**Supplementary Table 6.** Multiple linear regression model statistics for plant and fungal community estimators predicted by land use history (LU) and mean annual precipitation (MAP) normalized around the mean precipitation (730.01 mm yr-1) main effects and their interaction (LU x MAP) with native prairie as reference (0) compared to post-agricultural site (1). Statistically significant models and predictors (P<0.05) are bold-faced. Parameter estimate significances are denoted as 'ns' for not significant, ‘(\*)’ for 0.05≤P<0.10, ‘\*’ for 0.01≤P<0.05, ‘\*\*’ for 0.001≤P<0.01, and ‘\*\*\*’ for P<0.001. Response variables with outliers were analyzed with and without the identified outliers. Models shown here do not include potential outliers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Response  | Model  | Predictor  |  Estimate±SE | |t –value|  |
| Plant FQIadj  | **F3,11 =9.57\*, R2adj=0.647, AIC=103.47**  | **Intercept**  |  **31.78±2.25**  | **14.11\*\*\***  |
|   |   | Land Use (LU)  |  –5.15±3.34  | –1.54ns  |
|   |   | **MAP**  |  **5.16x10-2±1.08x10-2**  |  **4.79\*\*\***  |
|   |   | **LU x MAP**  | **–7.13x10-2±1.64x10-2**  | **–4.35\*\***  |
|   |   |   |   |   |
| Plant Diversity (H')  | **F3,11 =8.00\*, R2adj=0.600, AIC=18.15**  | **Intercept**  |  **2.54±1.43x10-1**  | **17.78\*\*\***  |
|   |   | **LU**  | **–6.80x10-1 ±1.94x10-1**  | **–3.51\*\***  |
|   |   | MAP  |  9.34x10-4±7.20x10-4  |  1.30ns  |
|   |   | LU x MAP  |  8.91x10-4±9.53x10-4  |  0.94ns  |
|   |   |   |   |   |
| Plant PCoA Axis 2  | F3,12=0.11ns, R2adj=–0.237, AIC= 0.39  | Intercept  | –4.94x10-2±7.89x10-2  | –0.63ns  |
|   |   | LU  |  3.27x10-2±1.07x10-1  |  0.31ns  |
|   |   | MAP  |  8.24x10-5±3.98x10-4  |  0.21ns  |
|   |   | LU x MAP  |  6.93x10-5±5.27x10-4  |  0.13ns  |
|   |   |   |   |   |
| ASV Richness (SObs)  | F3,11=0.19ns, R2adj= –0.21, AIC=208.31  | **Intercept**  |  **1151.76±81.06** | **14.21\*\*\***  |
|   |   | LU  |  –5.07x10-1±109.90  | –0.01ns  |
|   |   | MAP  |  –6.02x10-2±4.08x10-1  | –0.15ns  |
|   |   | LU x MAP  |  3.21x10-1±5.40x10-1  |  0.59ns  |
|   |   |   |   |   |
| OTU Richness (SObs)  | F3,11=0.73ns, R2ad**j**= –0.061, AIC=189.33  | **Intercept**  |  **755.85±43.05**  |  **17.56\*\*\***  |
|   |   | LU  |  –59.19±58.37  | –1.01ns  |
|   |   | MAP  |  –2.38x10-2±2.17x10-1  | –0.11ns  |
|   |   | LU x MAP  |  2.21x10-1±2.87x10-1  |  0.77ns |