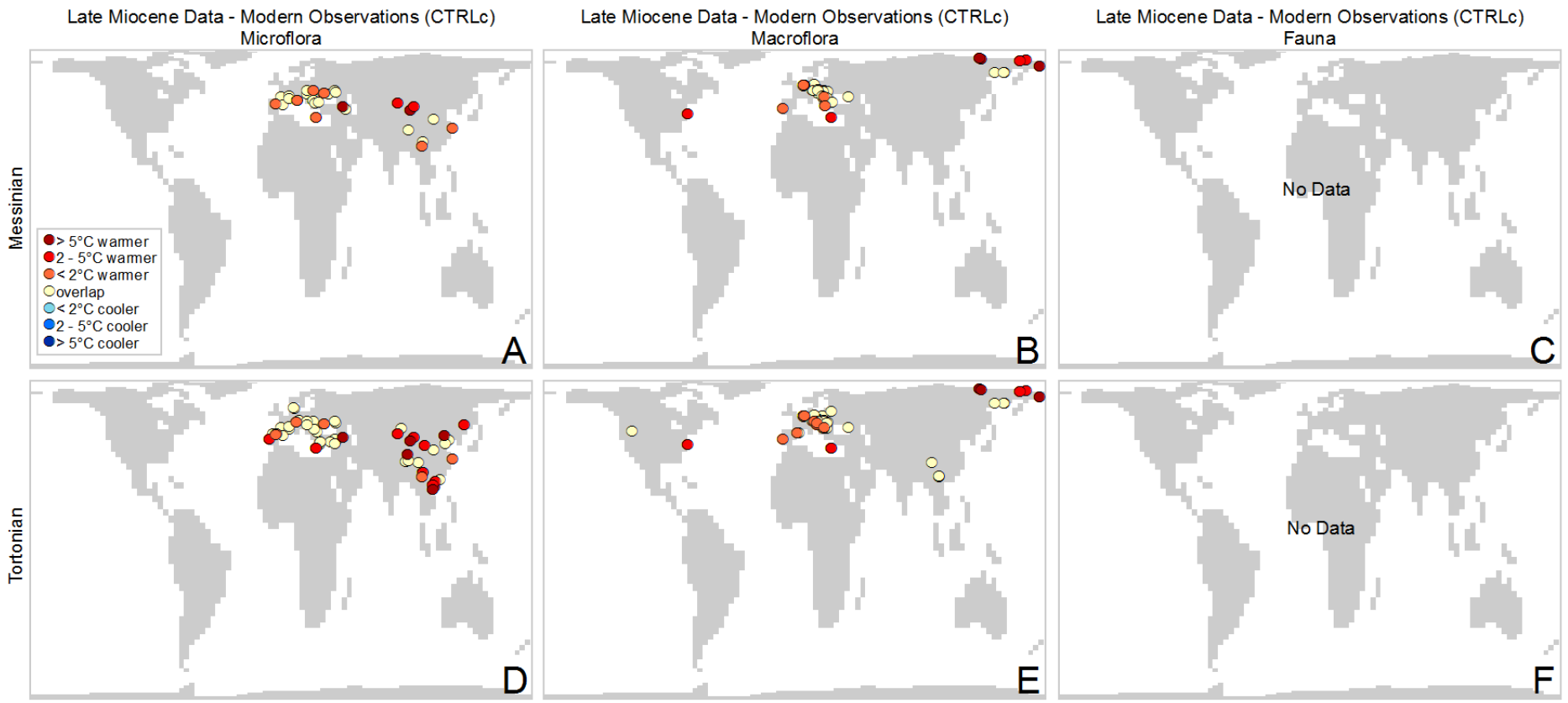

Figure S1. Results from the model-data comparison for mean cold month temperature, late Miocene data – modern potential natural climate estimates.

