

Supplementary Materials for:

Effects of climate variability on tree health responses in the Black Sea and Mediterranean forests of Turkey

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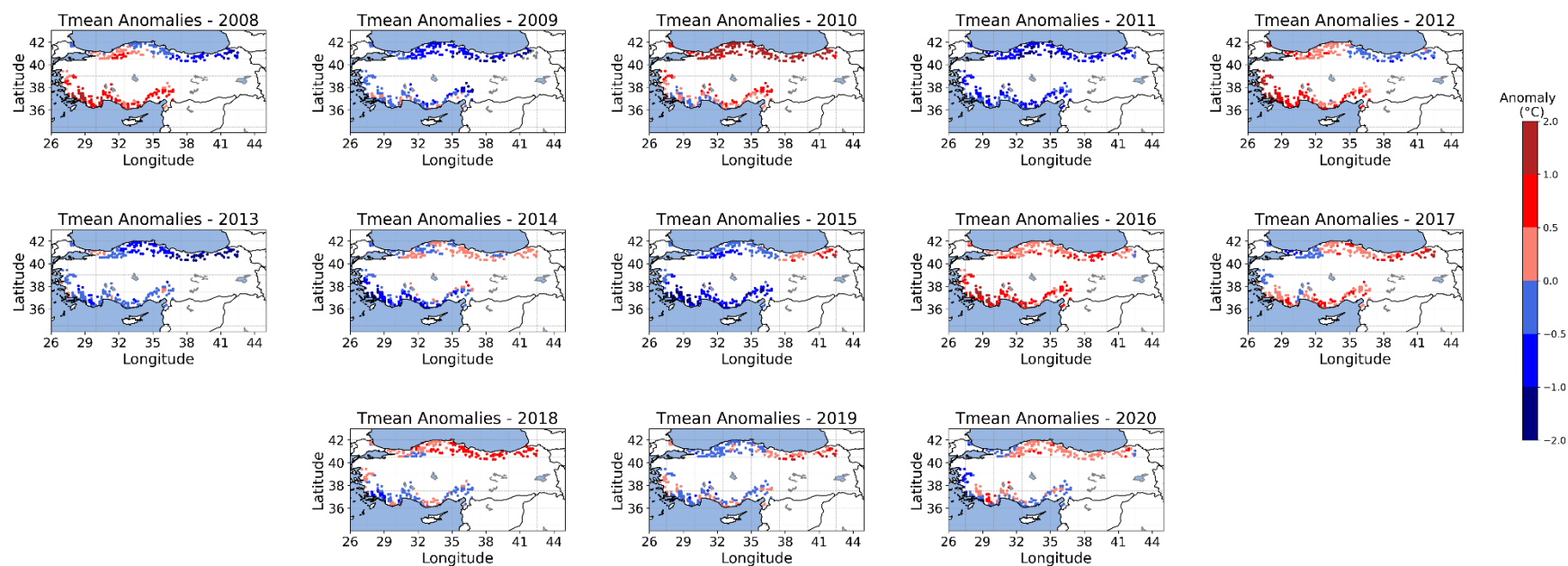


Figure S1. Tmean Anomalies of JJA for the 2008-2020 period over 277 plots ICP plots selected in the study.

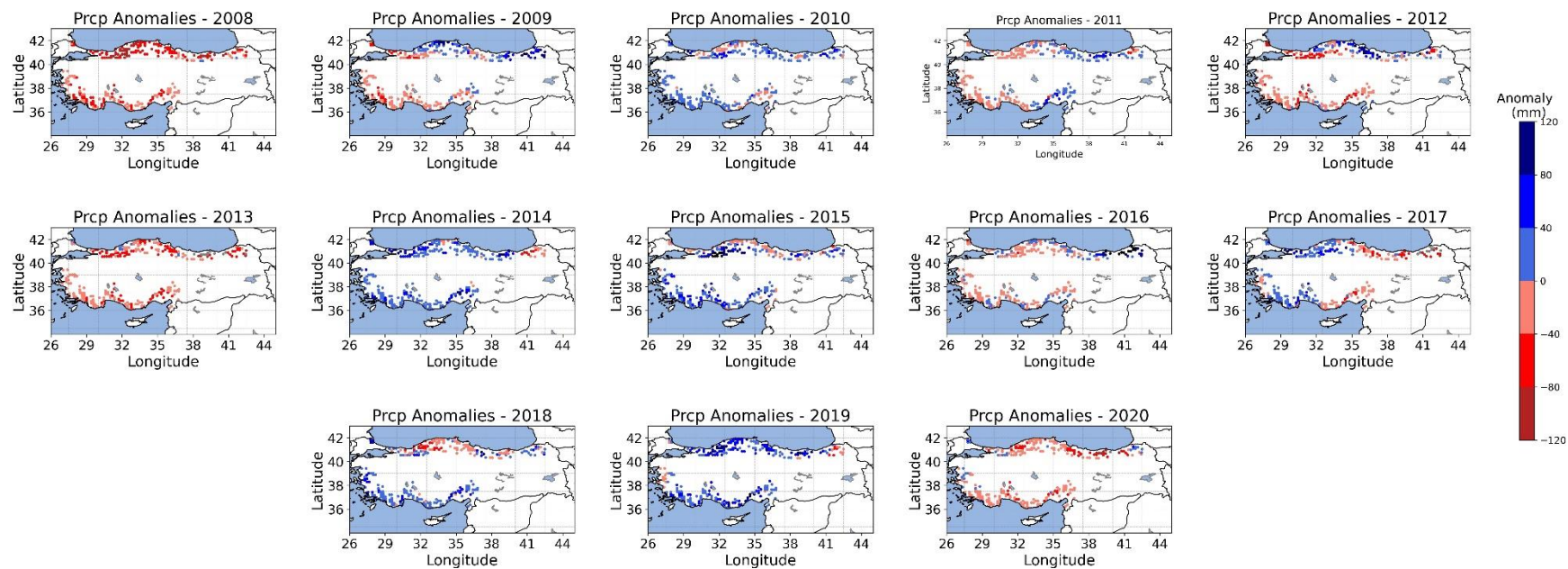


Figure S2. Total precipitation anomalies of JJA for the 2008-2020 period over 277 ICP plots selected in the study.

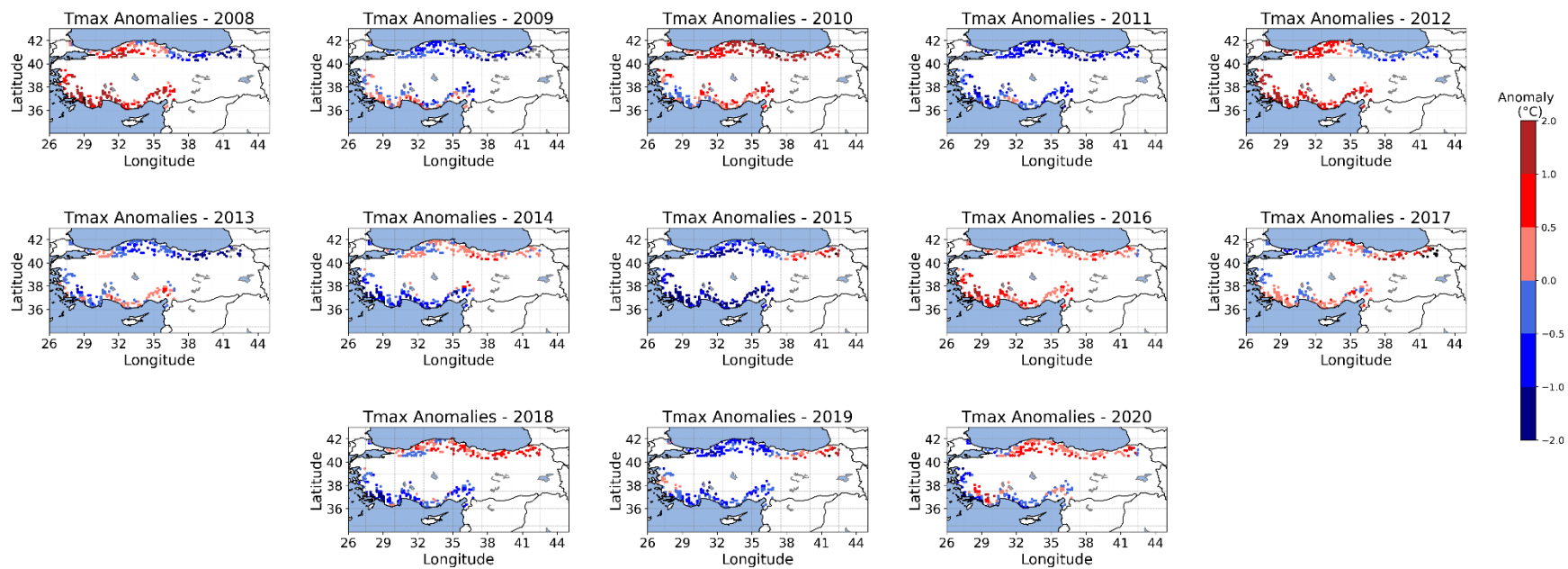


Figure S3. Tmax Anomalies of JJA for the 2008-2020 period over 277 plots.

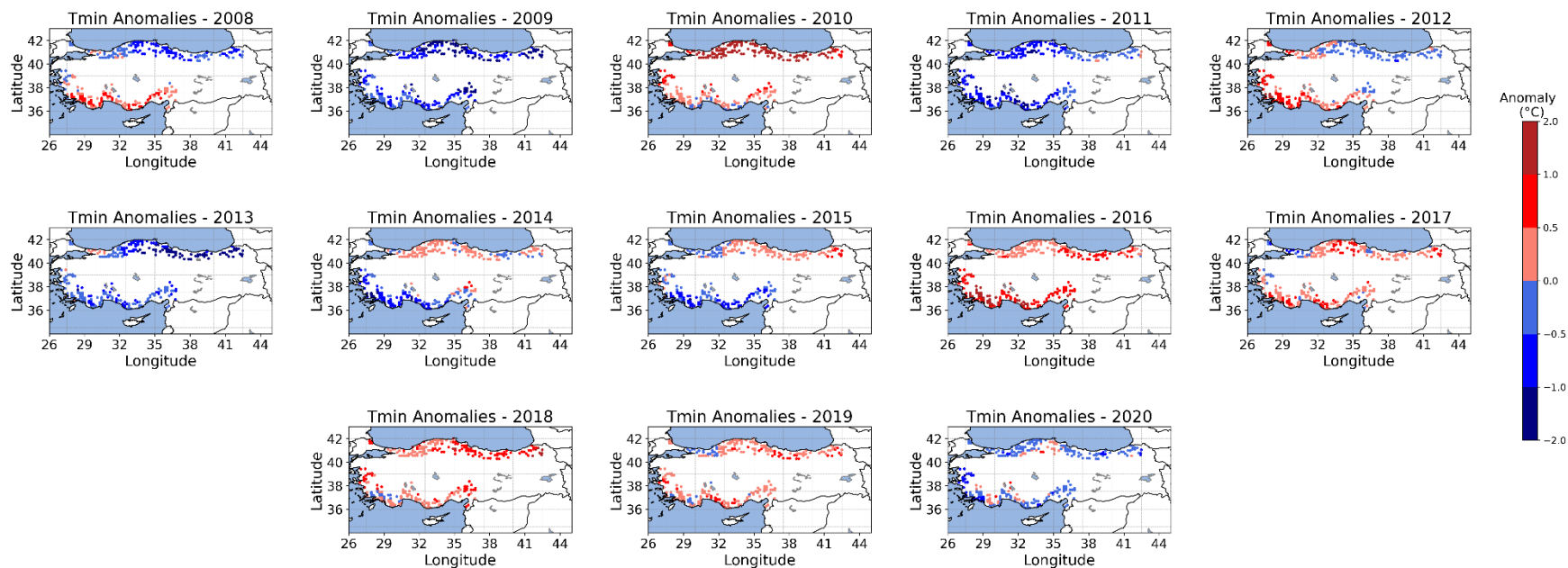


Figure S4. Tmin Anomalies of JJA for the 2008-2020 period over 277 plots.



