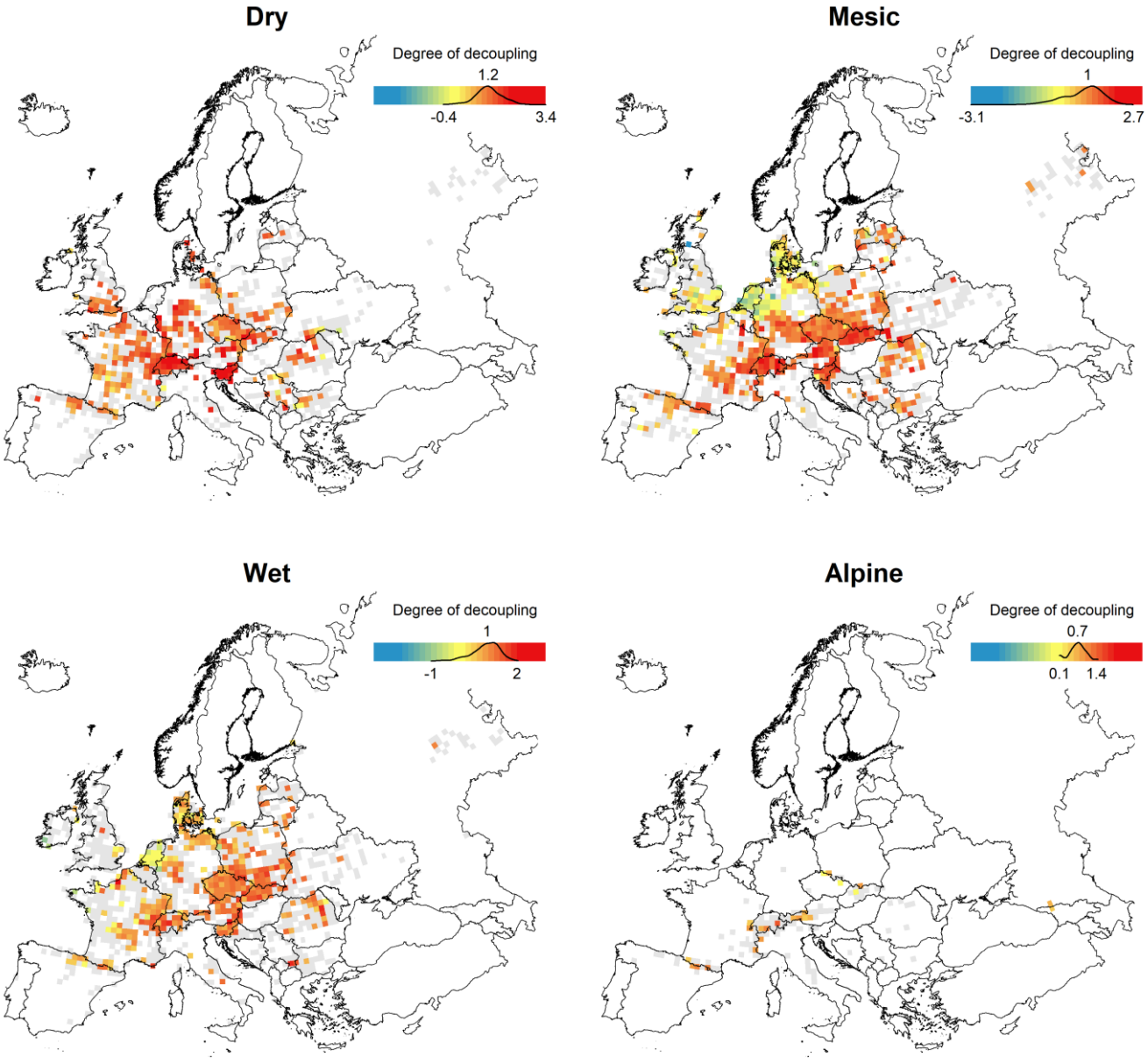
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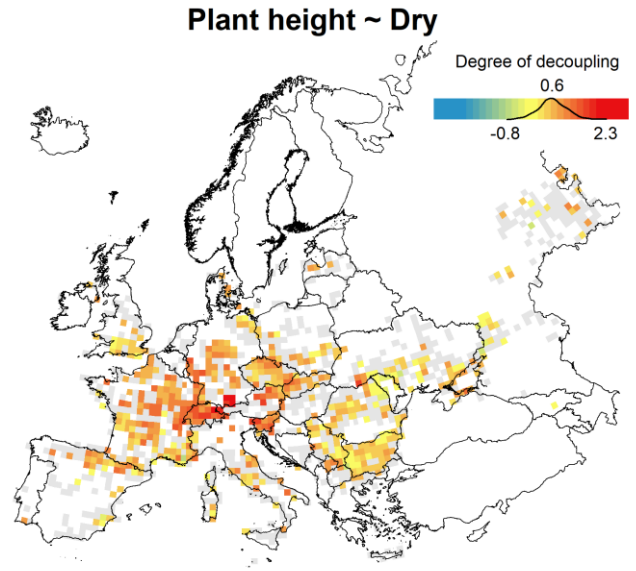
Supplementary Fig. S4. (i) Spatial distribution of decoupling for the combined PD and FD measures in dry, mesic, wet and alpine grasslands across Europe, and (ii) distribution of decoupling, PD and FD for individual plant traits (plant height, leaf area, specific leaf area, leaf nitrogen content, seed mass and lateral spread) in (A) dry, (B) mesic, (C) wet and (D) alpine grasslands across Europe. PD is shown using a subset for plant height in each grassland habitat group, because there was the best spatial coverage for this trait in all groups. The colour scale indicates average values per UTM 50 km × 50 km grid cells calculated from vegetation plots; the overall tendency is from highly decoupled FD/low PD/low FD (blue) to highly decoupled PD/high PD/high FD (red). Grid cells with less than 10 plots are in grey in the maps showing decoupling.