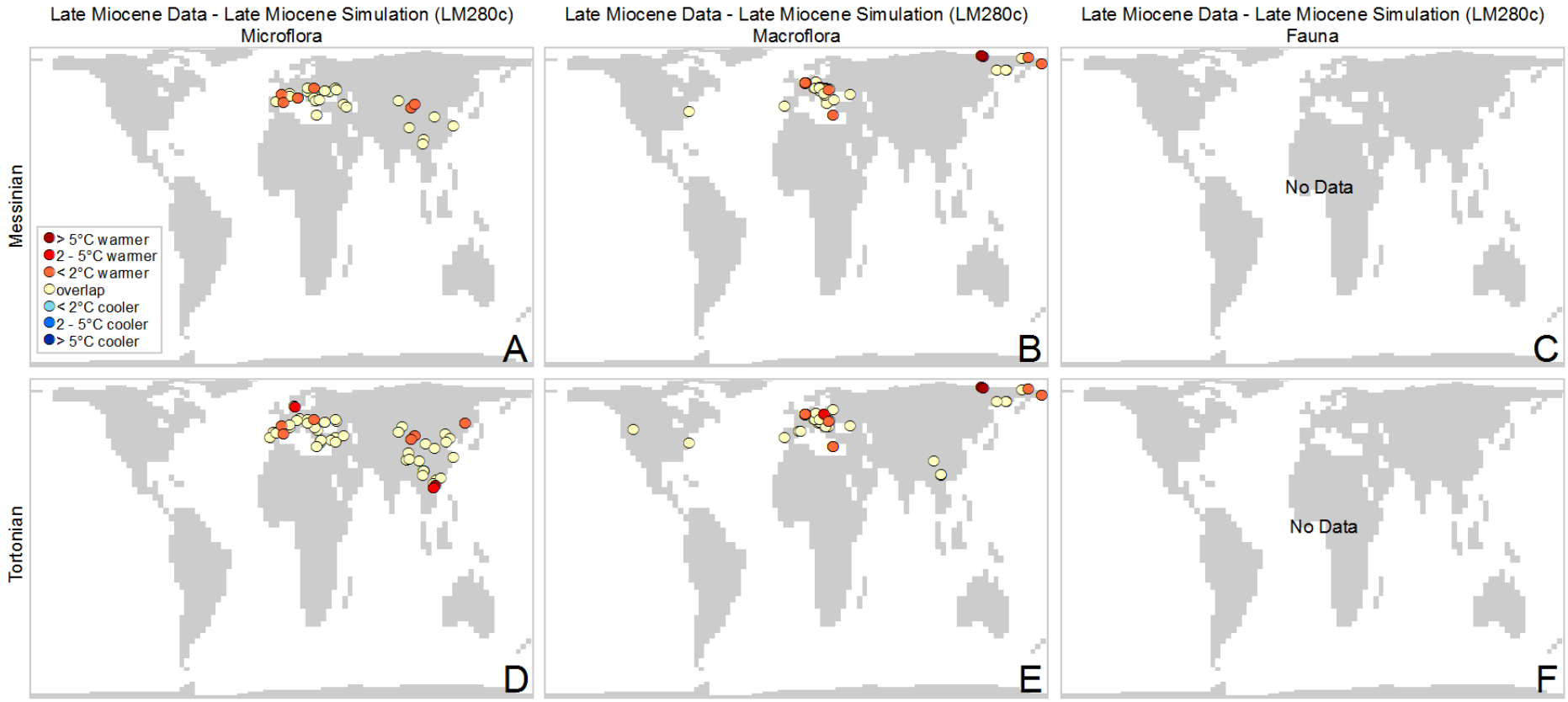

Figure S2. Results from the model-data comparison for mean cold month temperature, late Miocene data – LM280c.