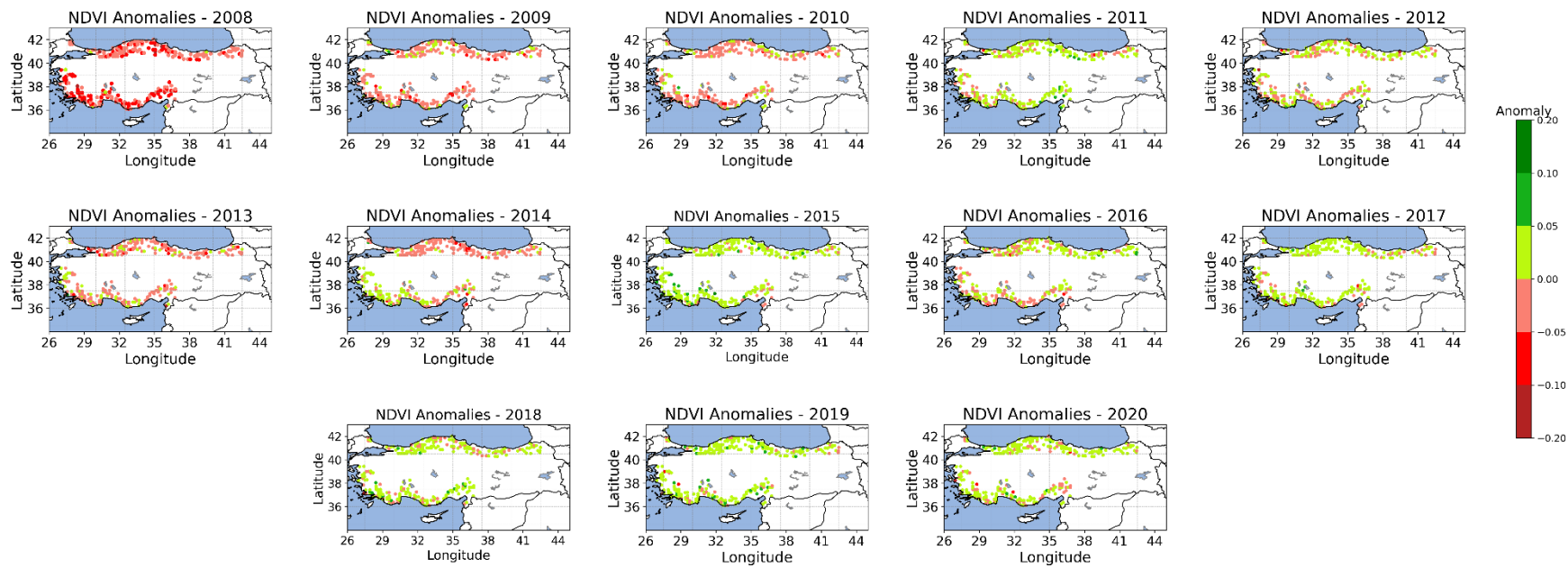


Figure S5. NDVI Anomalies of JJA for the 2008-2020 period over 277 plots.

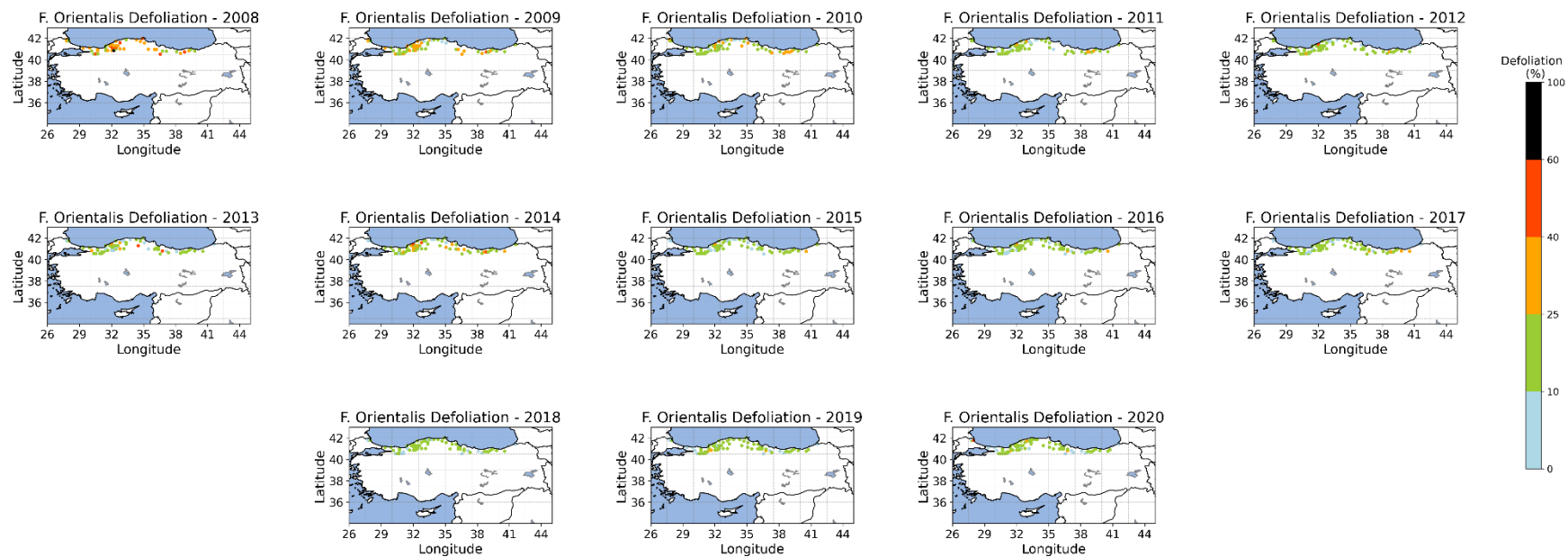


Figure S6. *Fagus Orientalis* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.

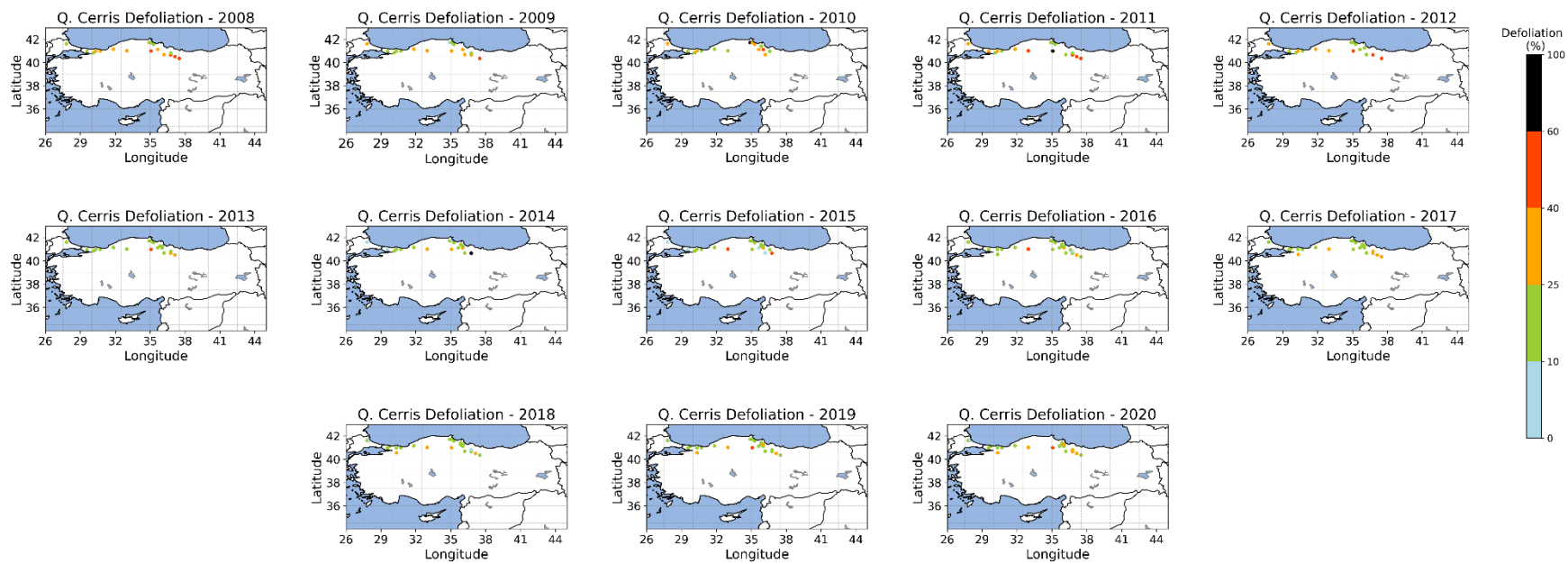


Figure S7. *Quercus Cerris* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.

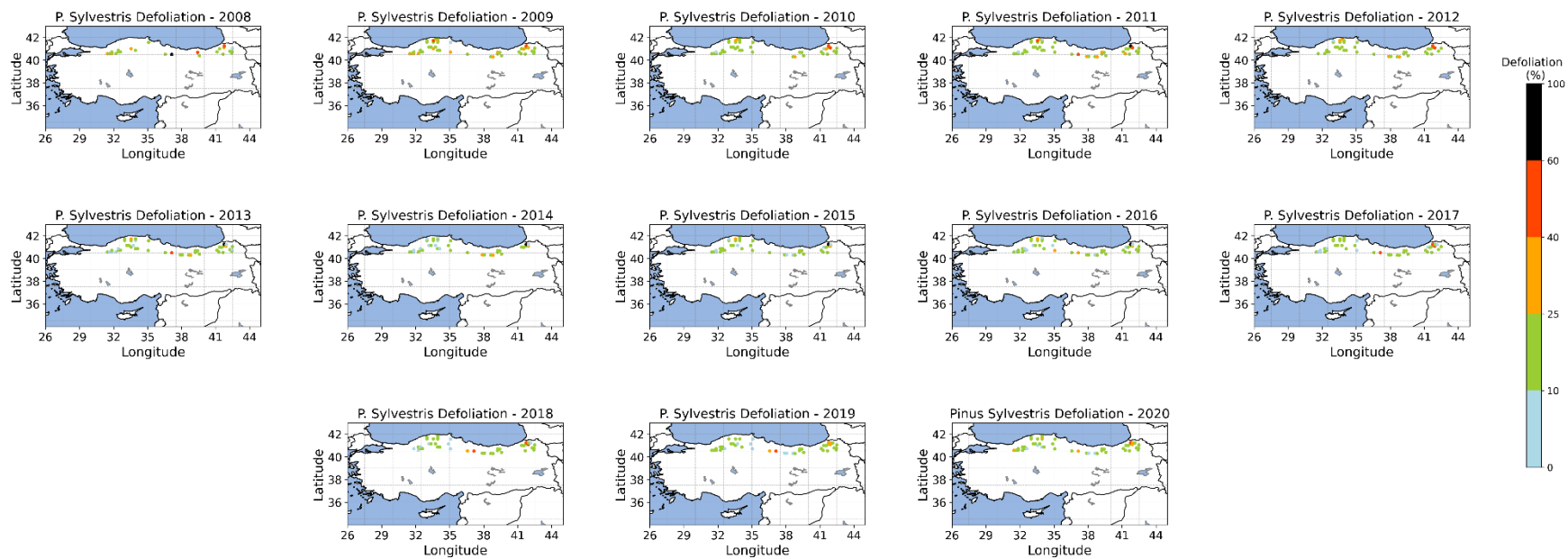


Figure S8. *Pinus Sylvestris* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.

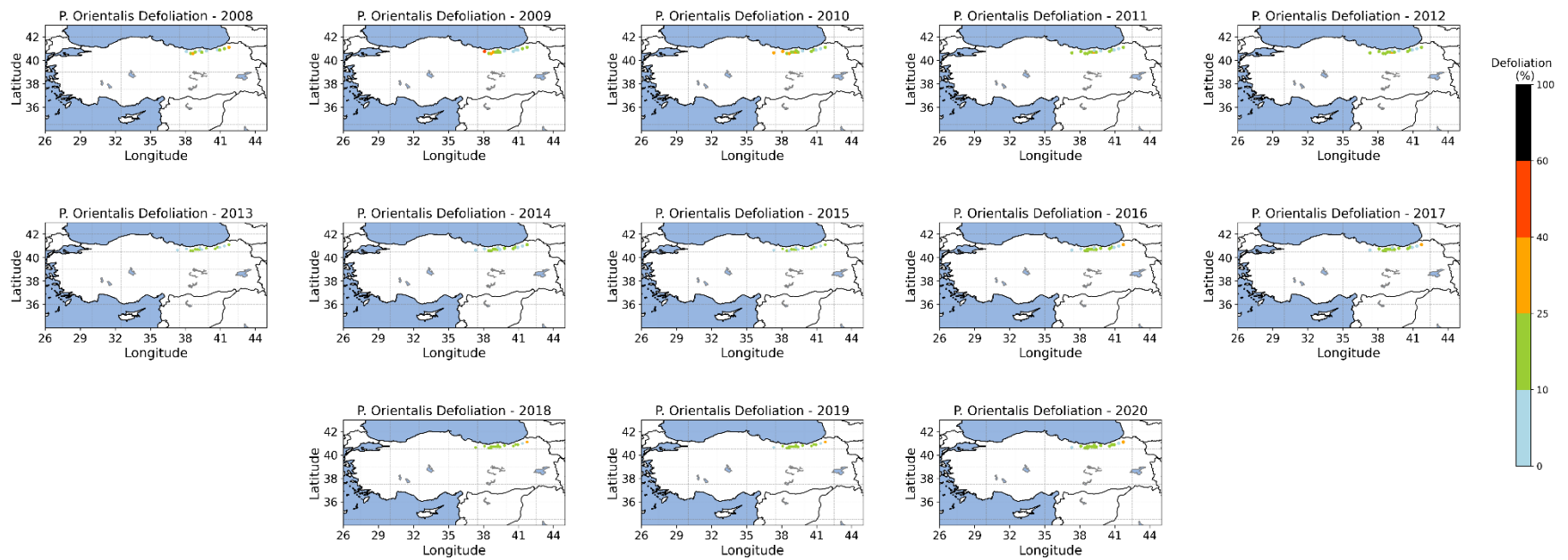


Figure S9. *Picea Orientalis* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.