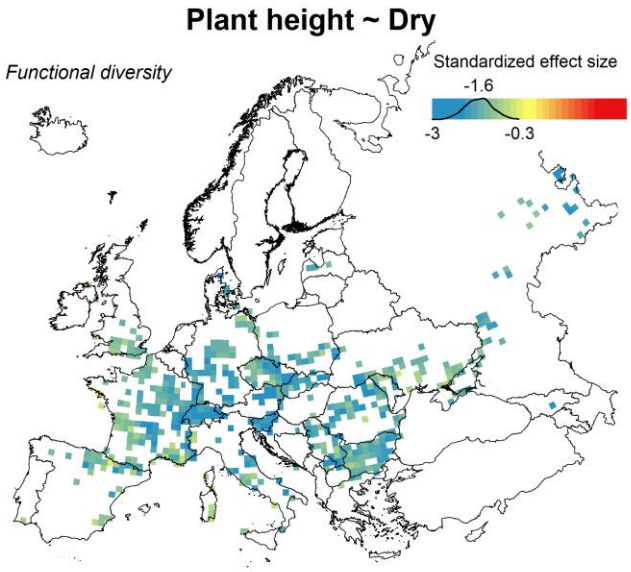
(i) Combined diversity measure

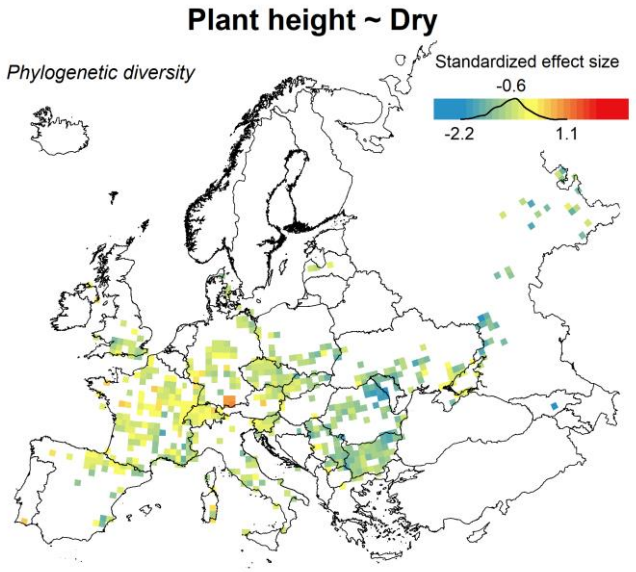


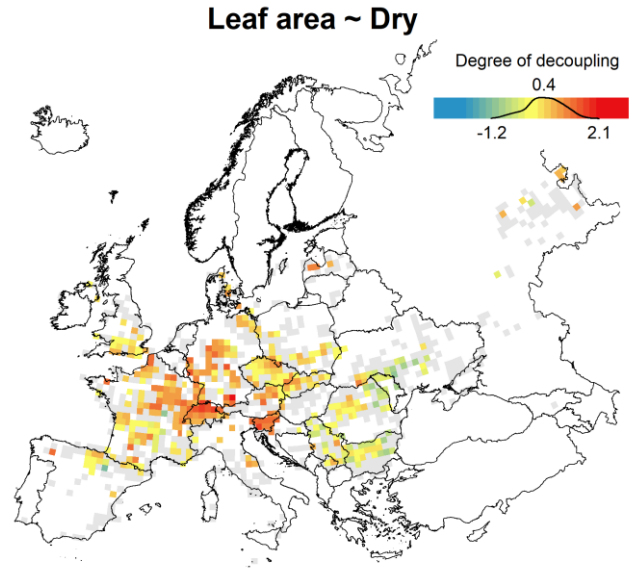
(ii) trait-habitat combinations

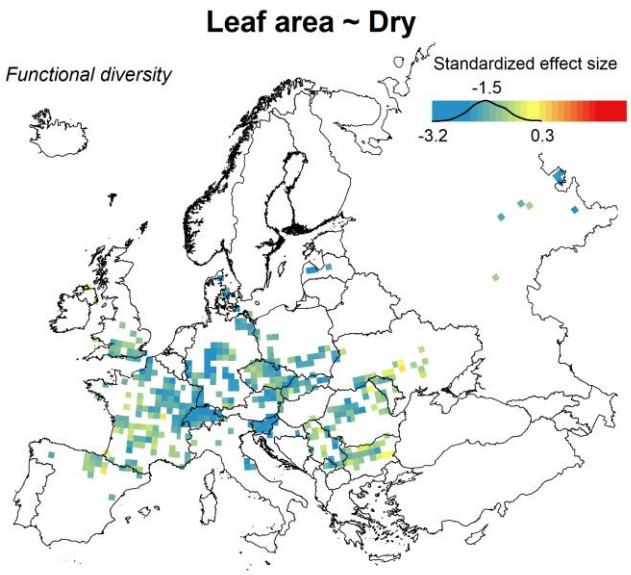
(A)