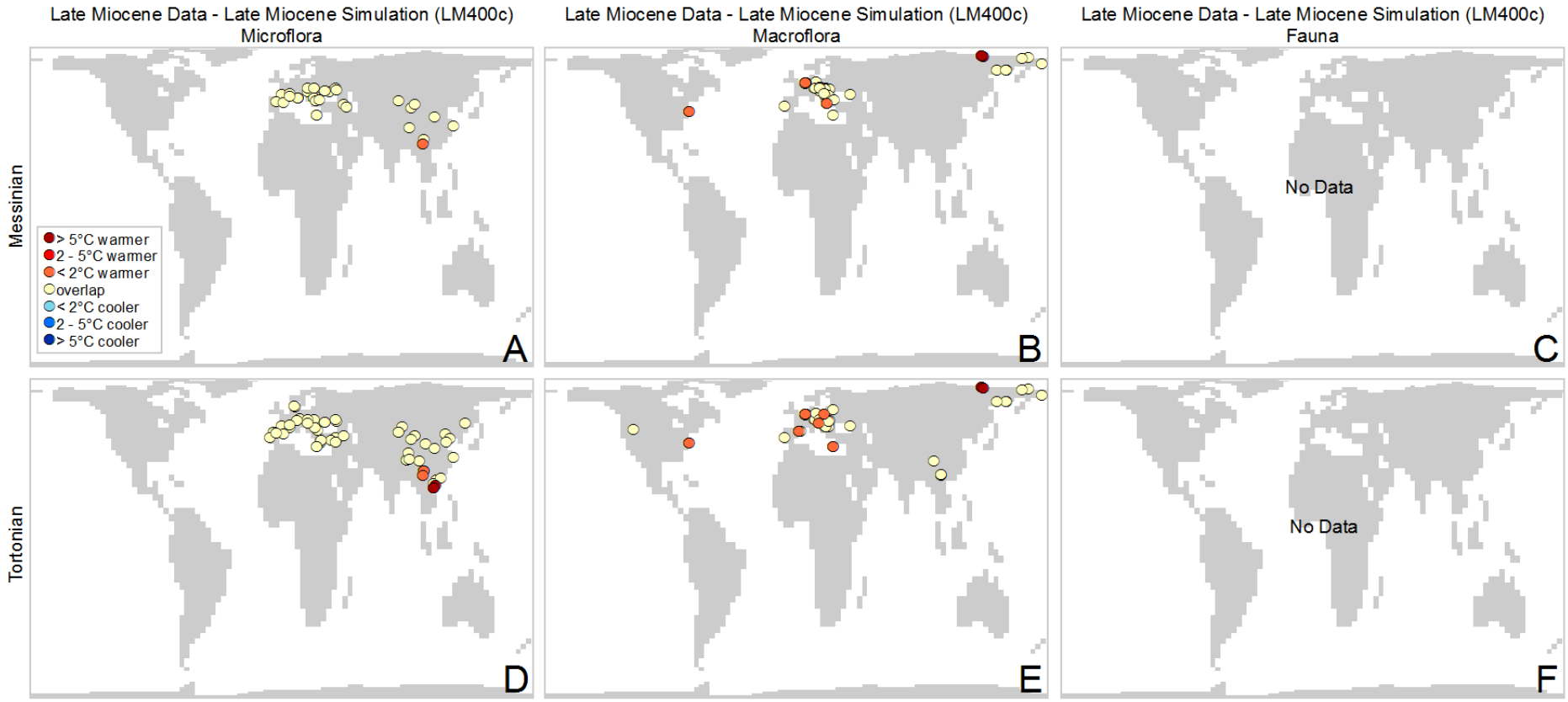

Figure S3. Results from the model-data comparison for mean cold month temperature, late Miocene data – LM400c.