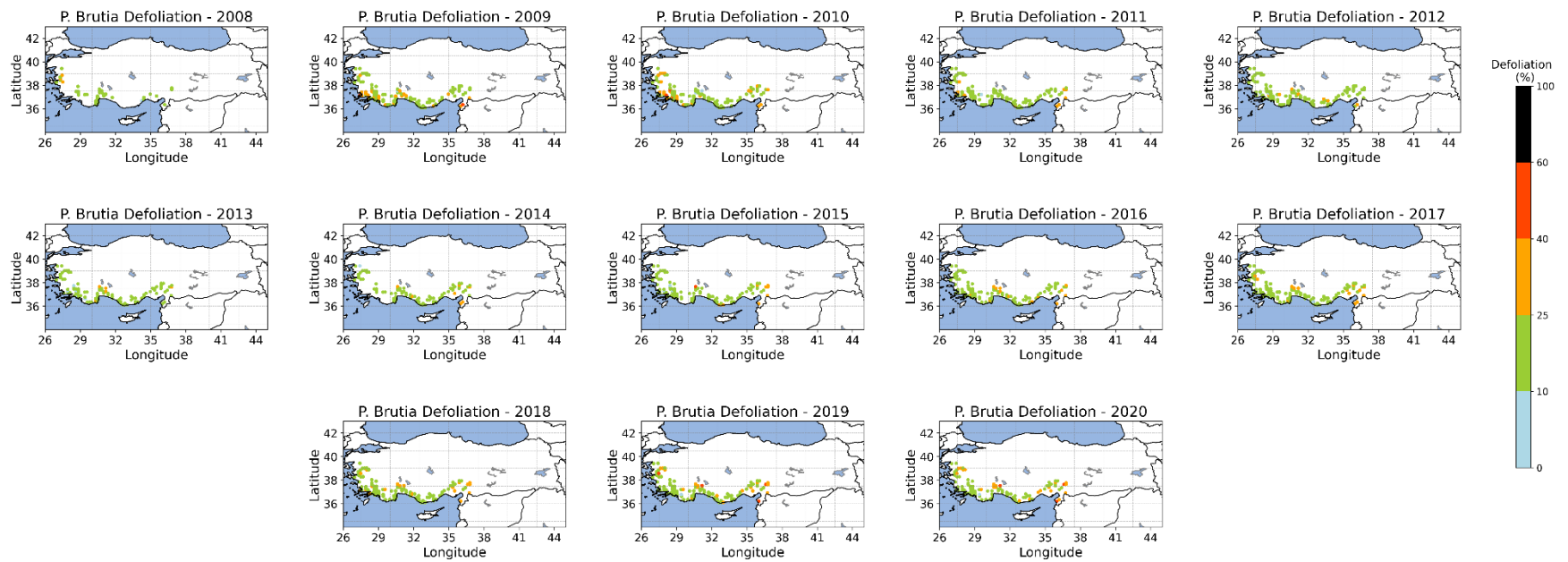


Figure S10. *Pinus Brutia* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.

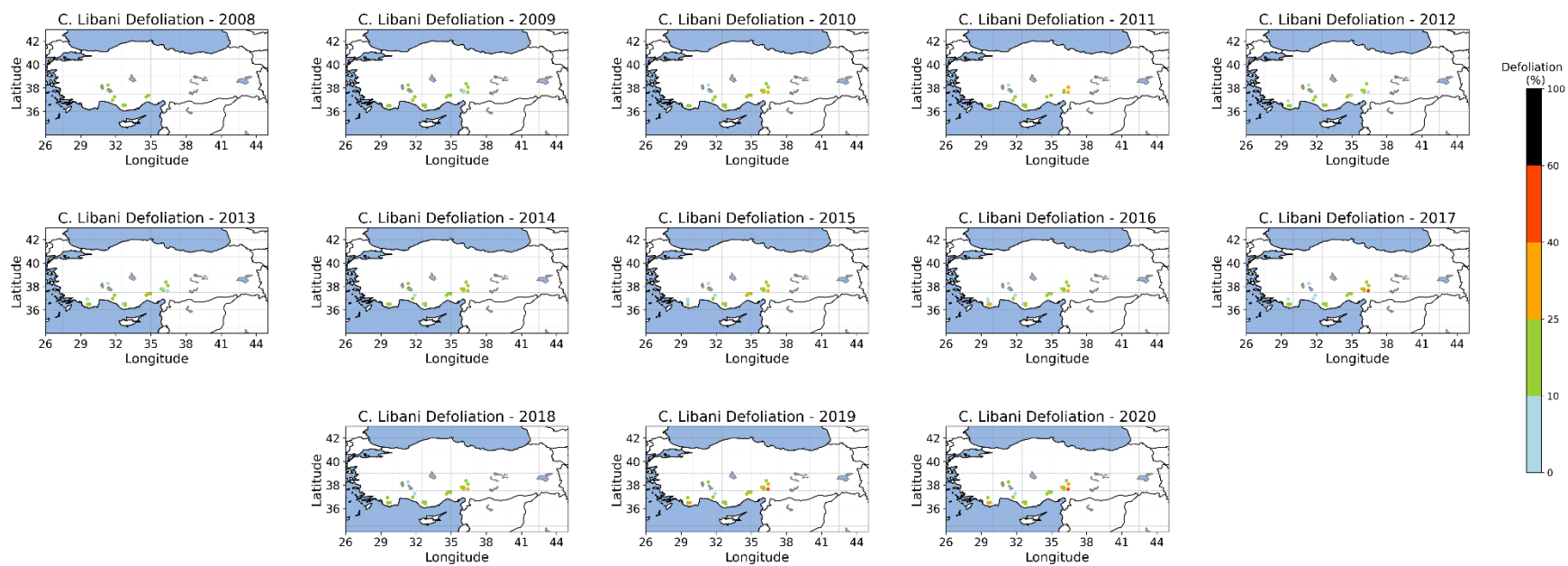


Figure S11. *Cedrus libani* mean plot defoliation of JJA for the 2008-2020 period over 277 plots.



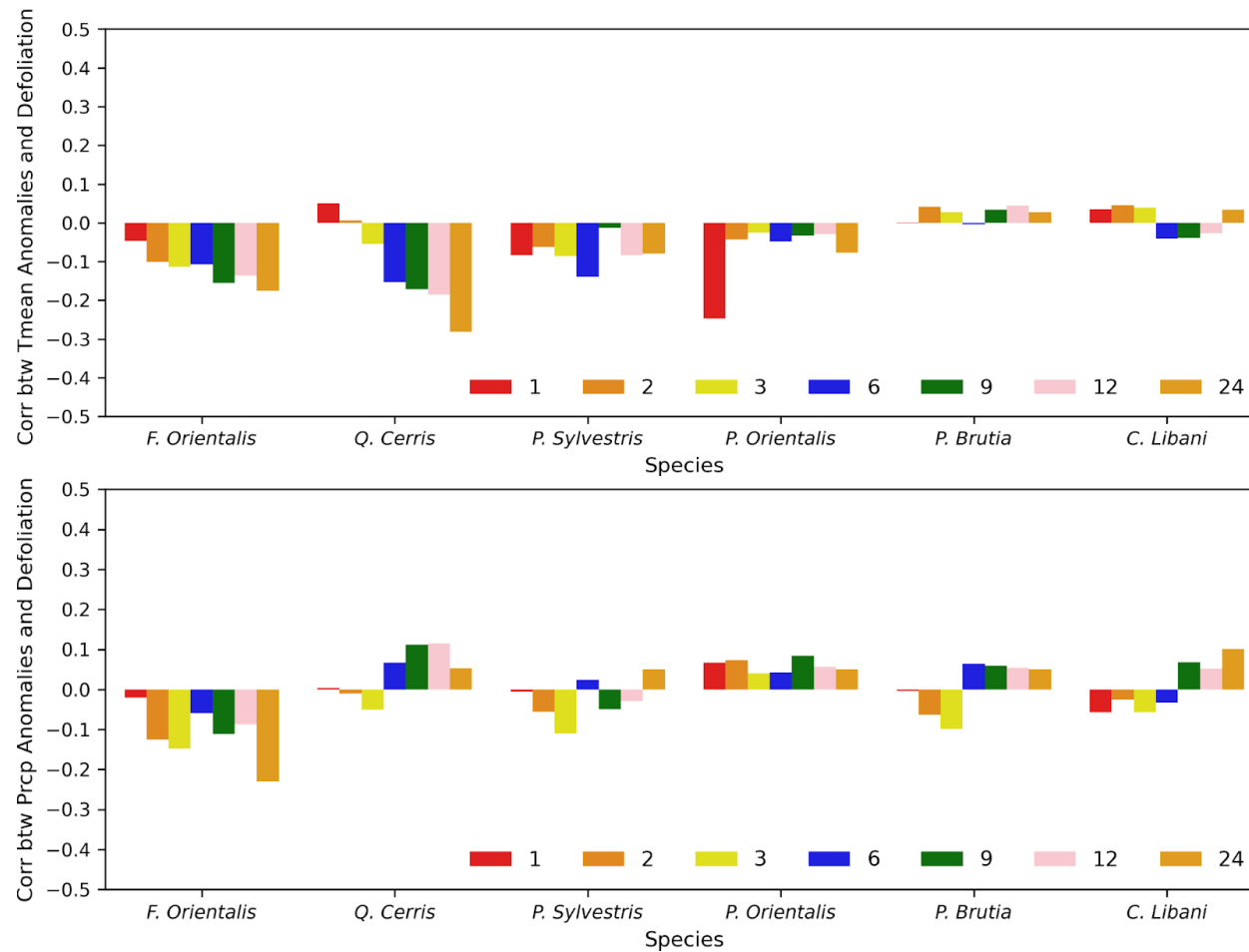


Figure S12. Pearson Correlations Coefficient ( $r$ ) between climate variables and *NDVI* for 1, 2, 3, 6, 9, 12, 24 window back months (the windows are calculated from the day the defoliation is measured) from each year JJA months based on tree species located on the plots used for the 2008-2020 period.

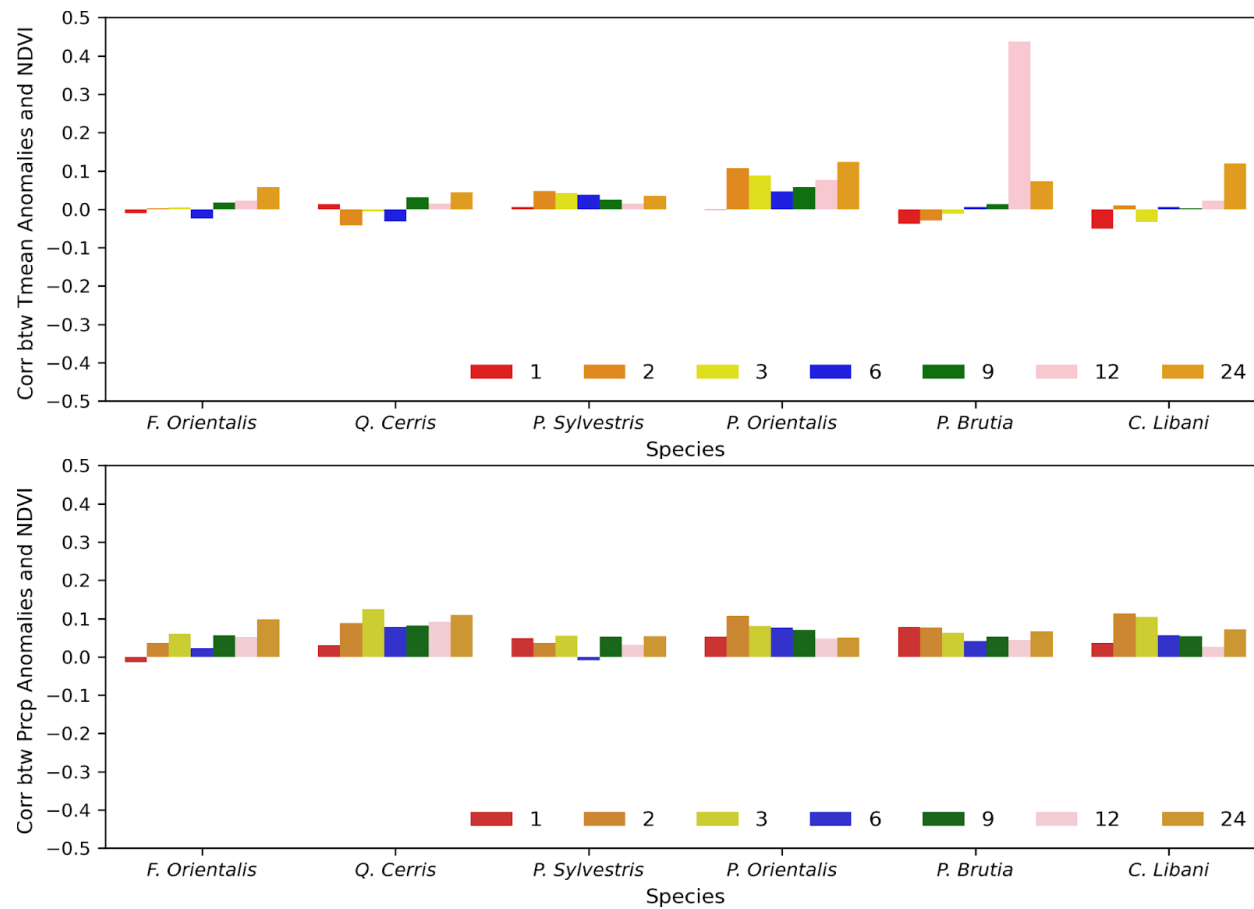


Figure S13. Pearson Correlations Coefficient ( $r$ ) between climate variables and *NDVI* for 1, 2, 3, 6, 9, 12, 24 window back months (the windows are calculated from the day the defoliation is measured) from each year JJA months based on tree species located on the plots used for the 2008-2020 period.