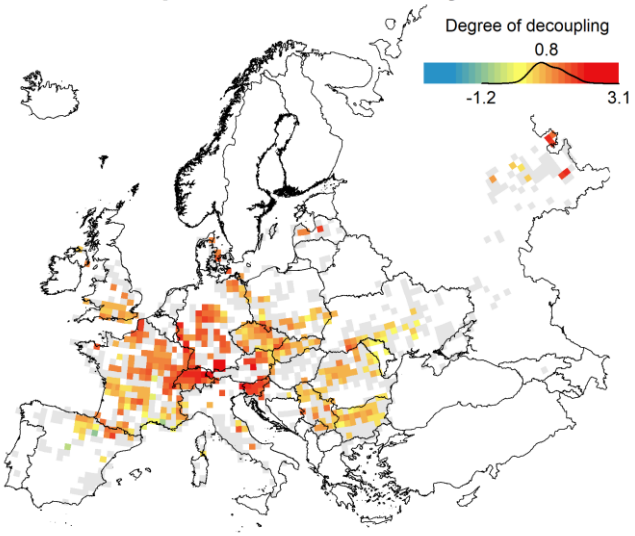




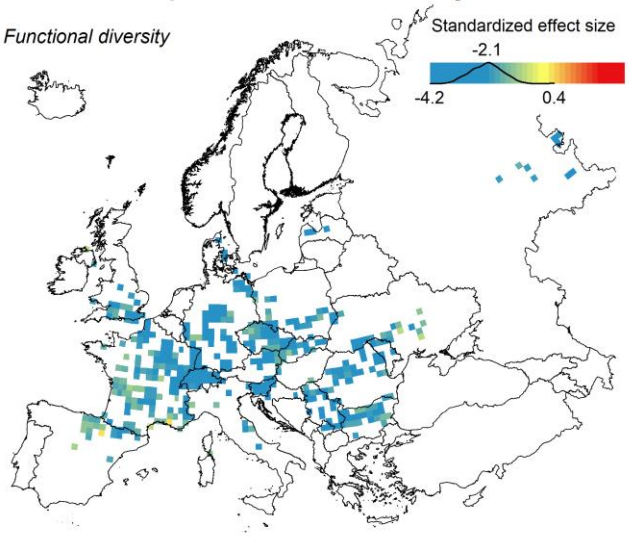




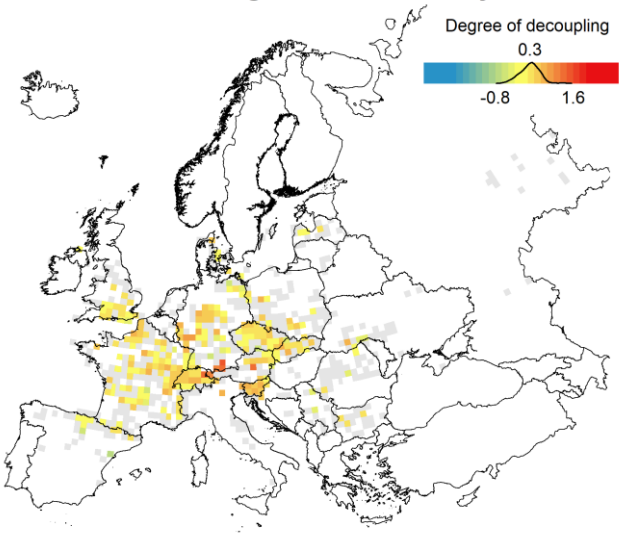
Specific leaf area ~ Dry



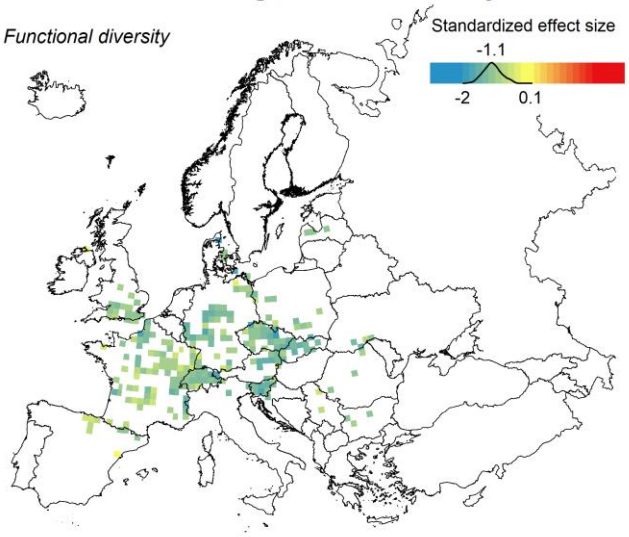
Specific leaf area ~ Dry



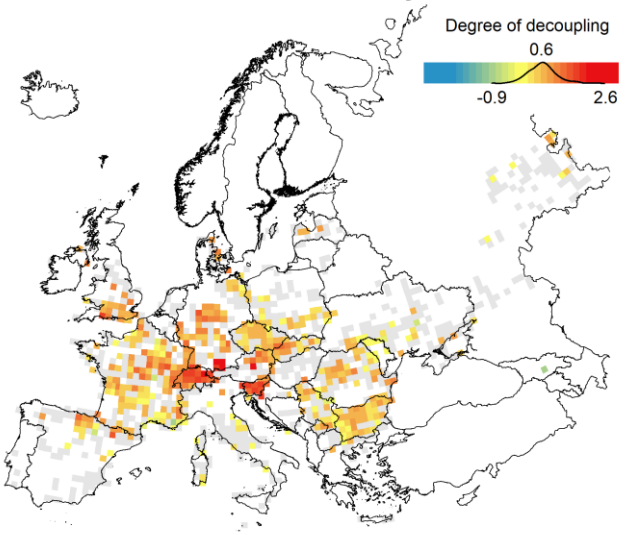
Leaf nitrogen content ~ Dry



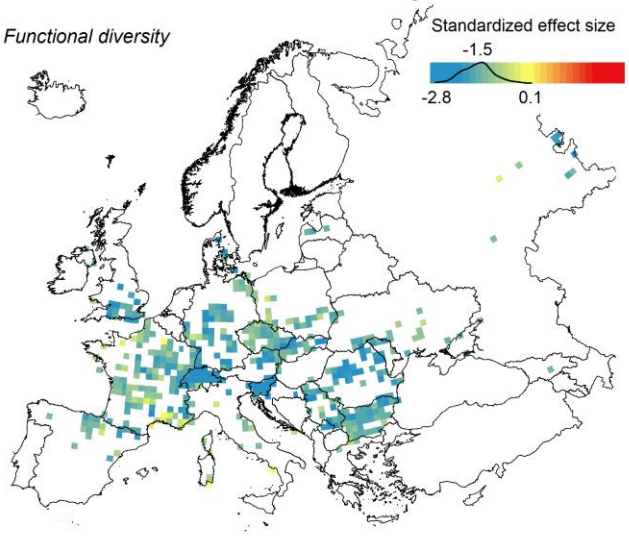
Leaf nitrogen content ~ Dry



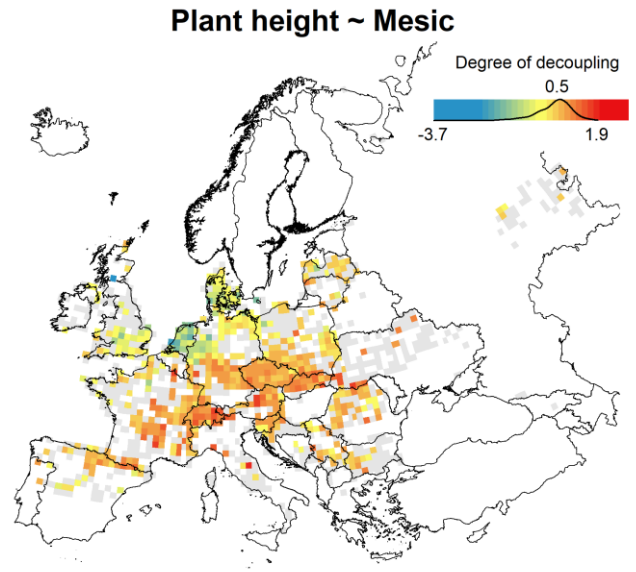
Seed mass ~ Dry

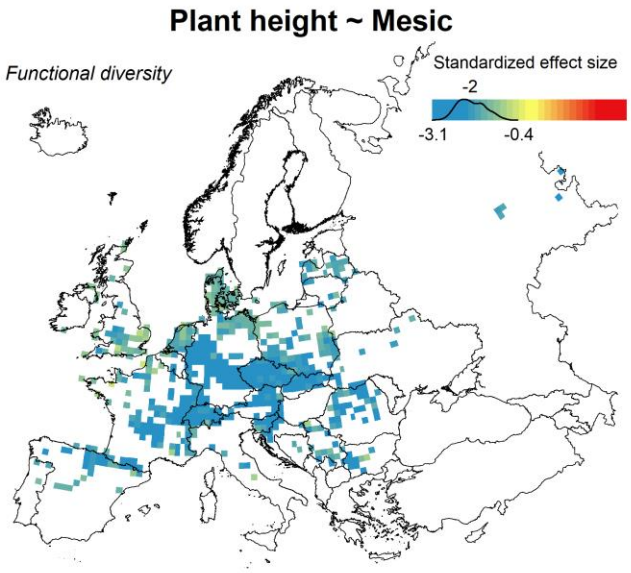


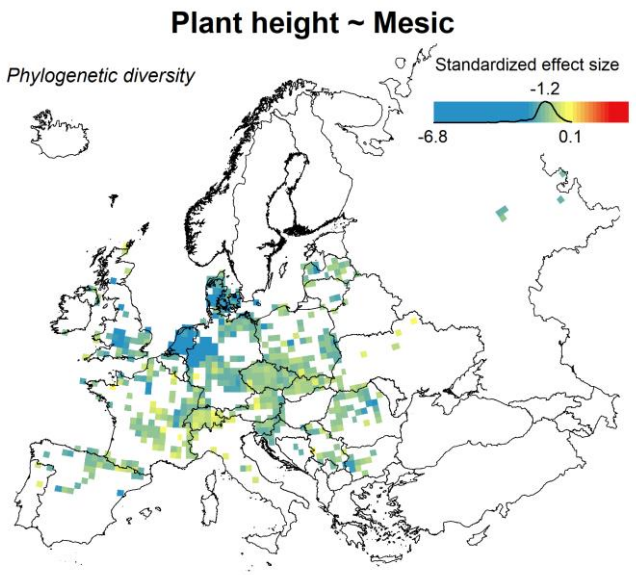
Seed mass ~ Dry

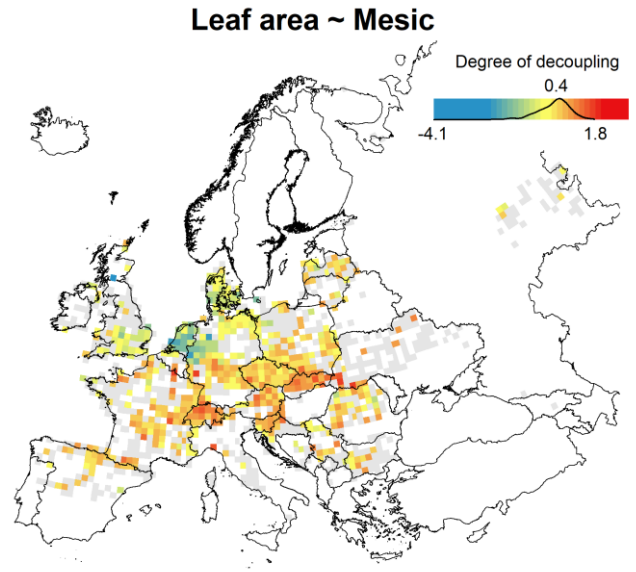


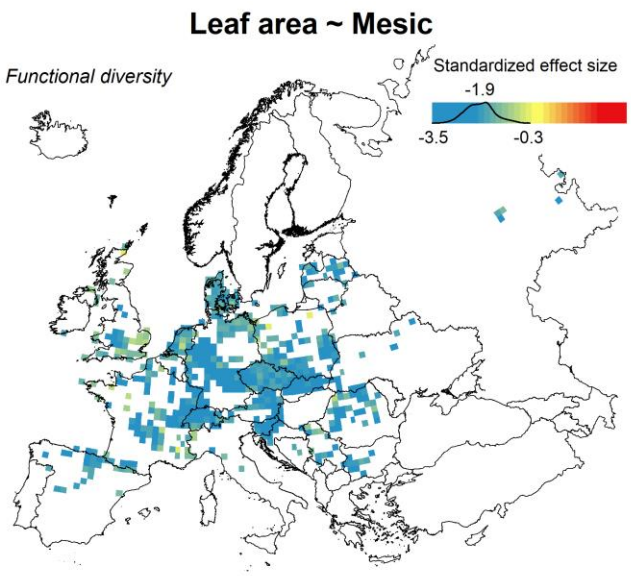
(B)