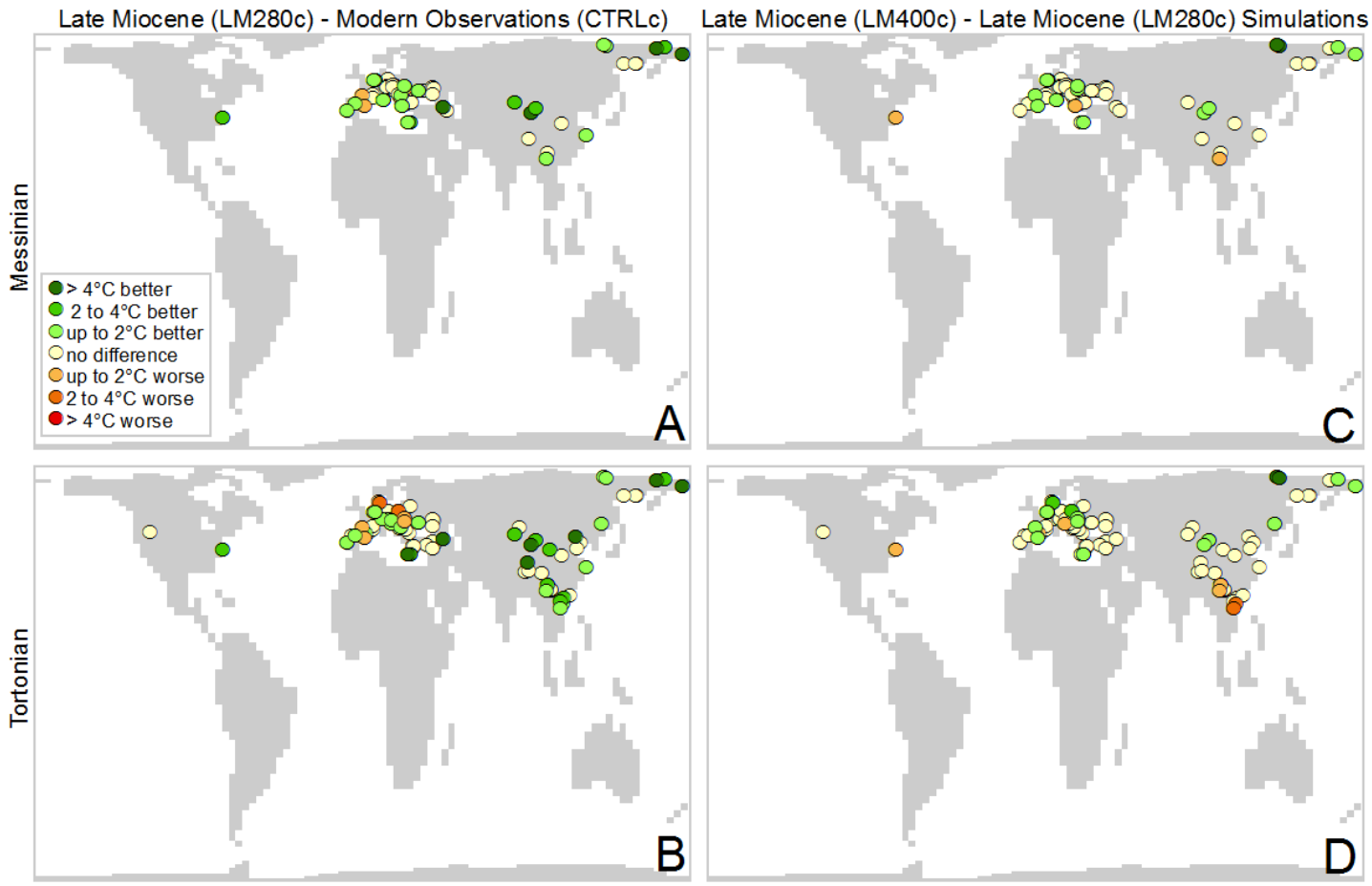

Figure S4. Improvements in the model-data comparison for mean cold month temperature. The lefthand column (A,B) shows the improvement that the late Miocene palaeogeography makes to the model-data comparison. The righthand colum (C, D) shows the improvement that higher CO_2 makes to the model-data comparison. Green circles indicate an improvement, red circles indicate a deterioration. The datapoints showing 'no difference' are plotted underneath the other datapoints in order to highlight the differences.