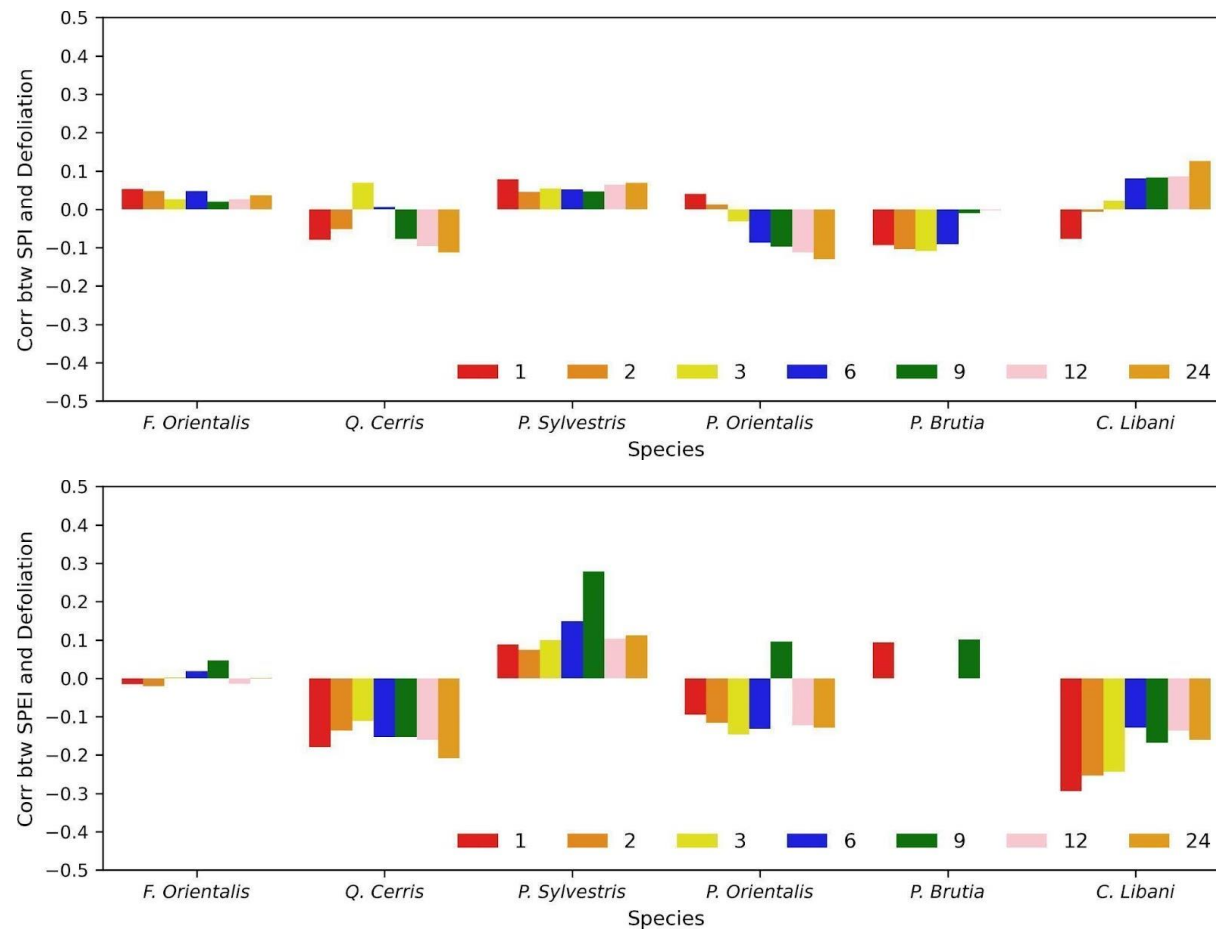


Figure S14. Pearson Correlations Coefficient (r) between drought indices and defoliation for 1, 2, 3, 6, 9, 12, 24 window back months (the windows are calculated from the day the defoliation is measured) for each year based on tree species located on the plots used for the 2008-2020 period.

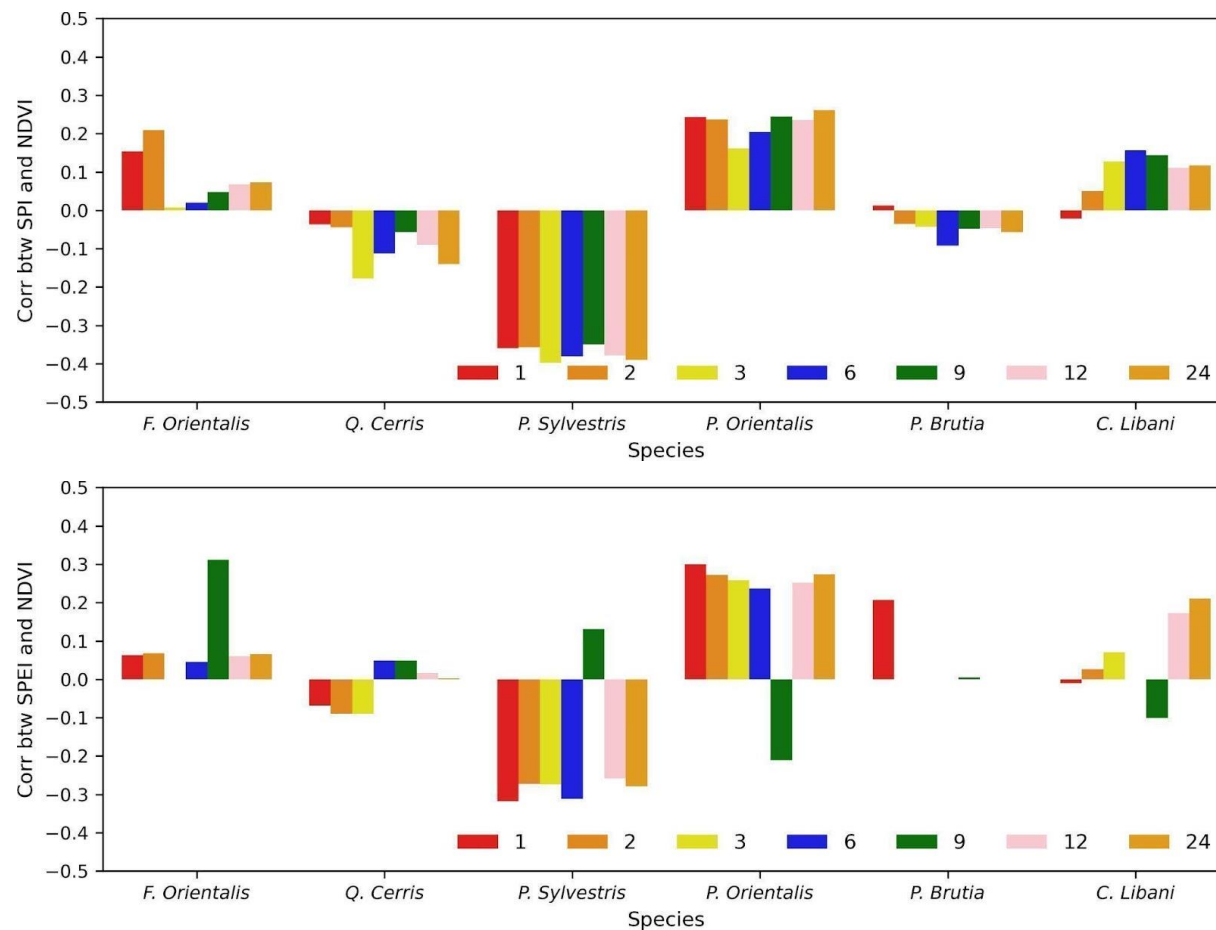


Figure S15. Pearson Correlations Coefficient (r) between drought indices and NDVI for 1, 2, 3, 6, 9, 12, 24 window back months (the windows are calculated from the day the defoliation is measured) for each year based on tree species located on the plots used for the 2008-2020 period.

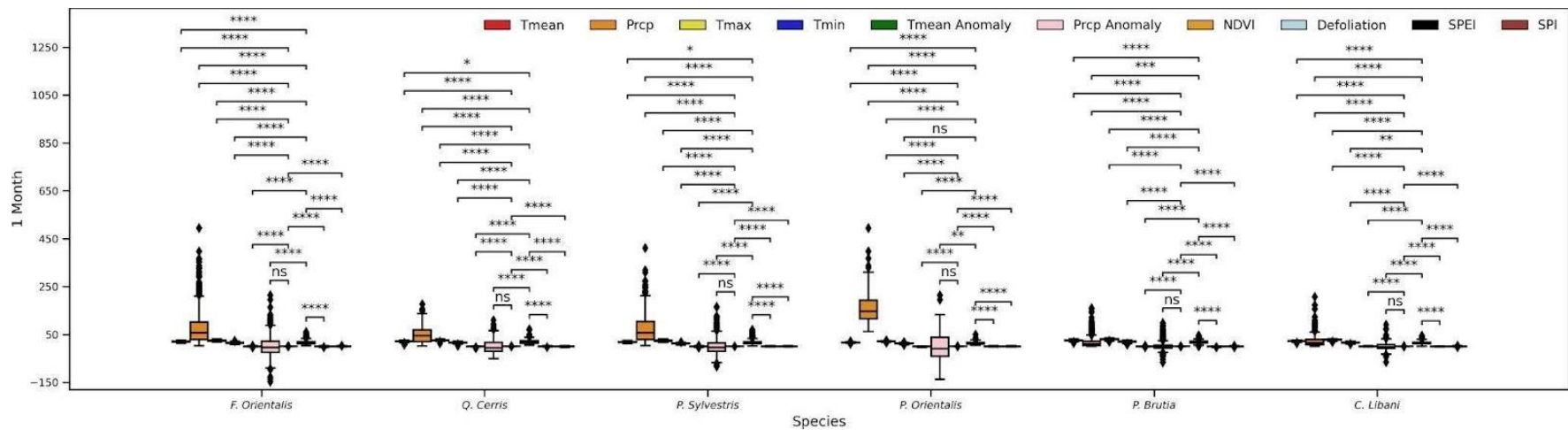


Figure S16. Statistical significance level of 1 month back from the defoliation date for all parameters for the 2008-2020 period

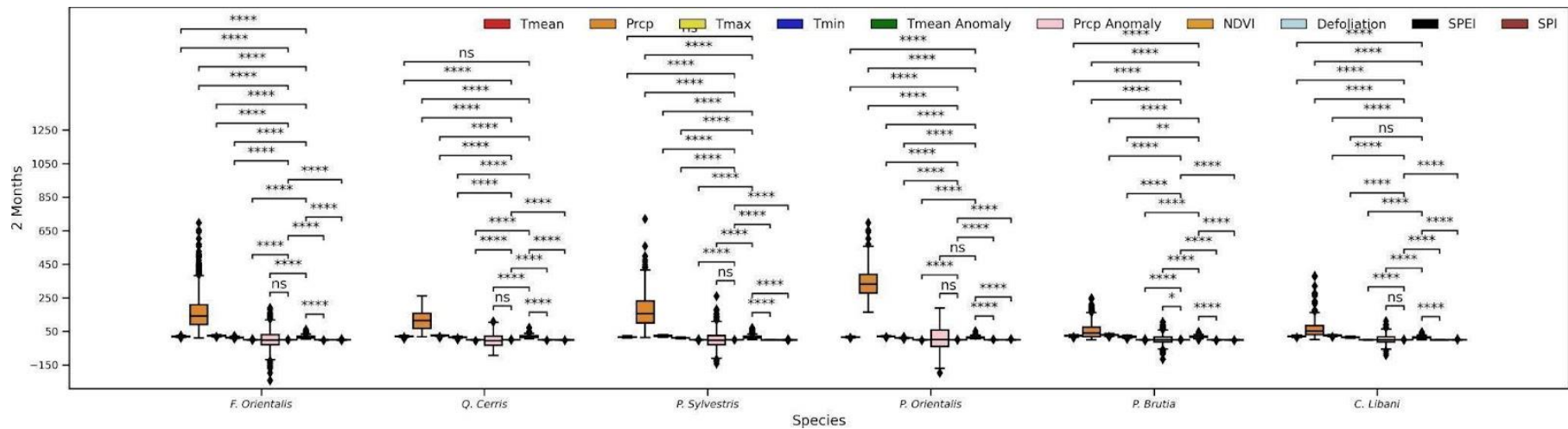


Figure S17. Statistical significance level of 2 months back from the defoliation date for all parameters for the 2008-2020 period