Plant height ~ Mesic
Degree of decoupling
0.5
-3.7
1.9

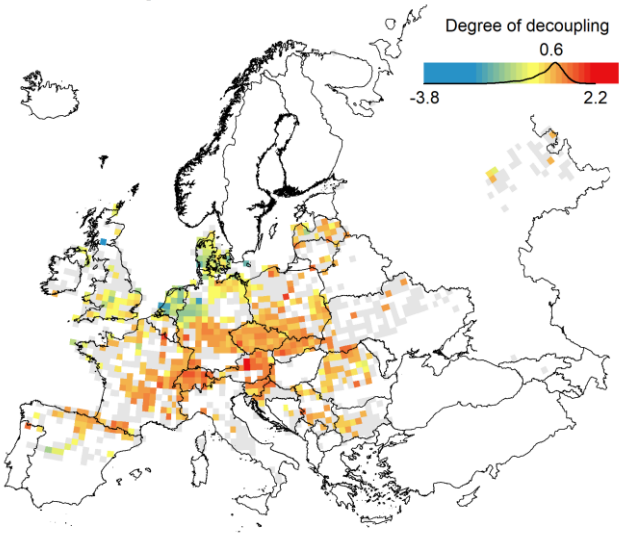

Plant height ~ Mesic
Functional diversity
Standardized effect size
-2
-3.1
-0.4


Plant height ~ Mesic
Phylogenetic diversity
Standardized effect size
-1.2
-6.8
0.1