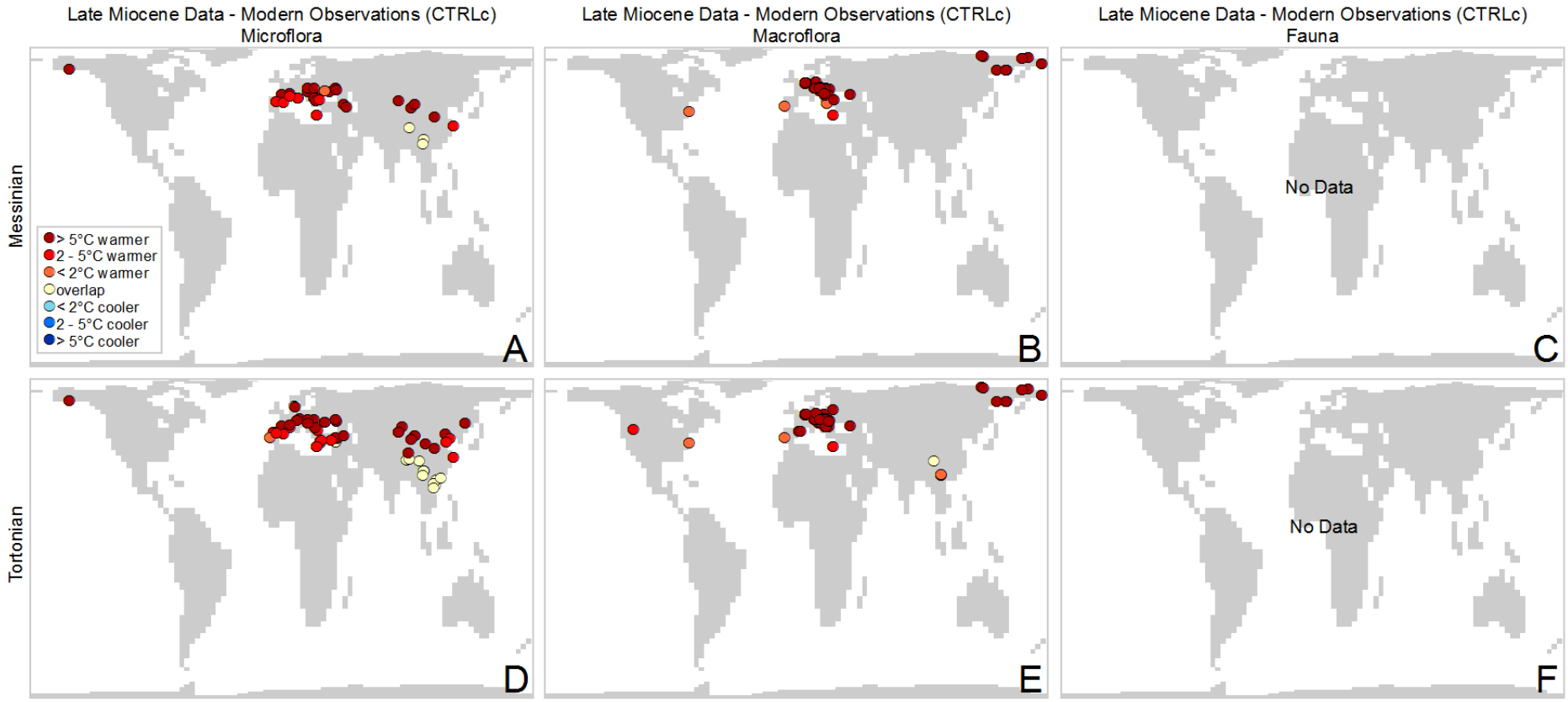

Figure S5. Results from the model-data comparison for mean warm month temperature, late Miocene data – modern potential natural climate estimates