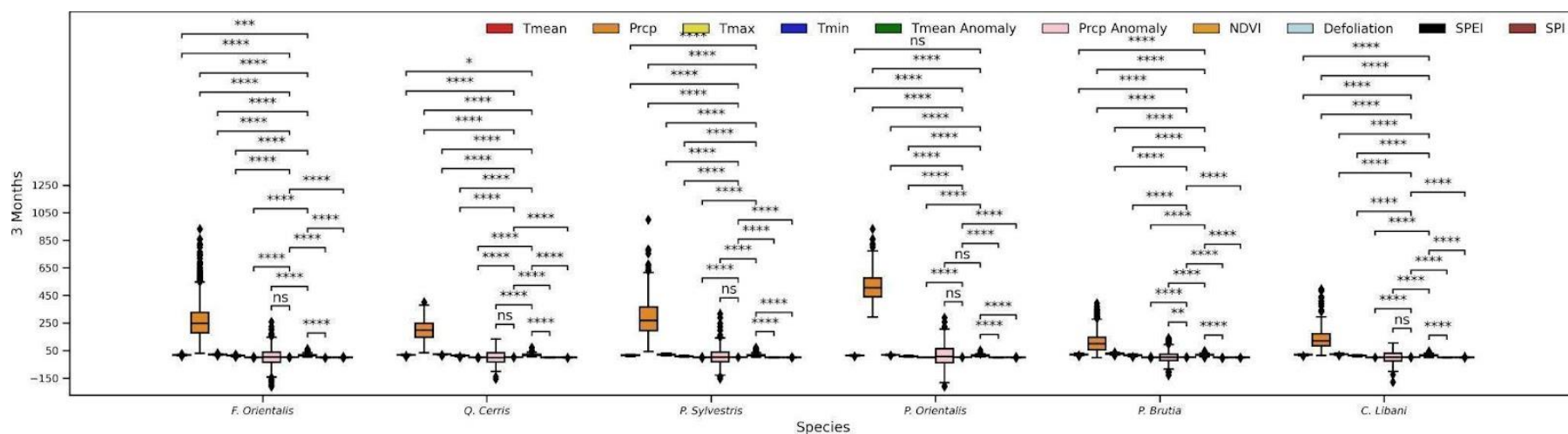


Figure S18. Statistical significance level of 3 months back from the defoliation date for all parameters for the 2008-2020 period

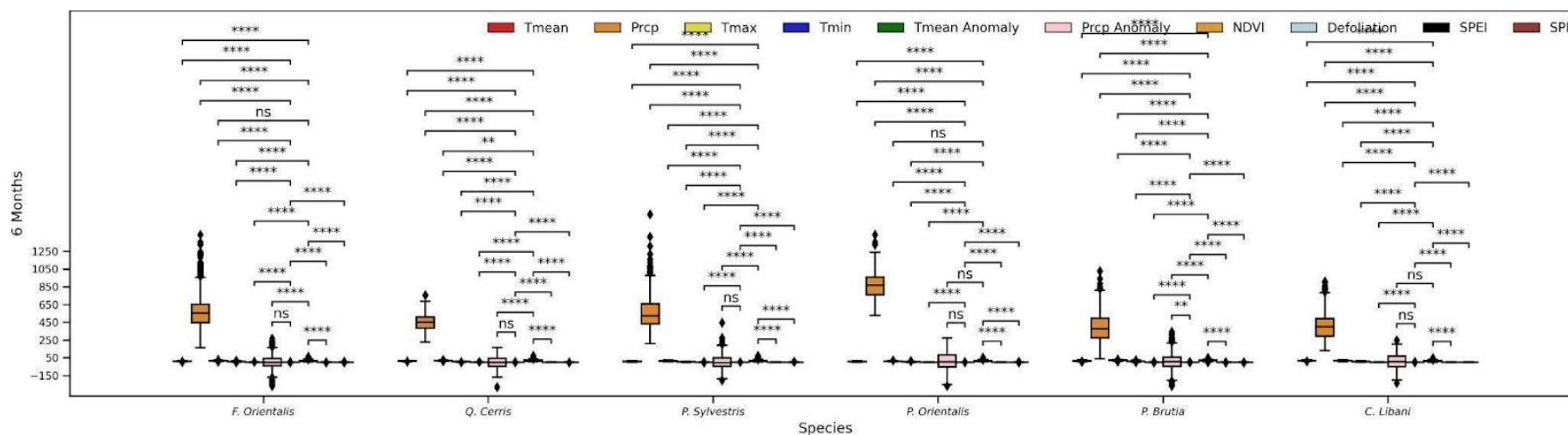


Figure S19. Statistical significance level of 6 months back from the defoliation date for all parameters for the 2008-2020 period

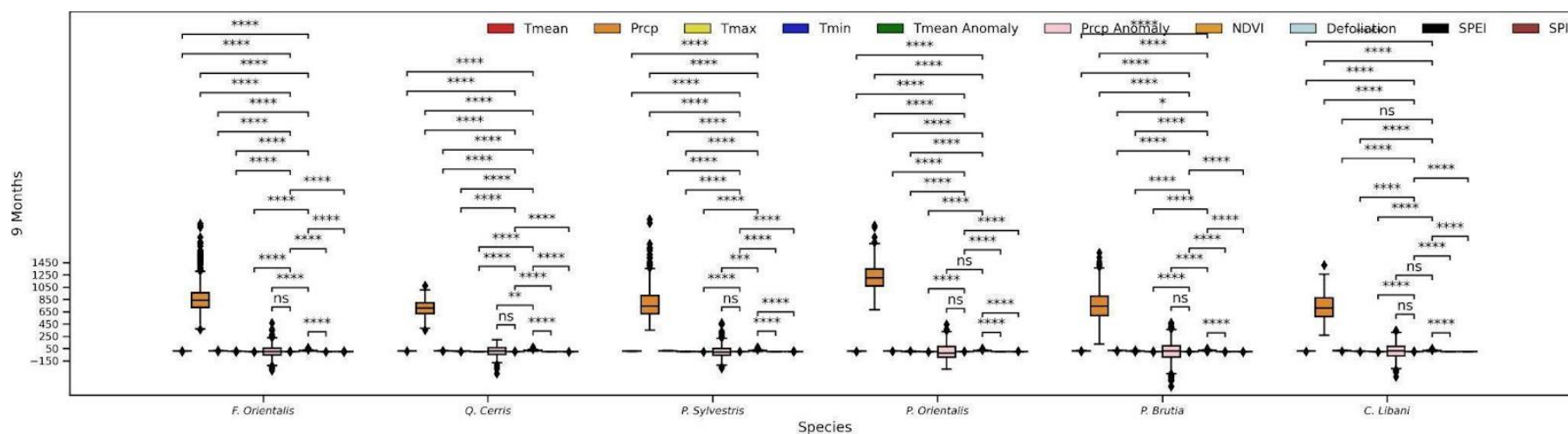


Figure S20. Statistical significance level of 9 months back from the defoliation date for all parameters for the 2008-2020 period

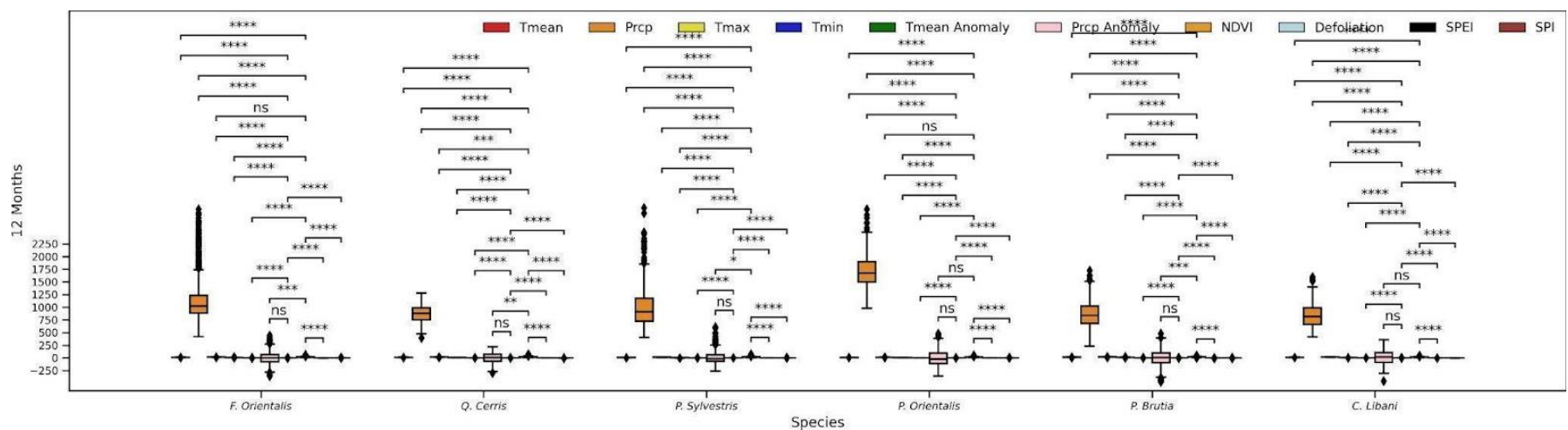


Figure S21. Statistical significance level of 12 months back from the defoliation date for all parameters for the 2008-2020 period



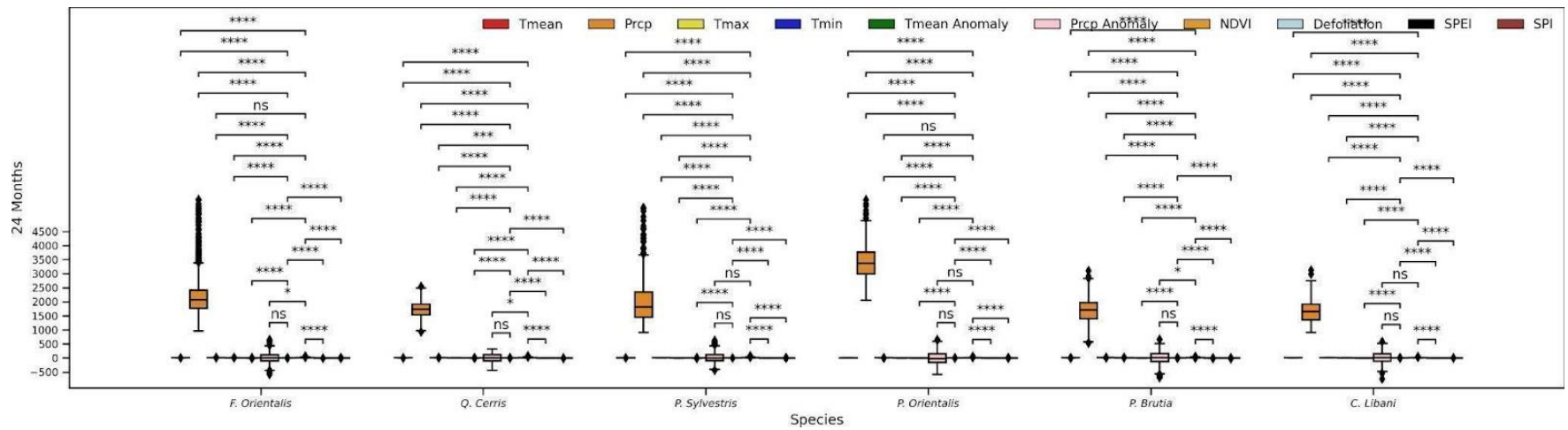


Figure S22. Statistical significance level of 24 month back from the defoliation date for all parameters for the 2008-2020 period

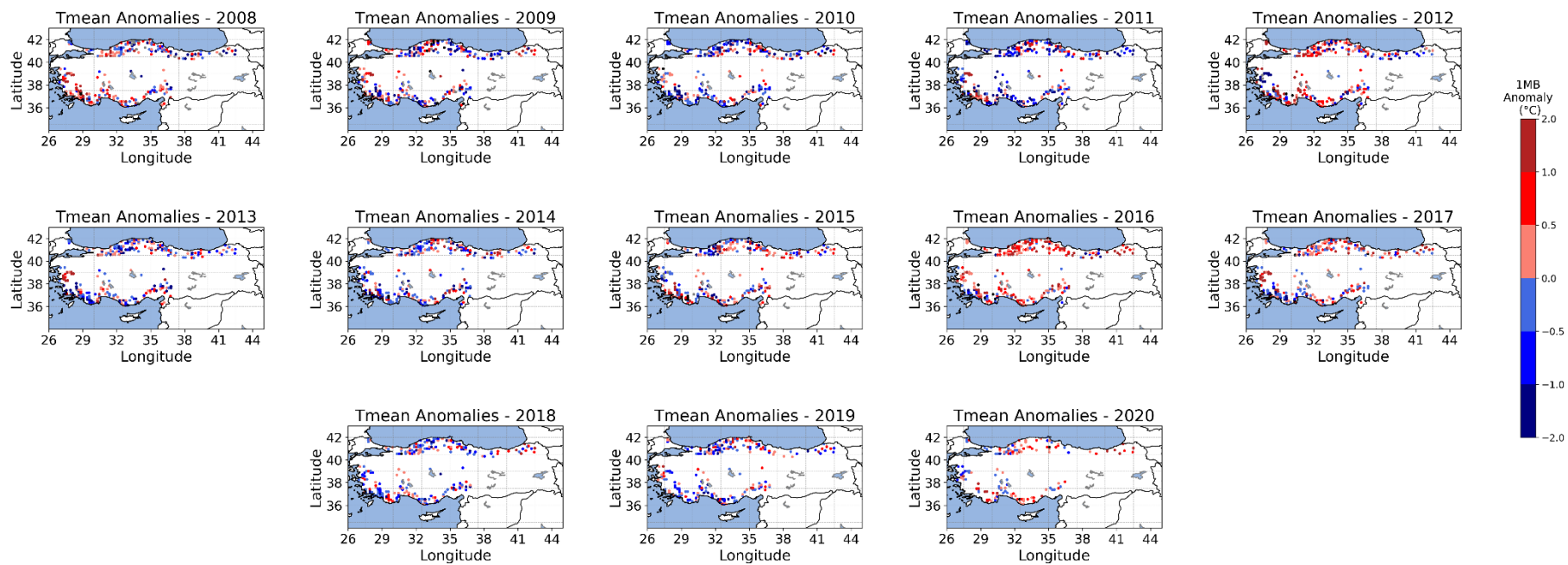


Figure S23. 1 month back Tmean anomalies for the 277 plots for the period 2008-2020