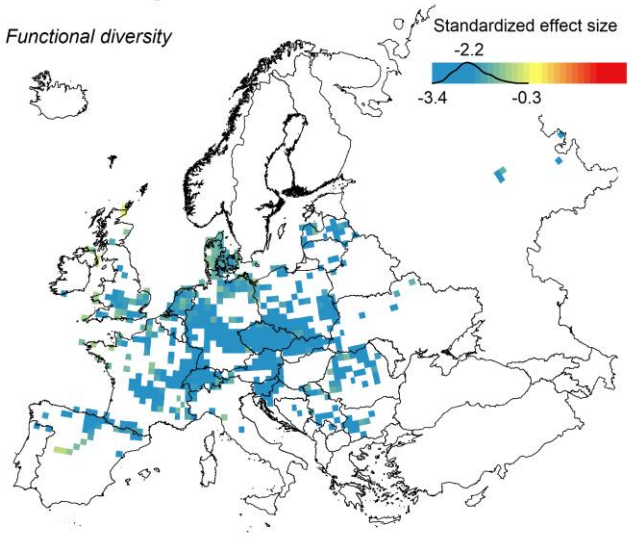

Leaf area ~ Mesic
Degree of decoupling
0.4
-4.1
1.8


Leaf area ~ Mesic
Functional diversity
Standardized effect size
-1.9
-3.5
-0.3

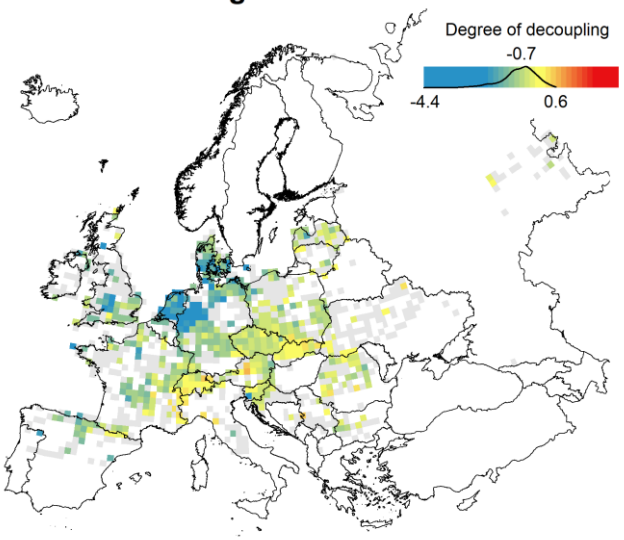
Specific leaf area ~ Mesic



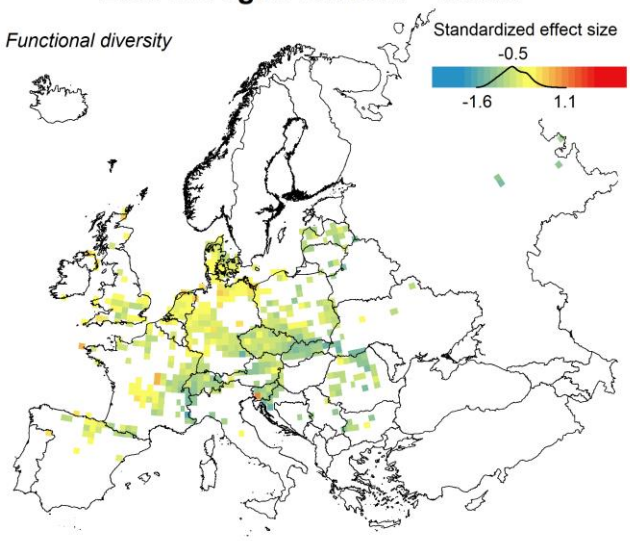
Specific leaf area ~ Mesic



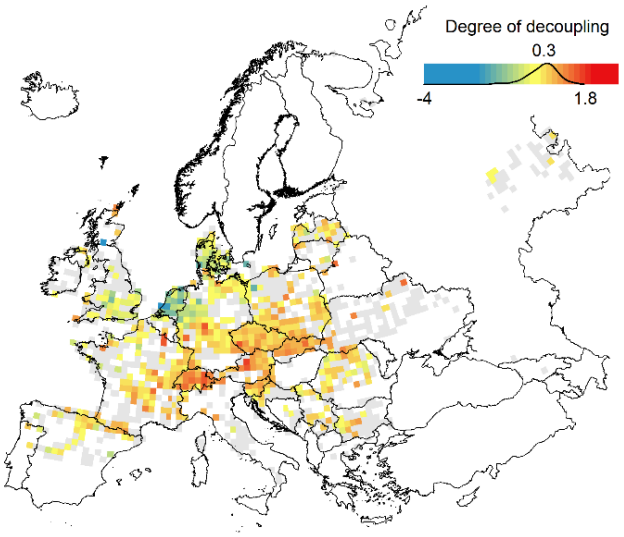
Leaf nitrogen content ~ Mesic



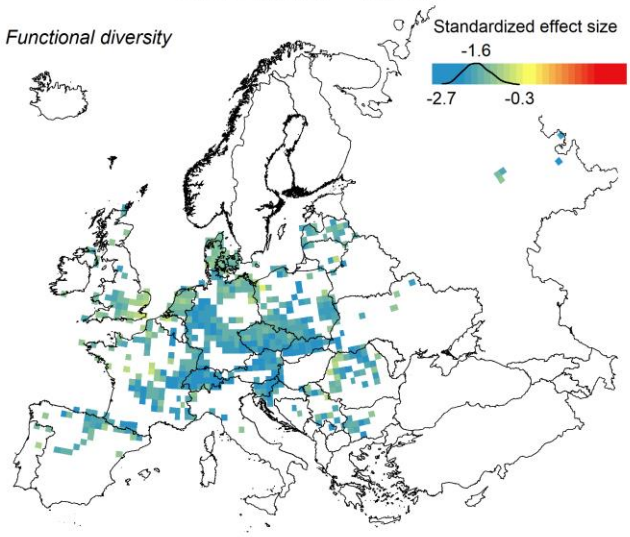
Leaf nitrogen content ~ Mesic

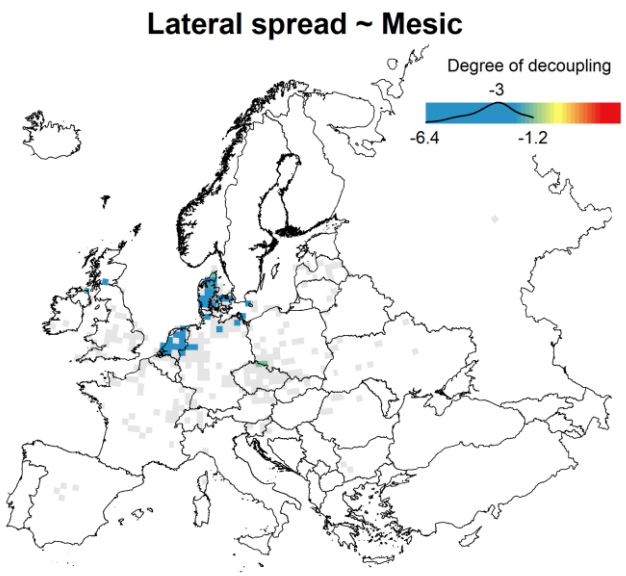


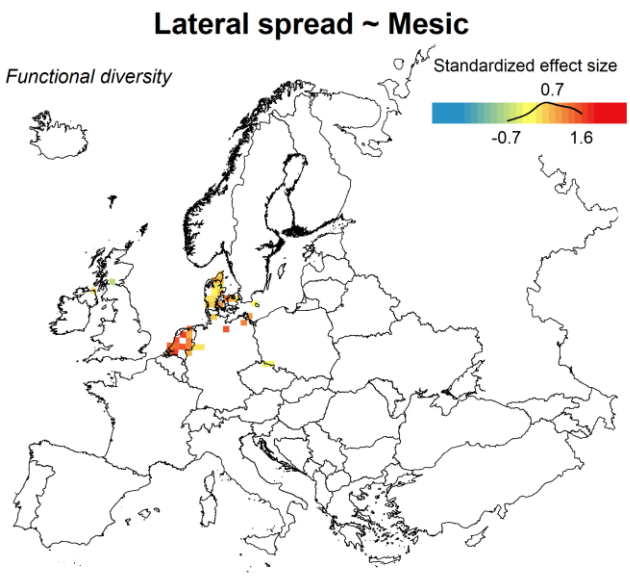
Seed mass ~ Mesic



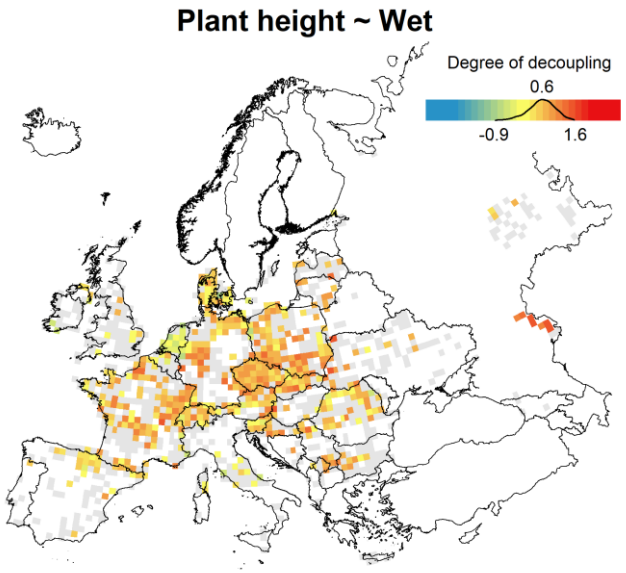
Seed mass ~ Mesic

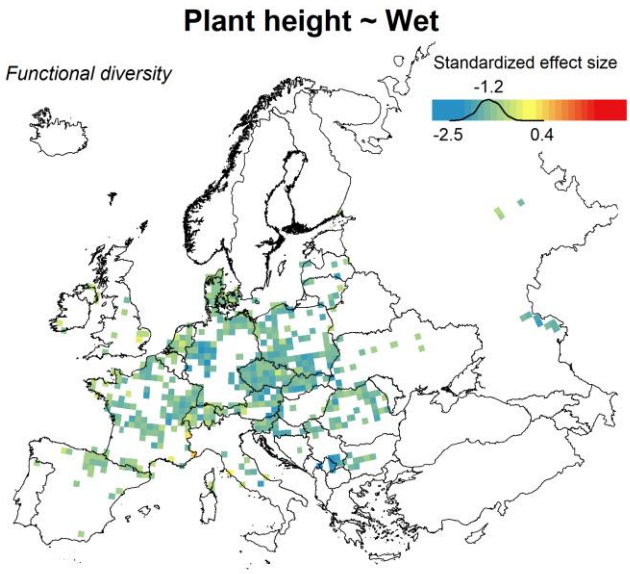


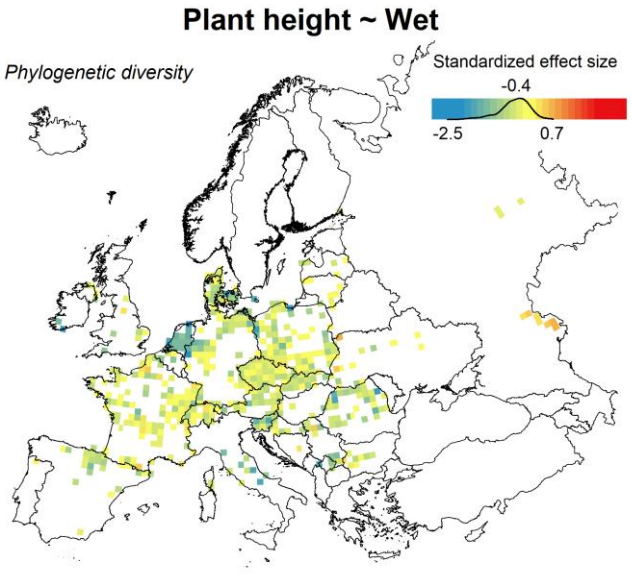

Lateral spread ~ Mesic
Degree of decoupling
-3
-6.4
-1.2


Lateral spread ~ Mesic
Functional diversity
Standardized effect size
0.7
-0.7
1.6

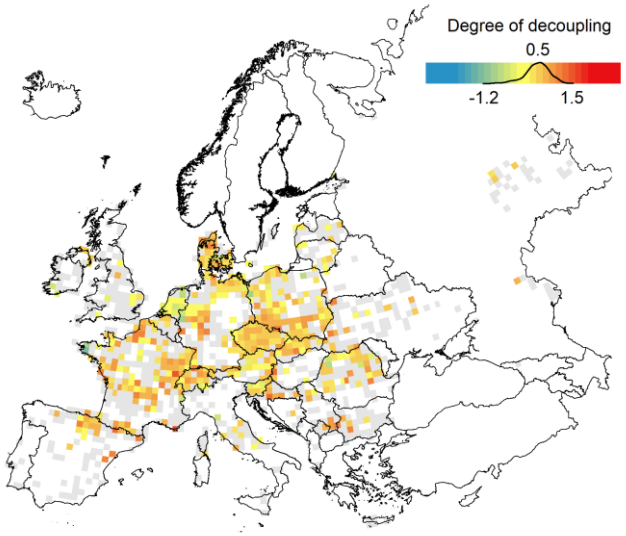
(C)