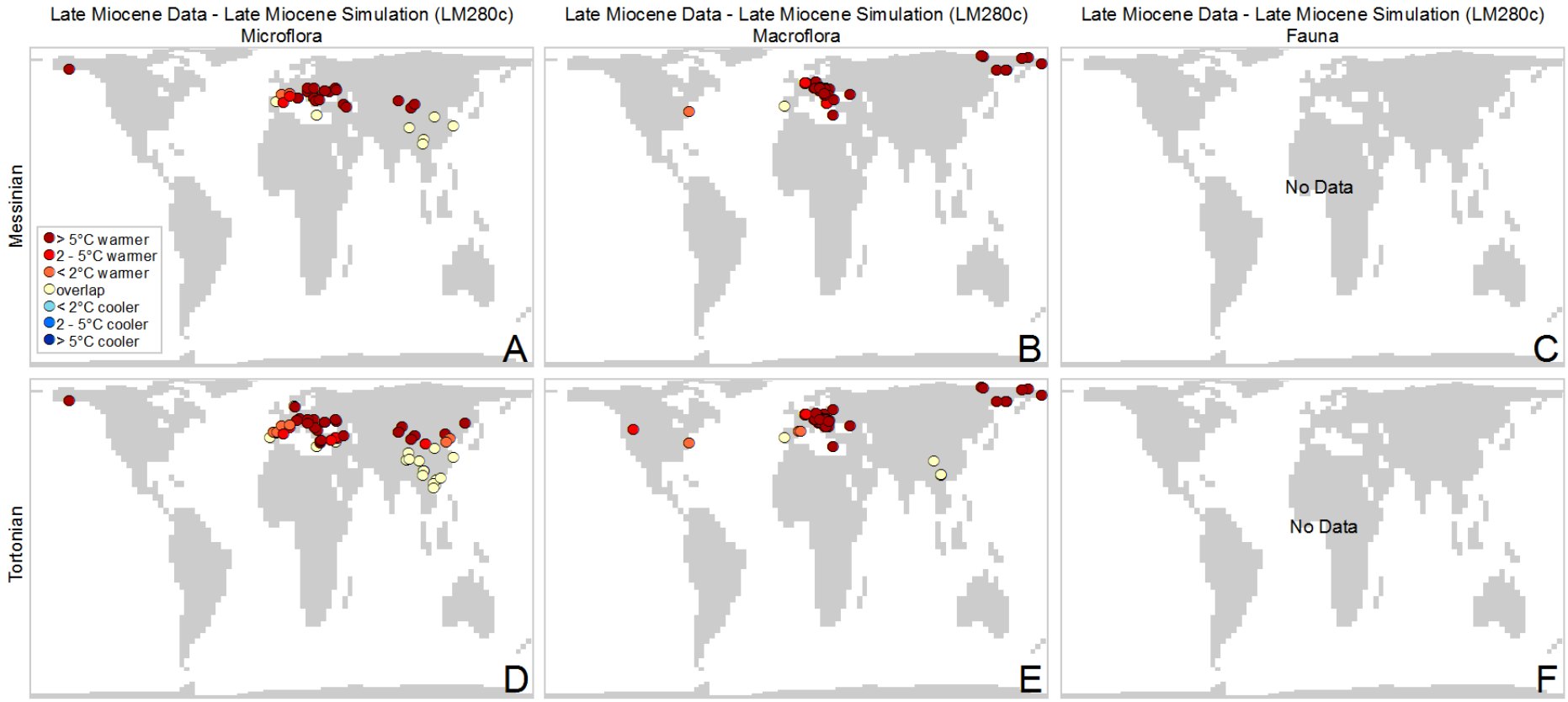

Figure S6. Results from the model-data comparison for mean warm month temperature, late Miocene data – LM280c

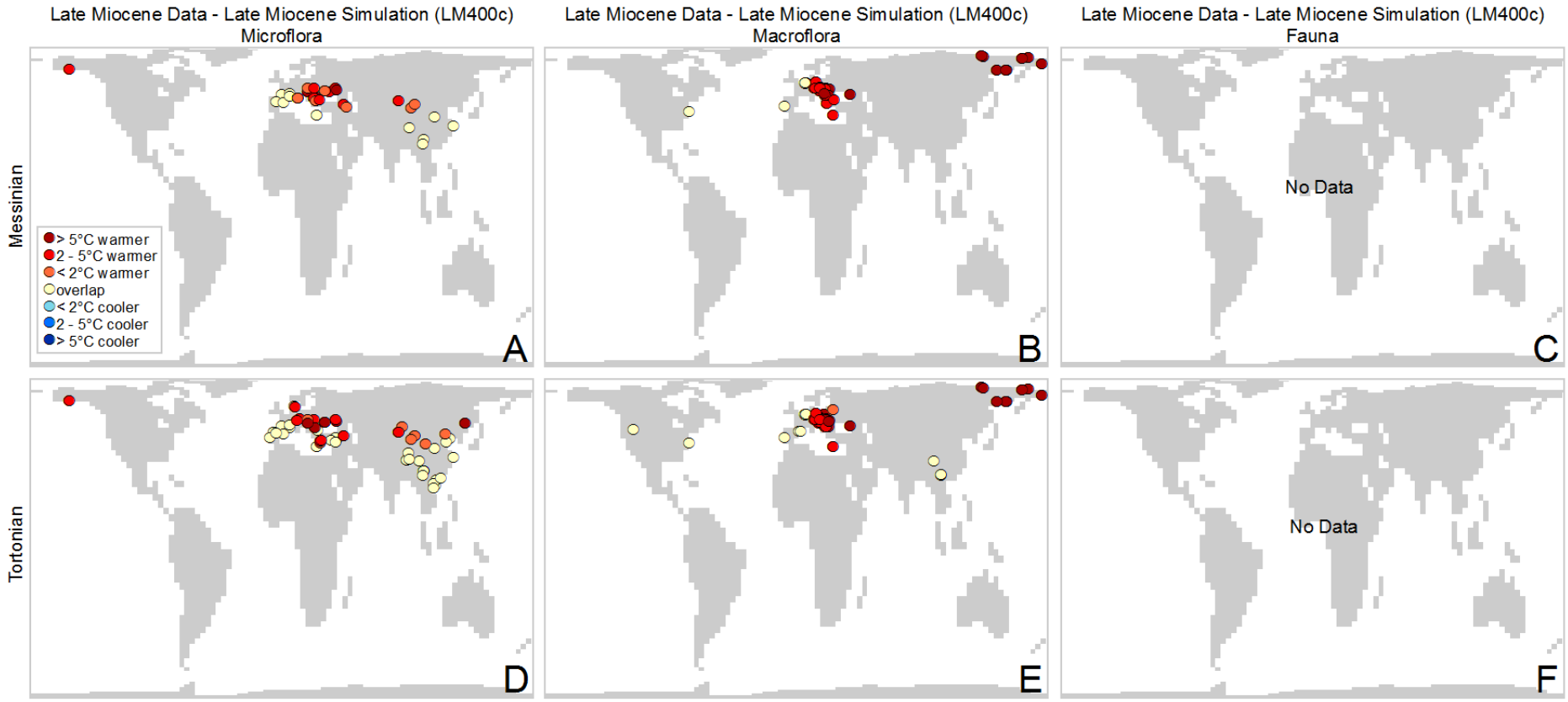

Figure S7. Results from the model-data comparison for mean warm month temperature, late Miocene data – LM400c