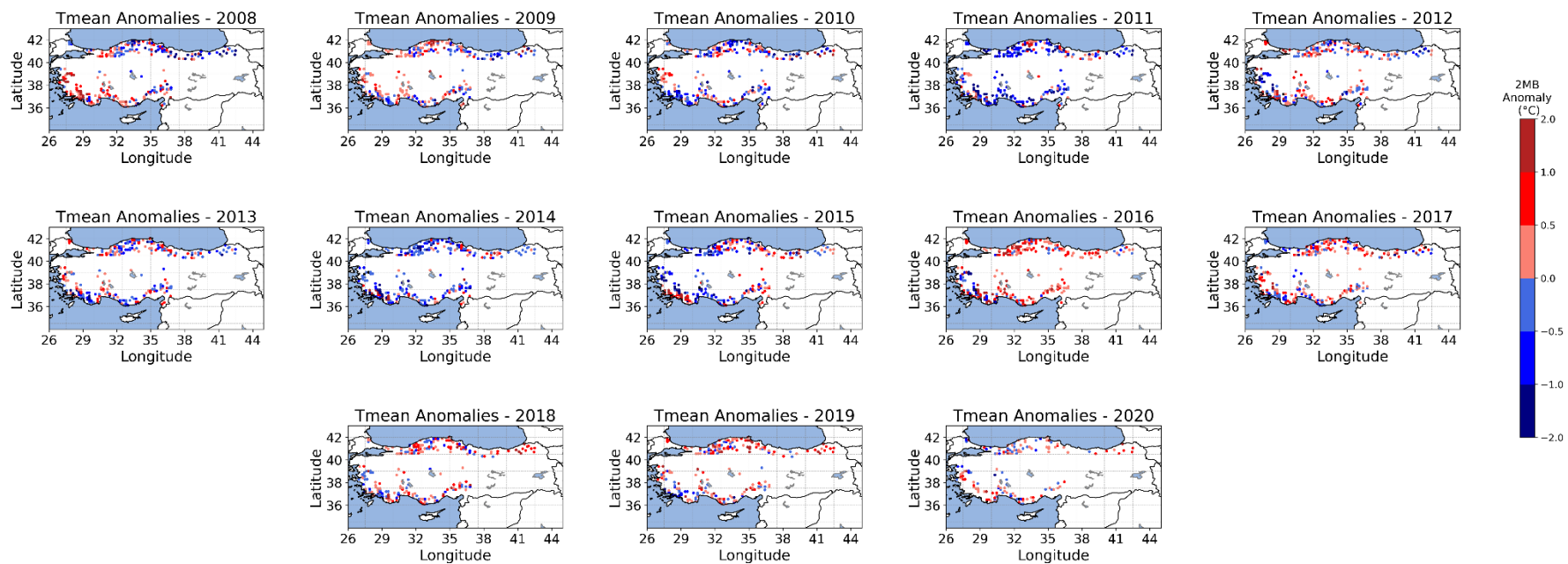


Figure S24. 2 months back Tmean anomalies for the 277 plots for the period 2008-2020

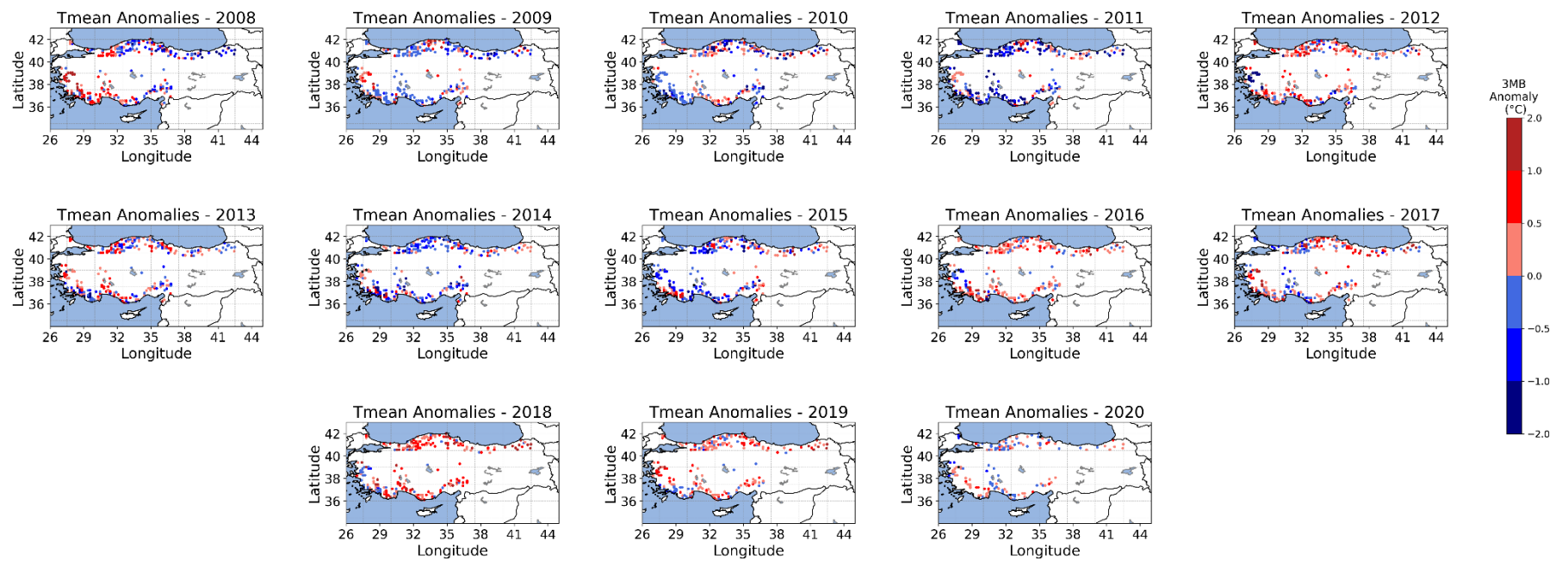


Figure S25. 3 months back Tmean anomalies for the 277 plots for the period 2008-2020

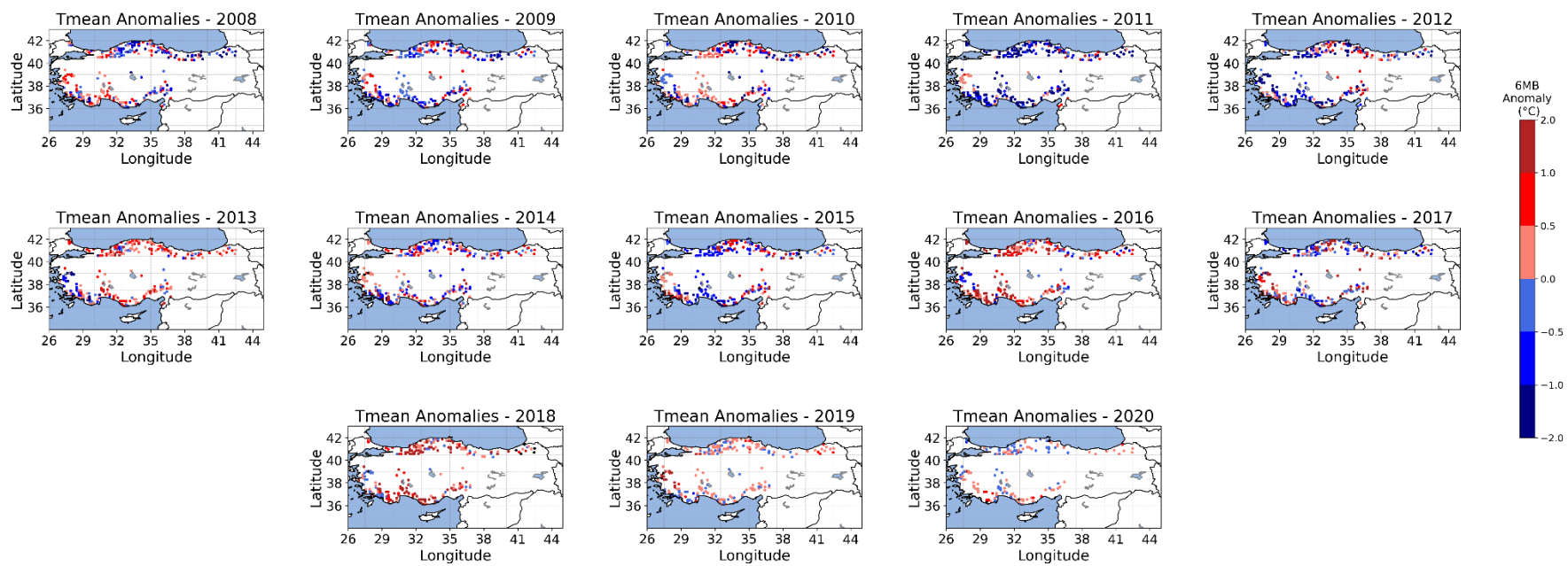


Figure S26. 6 months back Tmean anomalies for the 277 plots for the period 2008-2020



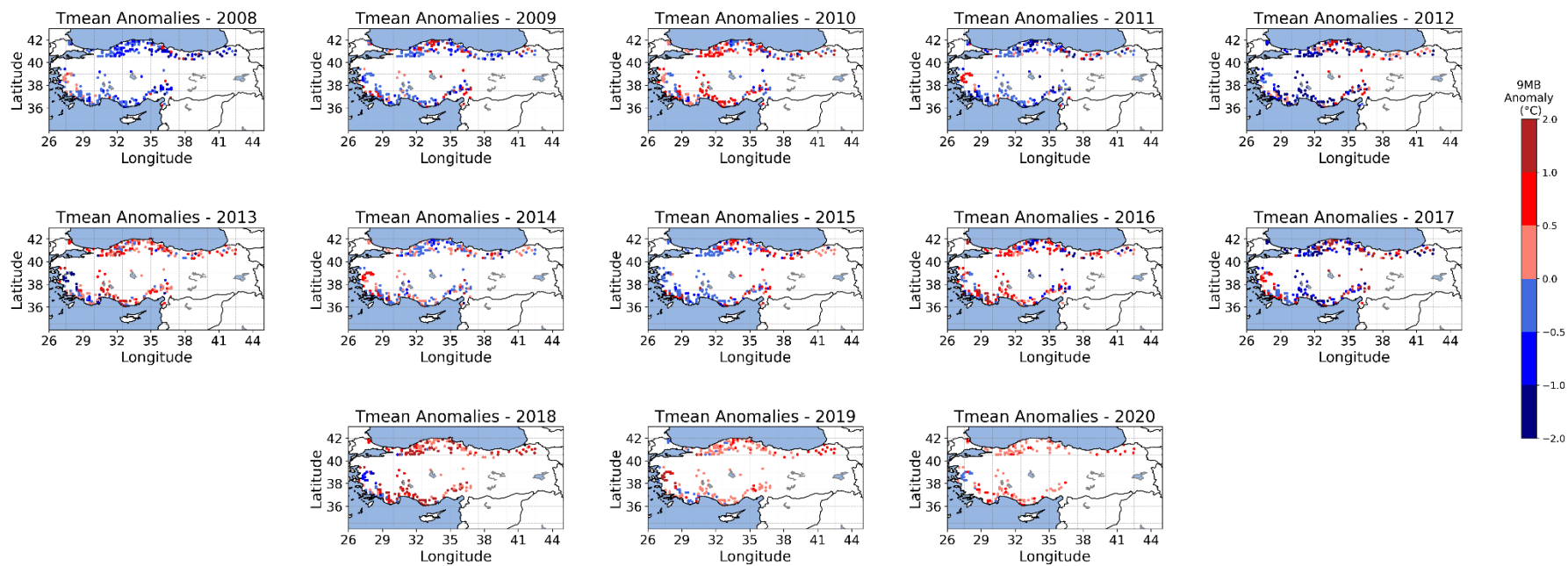


Figure S27. 9 months back Tmean anomalies for the 277 plots for the period 2008-2020