Plant height ~ Wet
Degree of decoupling
0.6
-0.9
1.6

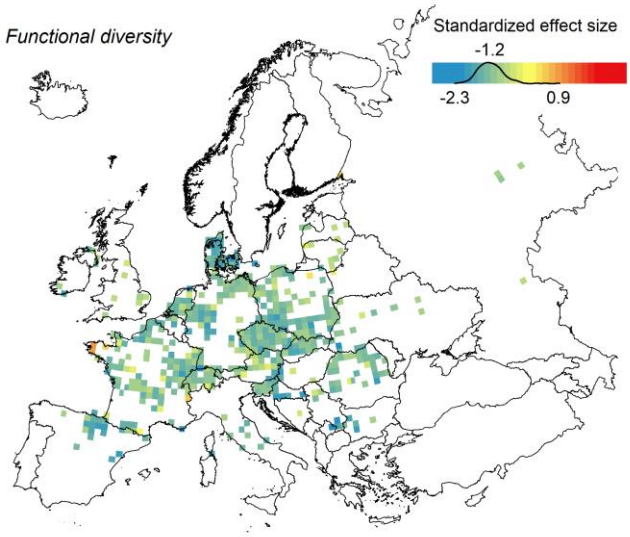

Plant height ~ Wet
Functional diversity
Standardized effect size
-1.2
-2.5
0.4


Plant height ~ Wet
Phylogenetic diversity
Standardized effect size
-0.4
-2.5
0.7

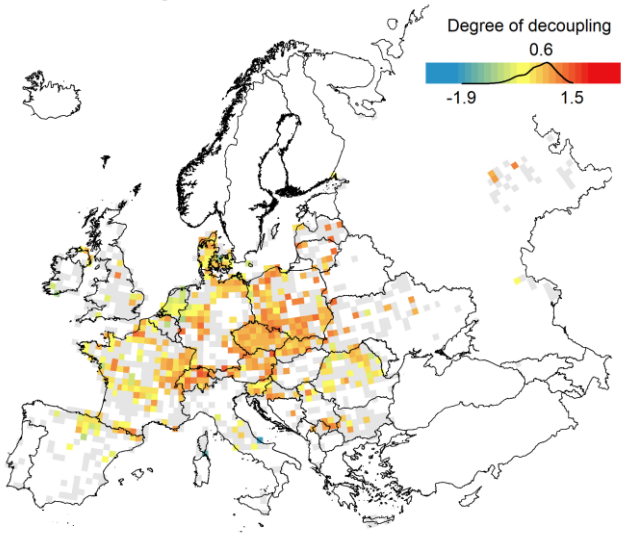
Leaf area ~ Wet



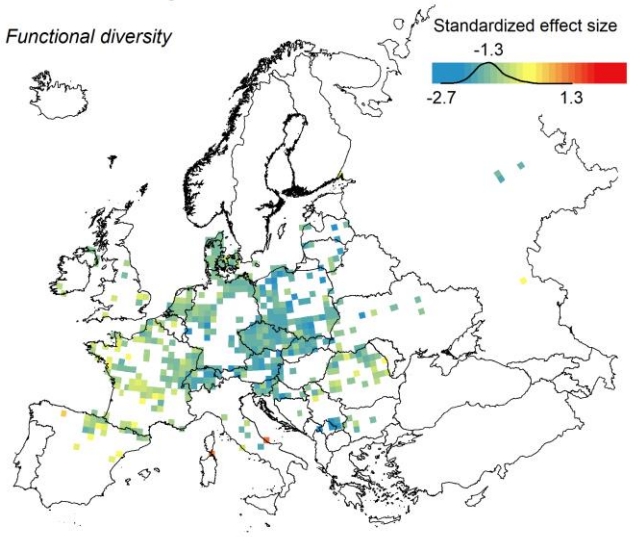
Leaf area ~ Wet



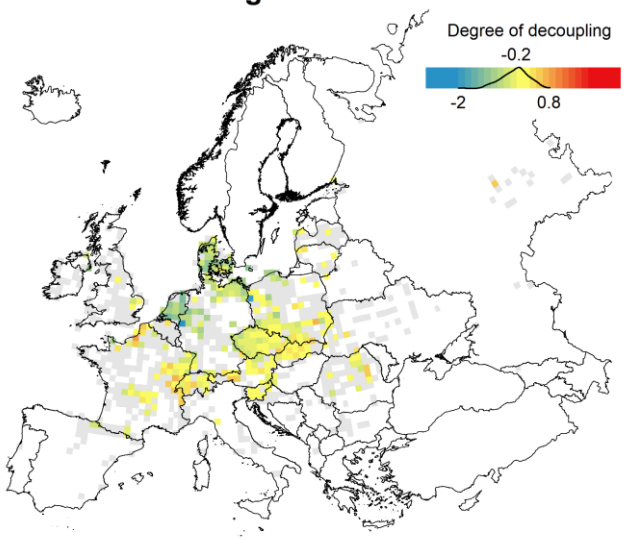
Specific leaf area ~ Wet



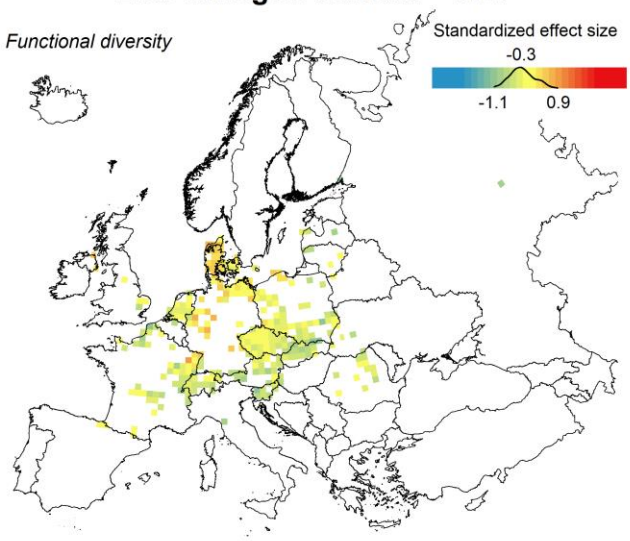
Specific leaf area ~ Wet

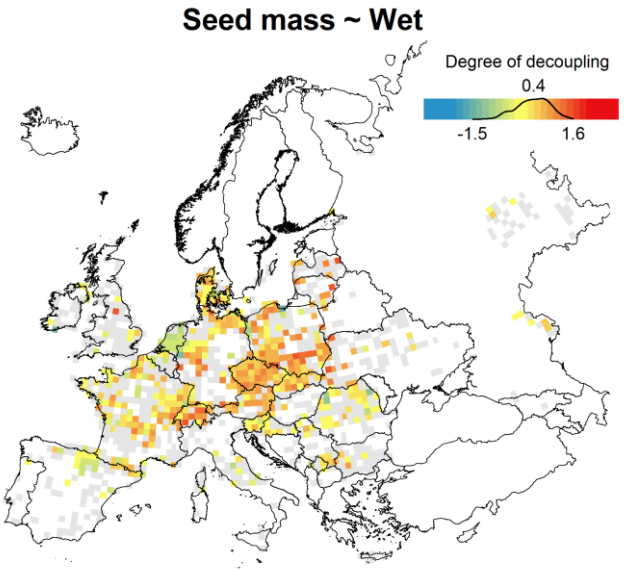