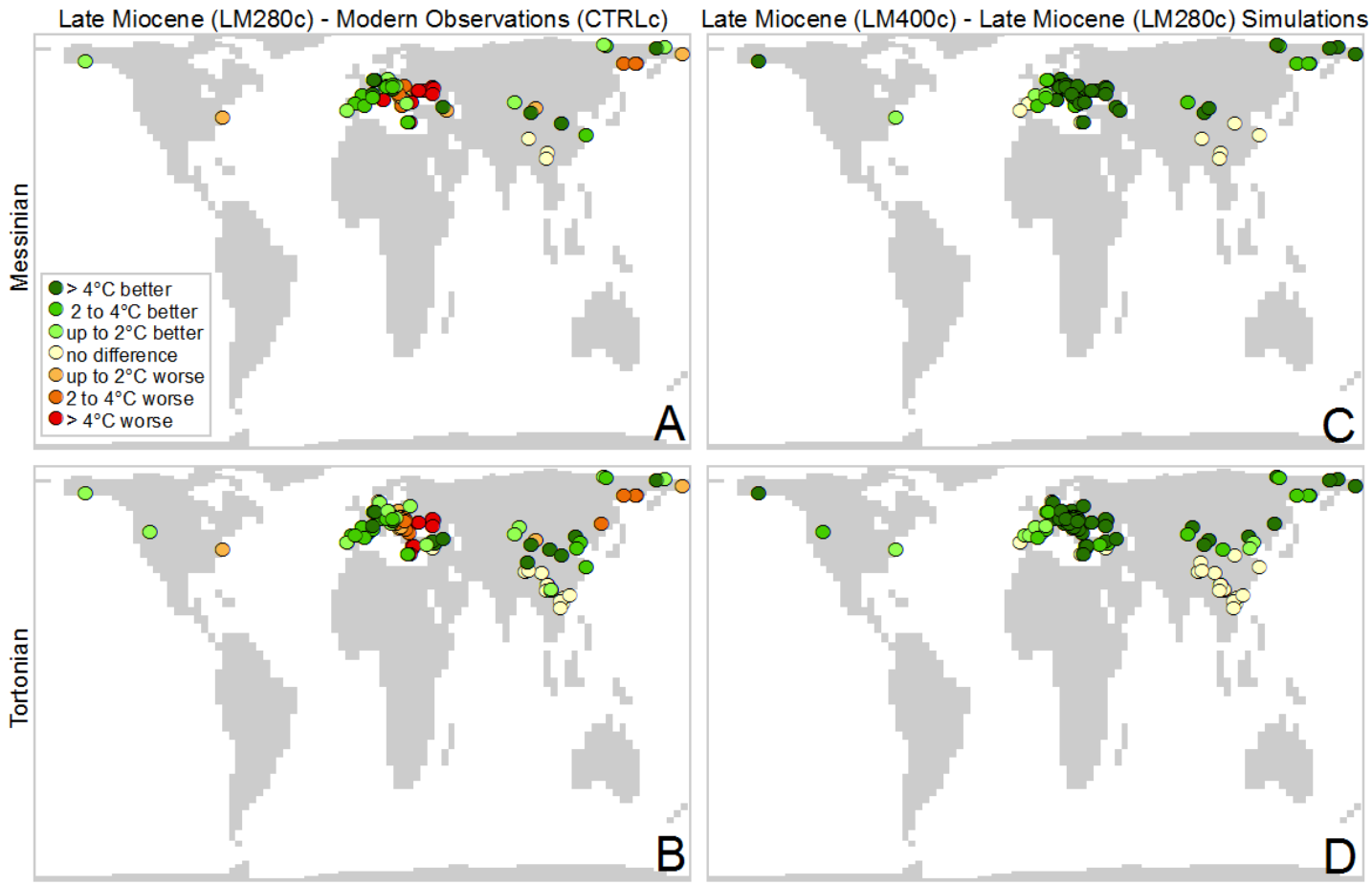

Figure S8. Improvements in the model-data comparison for mean warm month temperature. The lefthand column (A,B) shows the improvement that the late Miocene palaeogeography makes to the model-data comparison. The righthand colum (C, D) shows the improvement that higher CO_2 makes to the model-data comparison. Green circles indicate an improvement, red circles indicate a deterioration. The datapoints showing 'no difference' are plotted underneath the other datapoints in order to highlight the differences.