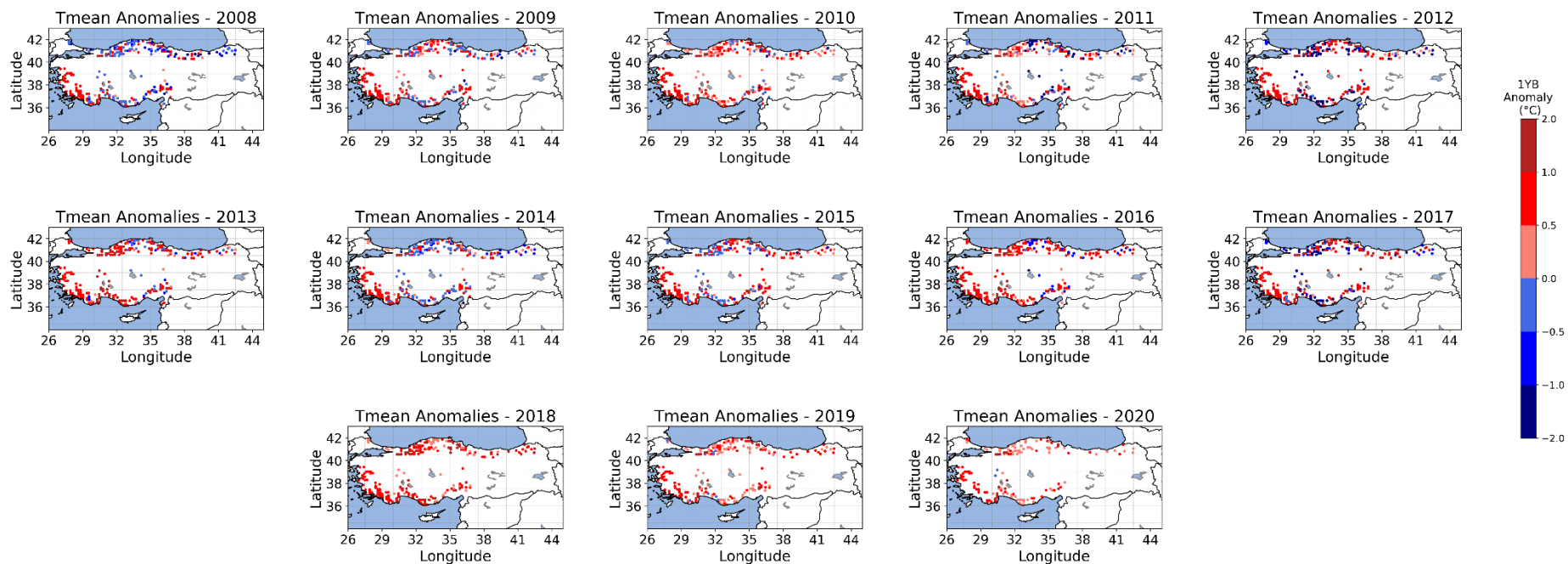


Figure S28. 12 months back Tmean anomalies for the 277 plots for the period 2008-2020

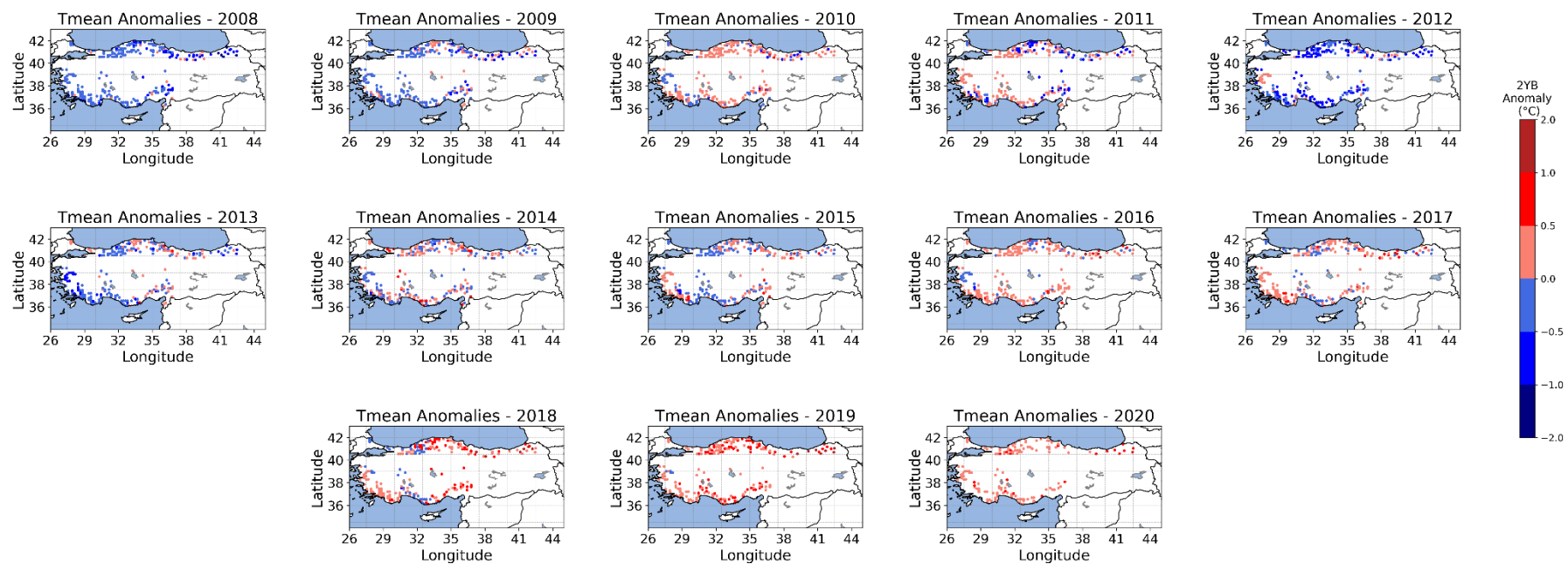


Figure S29. 24 months back Tmean anomalies for the 277 plots for the period 2008-2020

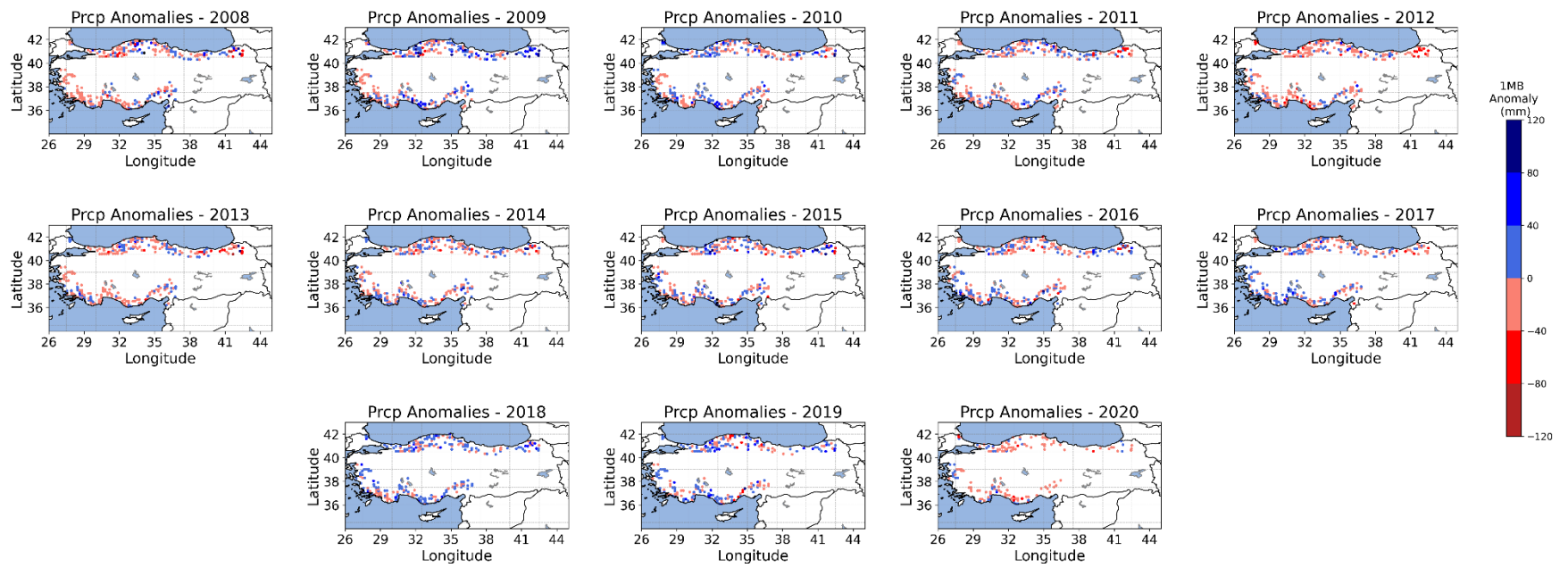


Figure S30. 1 month back Prcp anomalies for the 277 plots for the period 2008-2020

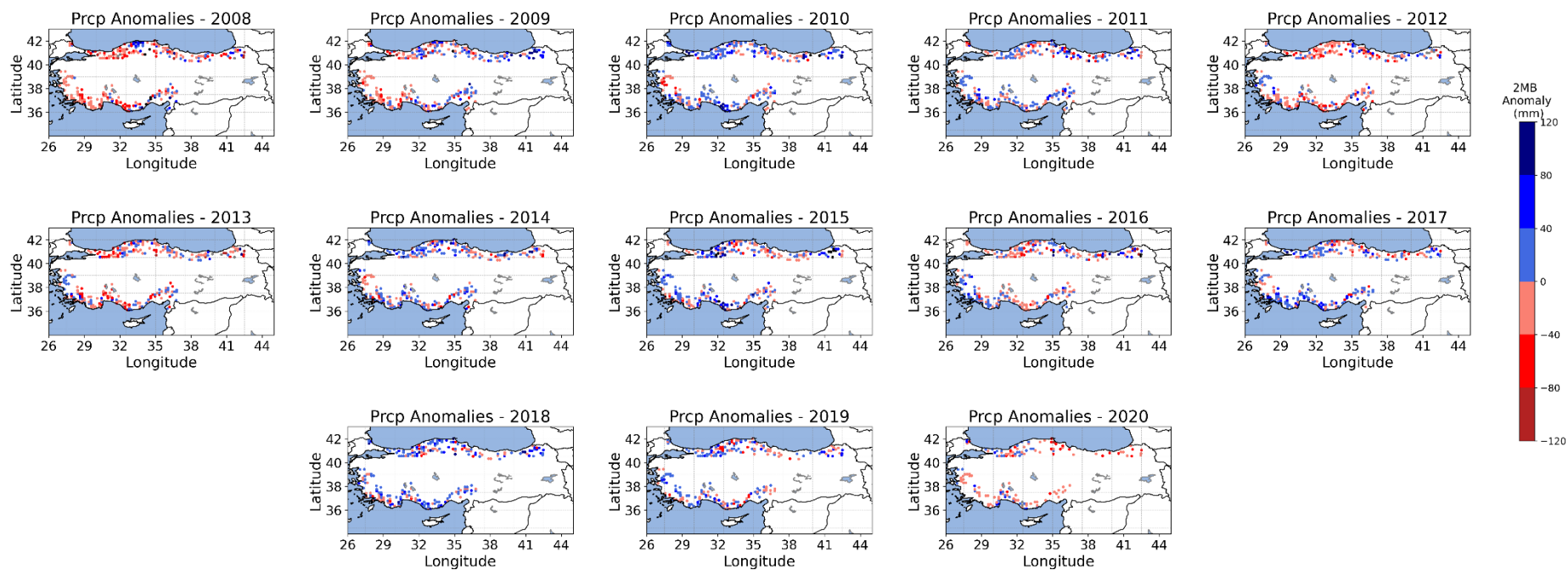


Figure S31. 2 months back Prcp anomalies for the 277 plots for the period 2008-2020

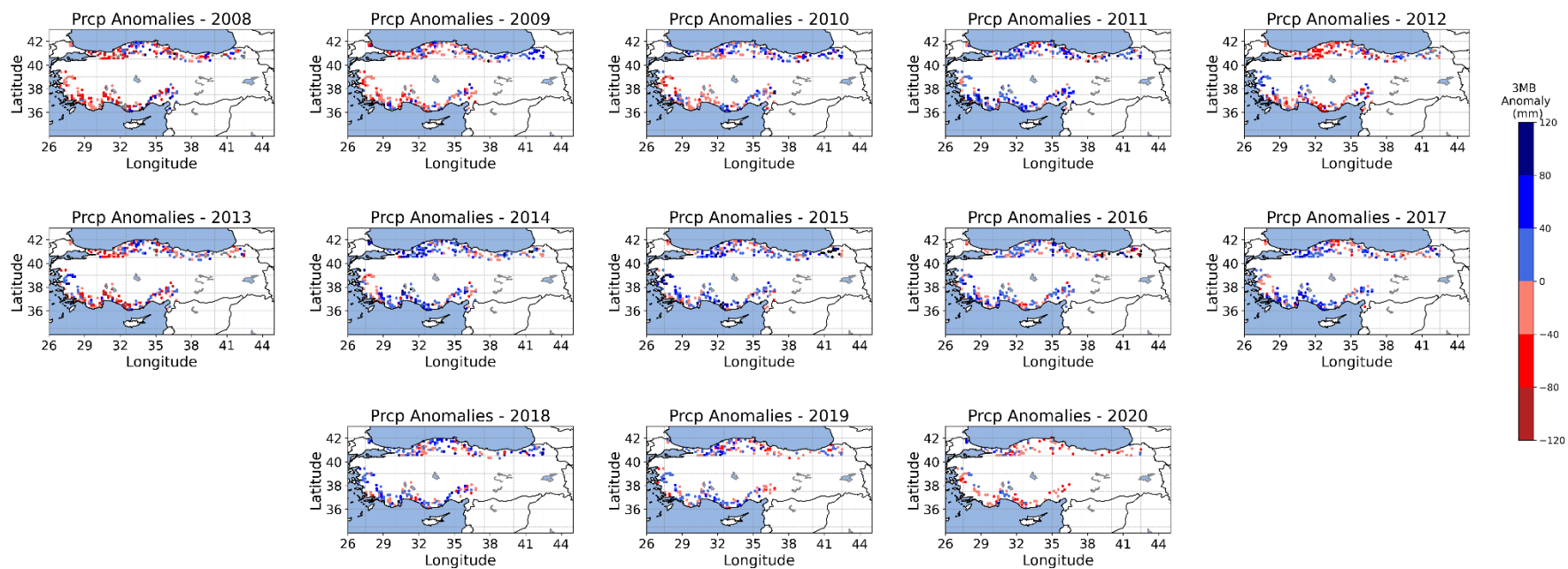


Figure S32. 3 months back Prcp anomalies for the 277 plots for the period 2008-2020