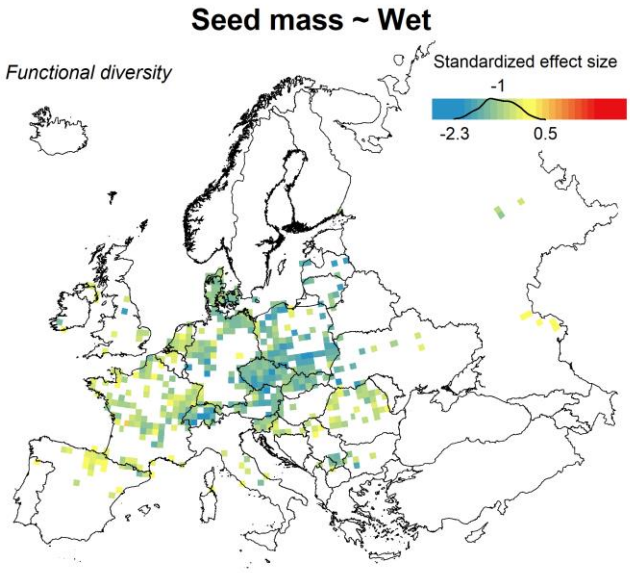
Leaf nitrogen content ~ Wet

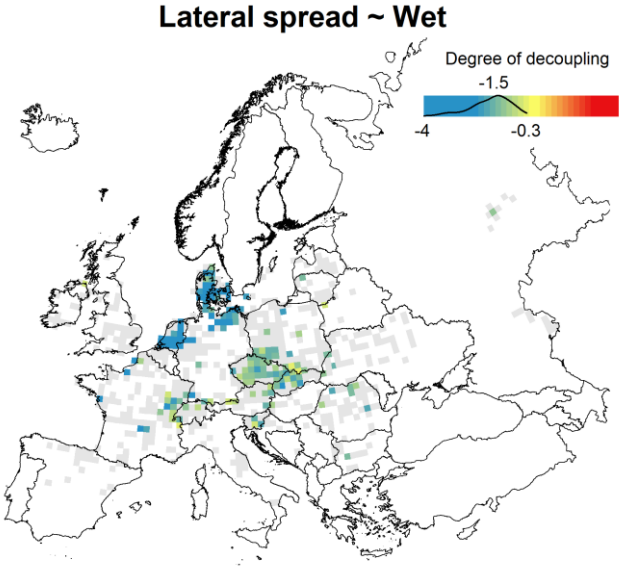


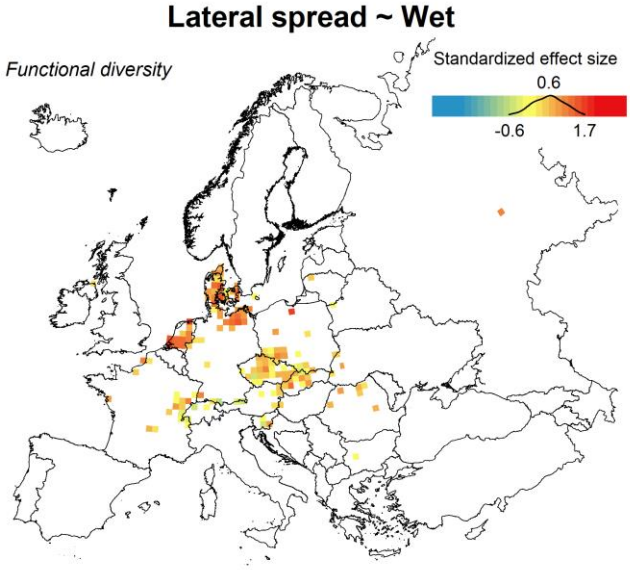
Leaf nitrogen content ~ Wet



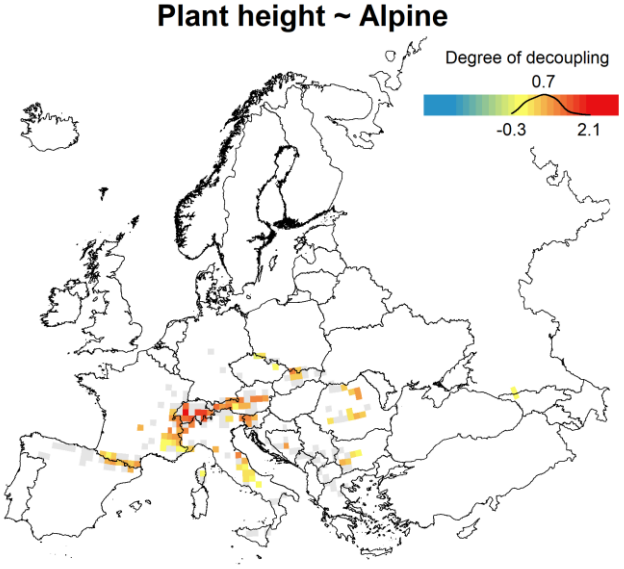

Seed mass ~ Wet
Degree of decoupling
0.4
-1.5
1.6

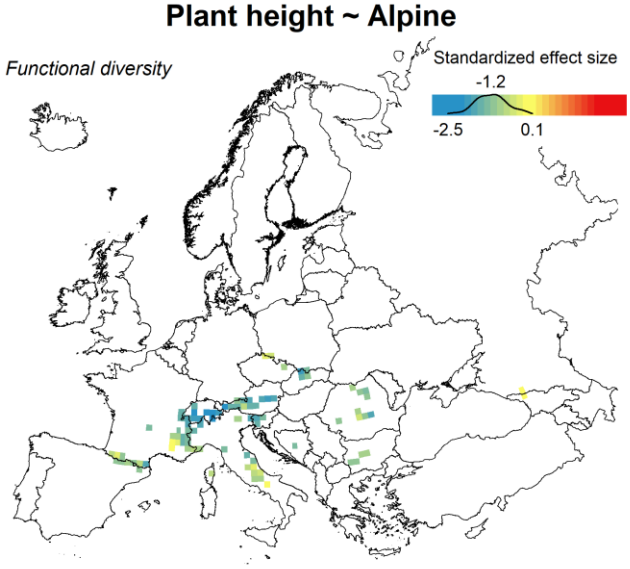

Seed mass ~ Wet
Functional diversity
Standardized effect size
-1
-2.3
0.5


Lateral spread ~ Wet
Degree of decoupling
-1.5
-4
-0.3

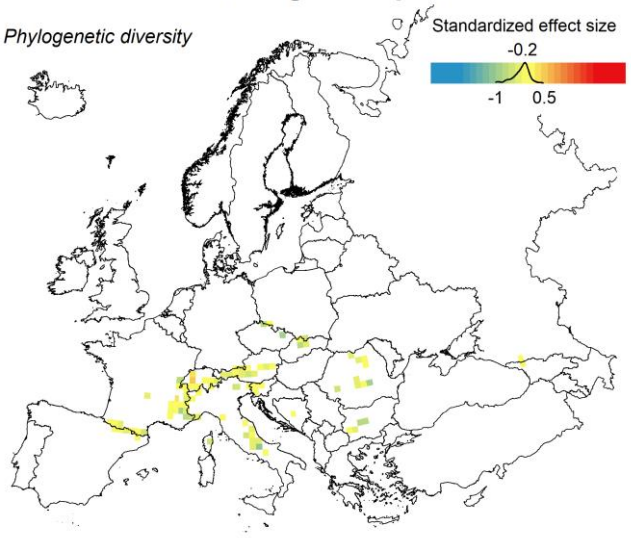

Lateral spread ~ Wet
Functional diversity
Standardized effect size
0.6
-0.6
1.7

(D)