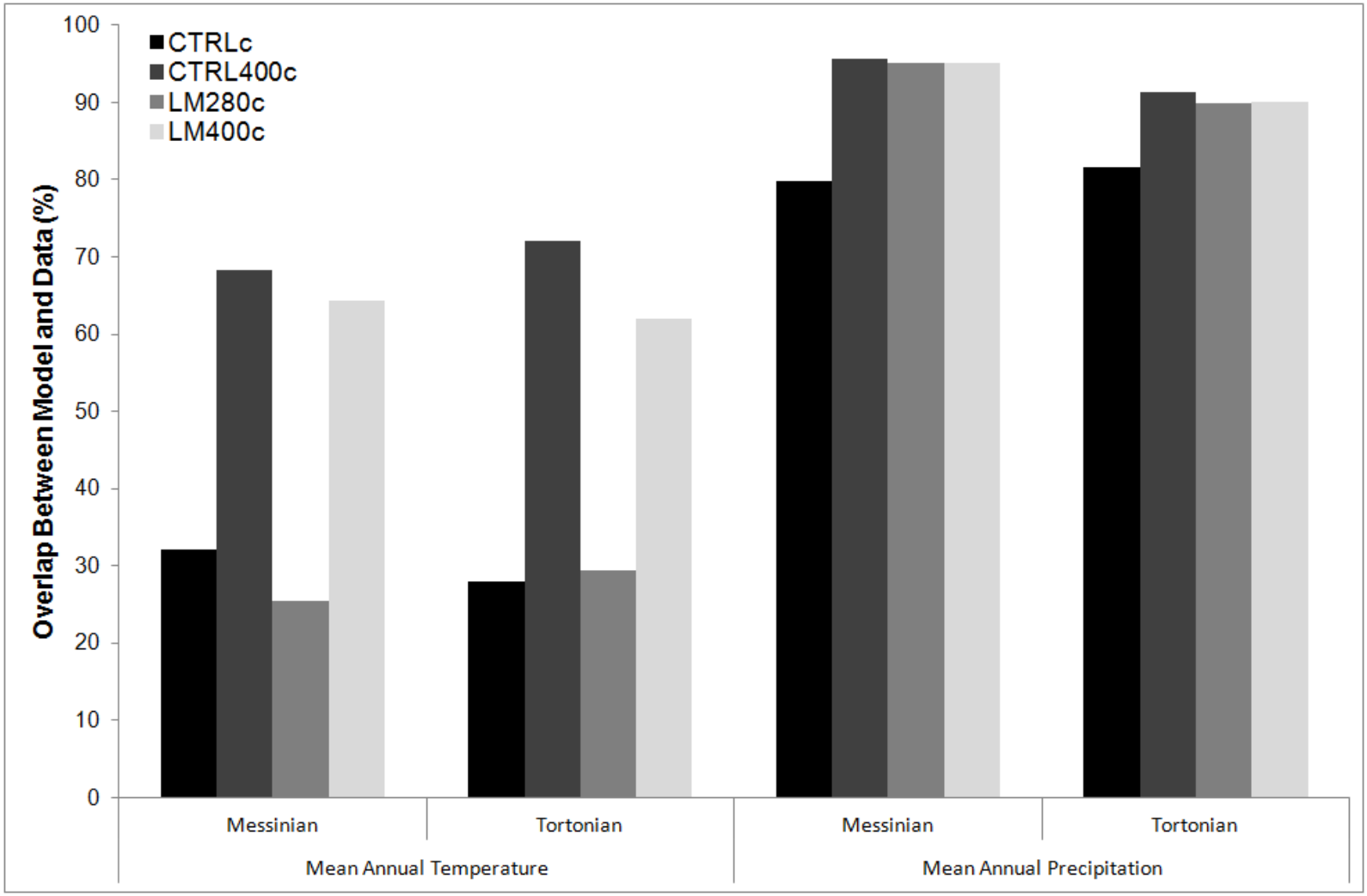

Figure S9. Model-data comparison summary for MAT and MAP including CTRL400c. Shown is the percentage of the total number of datapoints that overlap with the model results.