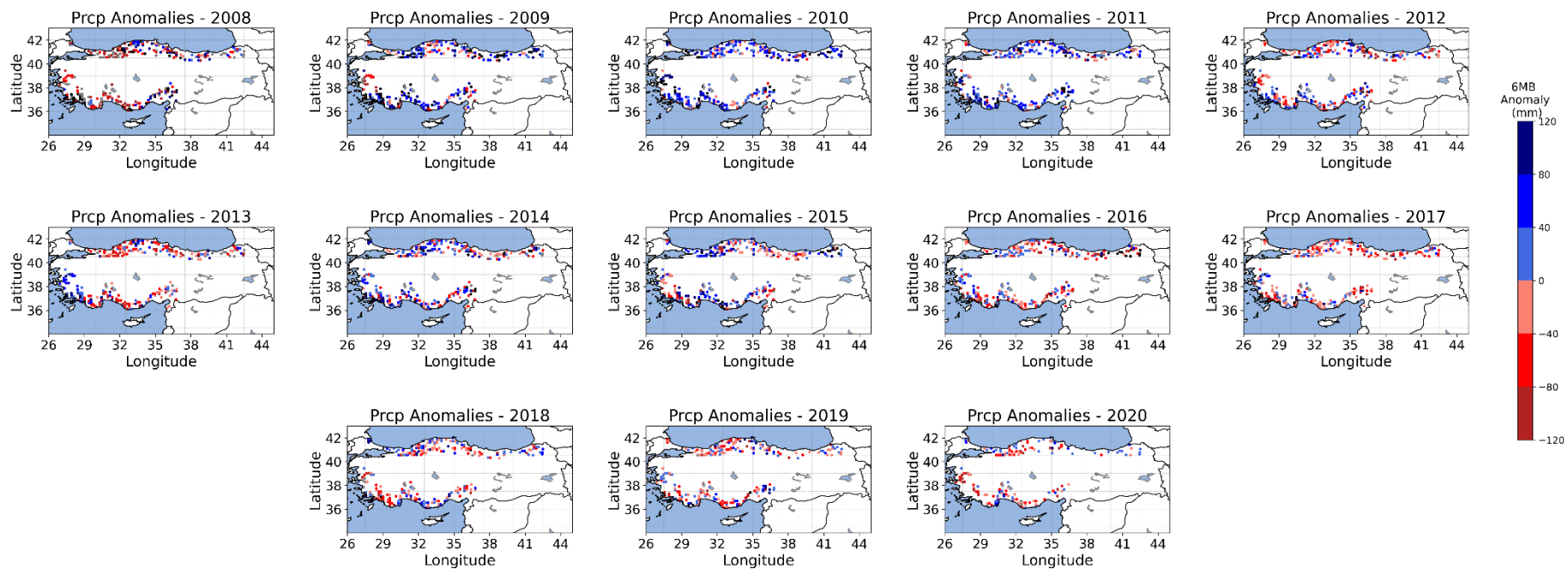


Figure S34. 6 months back Prcp anomalies for the 277 plots for the period 2008-2020



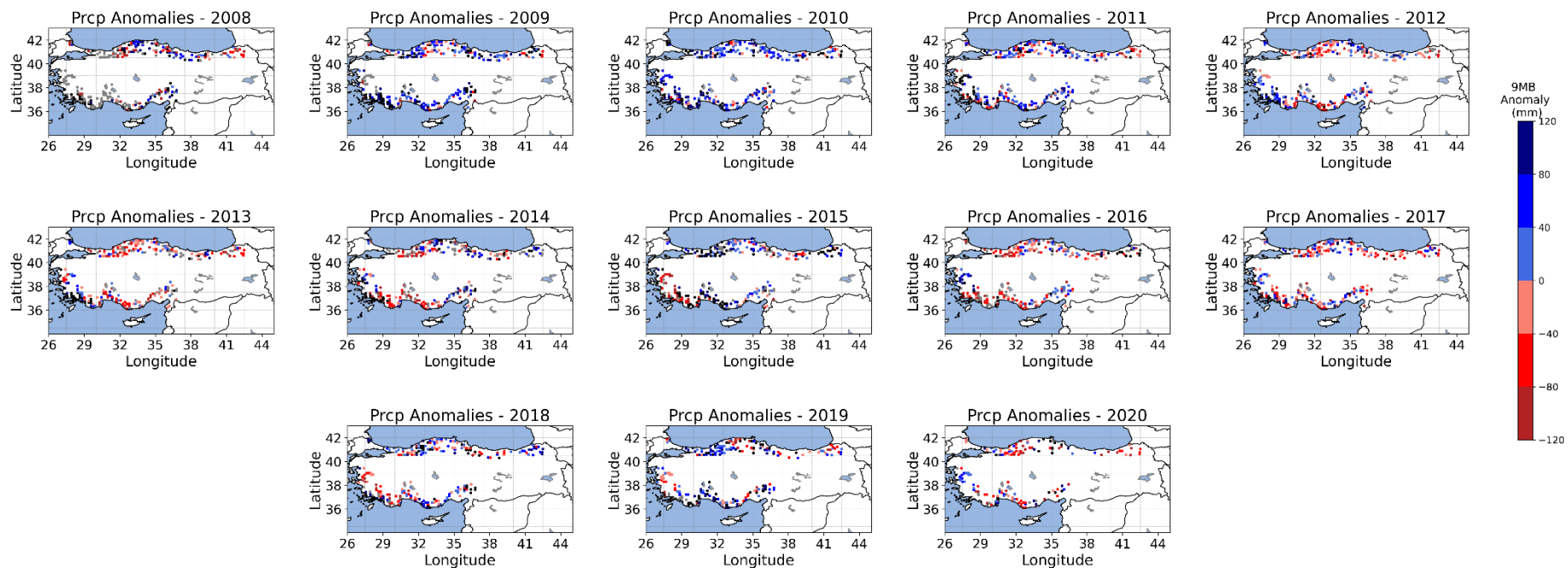


Figure S35. 9 months back Prcp anomalies for the 277 plots for the period 2008-2020



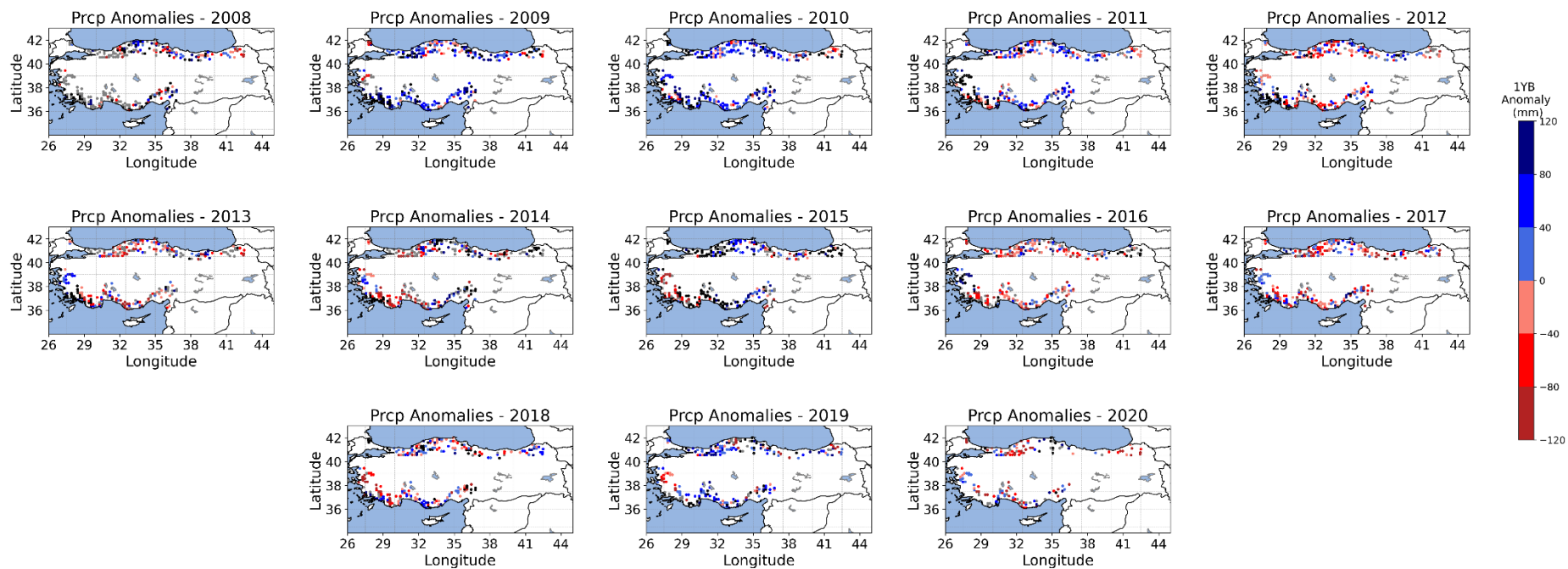


Figure S36. 12 months back Prcp anomalies for the 277 plots for the period 2008-2020

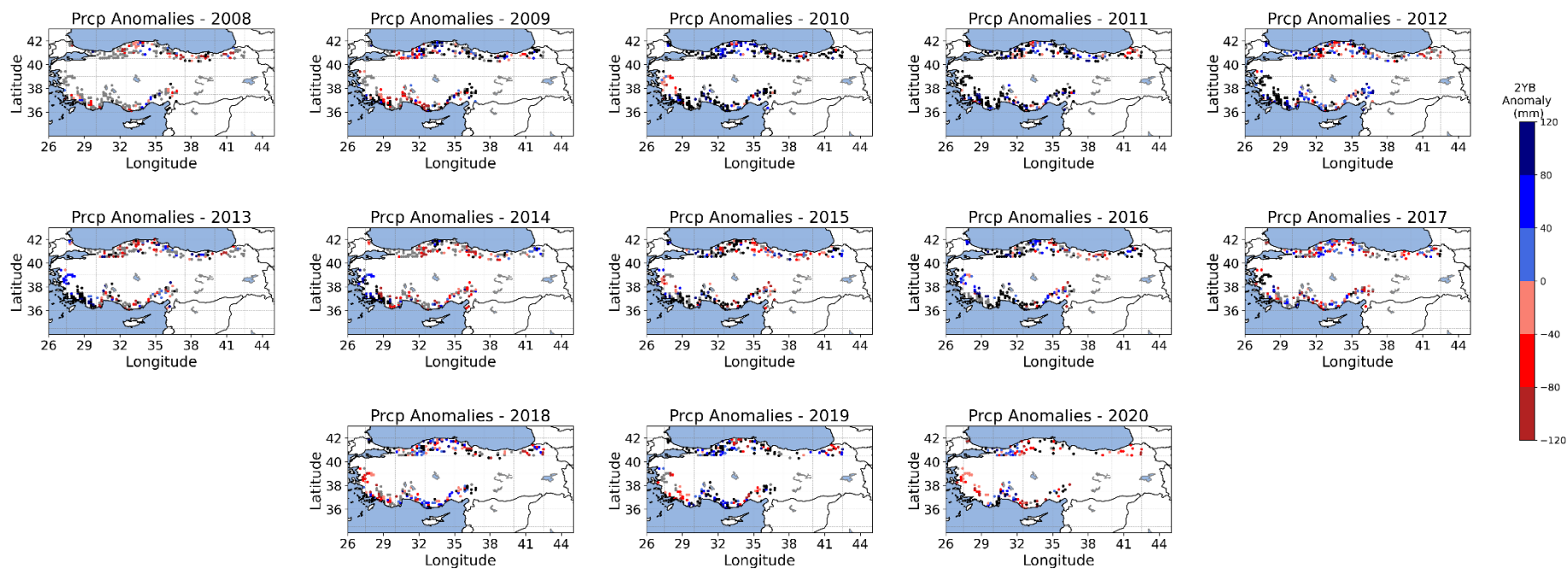


Figure S37. 24 months back Prcp anomalies for the 277 plots for the period 2008-2020