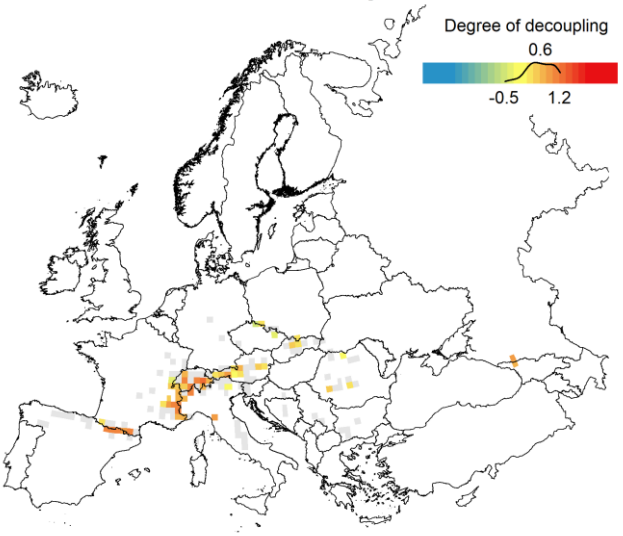

Plant height ~ Alpine
Degree of decoupling
0.7
-0.3
2.1


Plant height ~ Alpine
Functional diversity
Standardized effect size
-1.2
-2.5
0.1

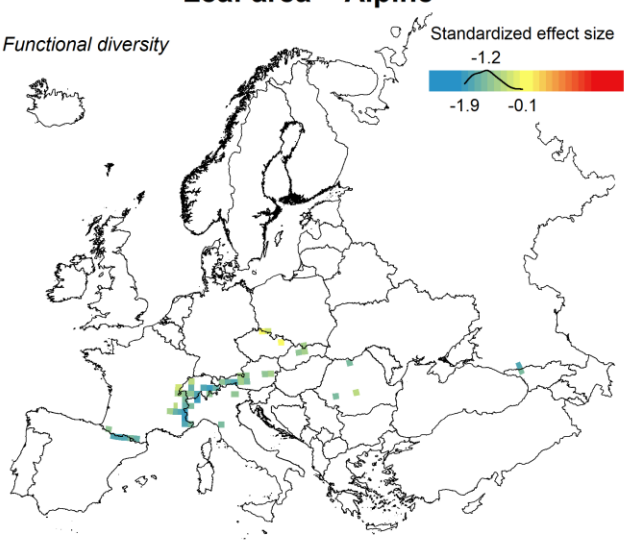
Plant height ~ Alpine



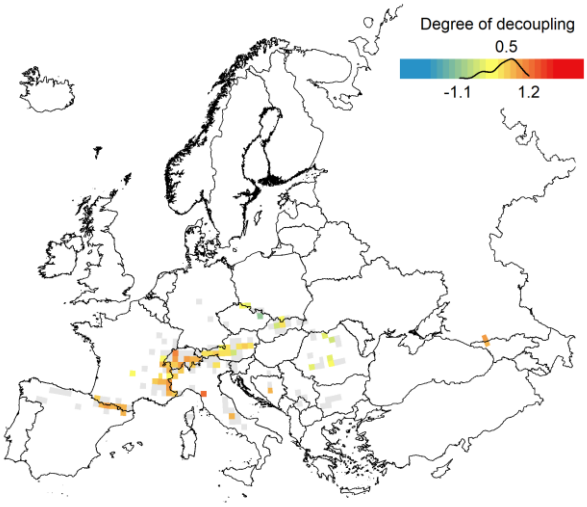
Leaf area ~ Alpine



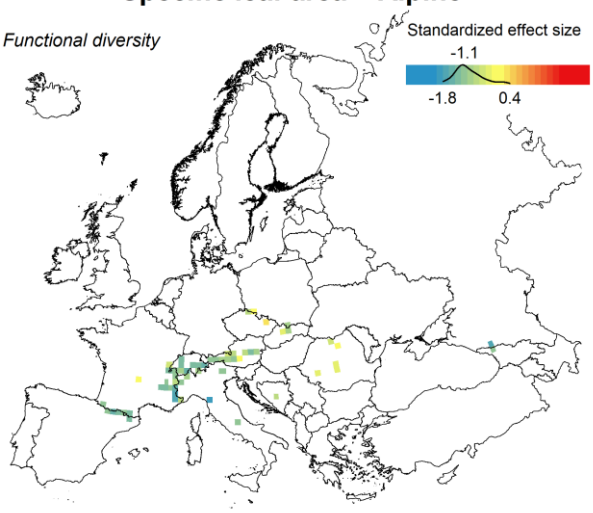
Leaf area ~ Alpine



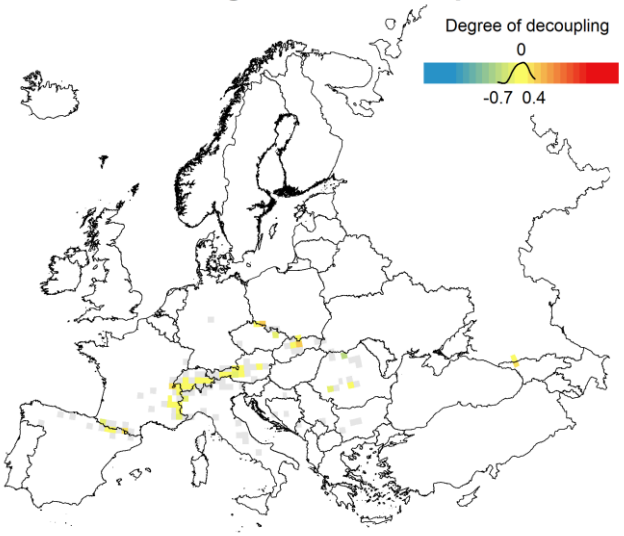
Specific leaf area ~ Alpine



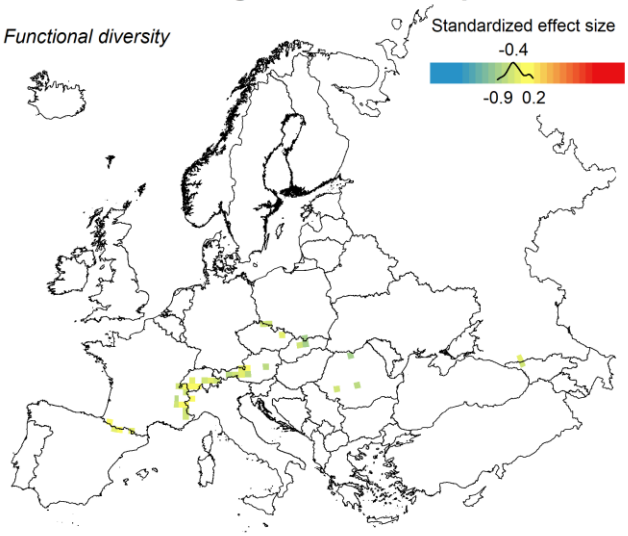
Specific leaf area ~ Alpine



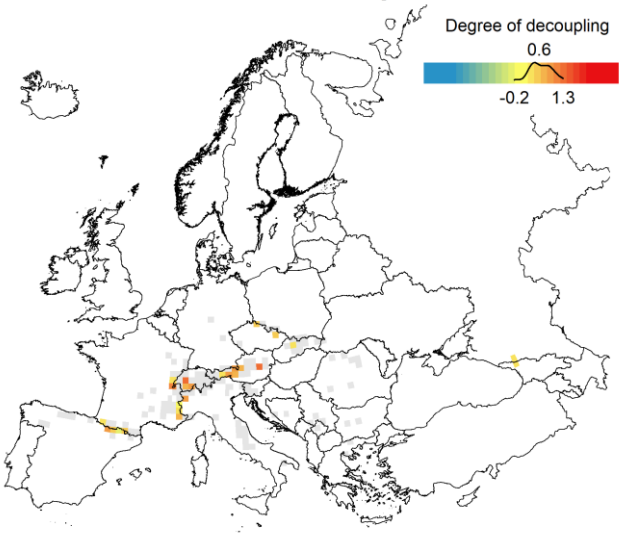
Leaf nitrogen content ~ Alpine



Leaf nitrogen content ~ Alpine



Seed mass ~ Alpine



Seed mass ~ Alpine

