Figure S1: Comparison of model-simulated LAI trends in regions with warming hiatuses

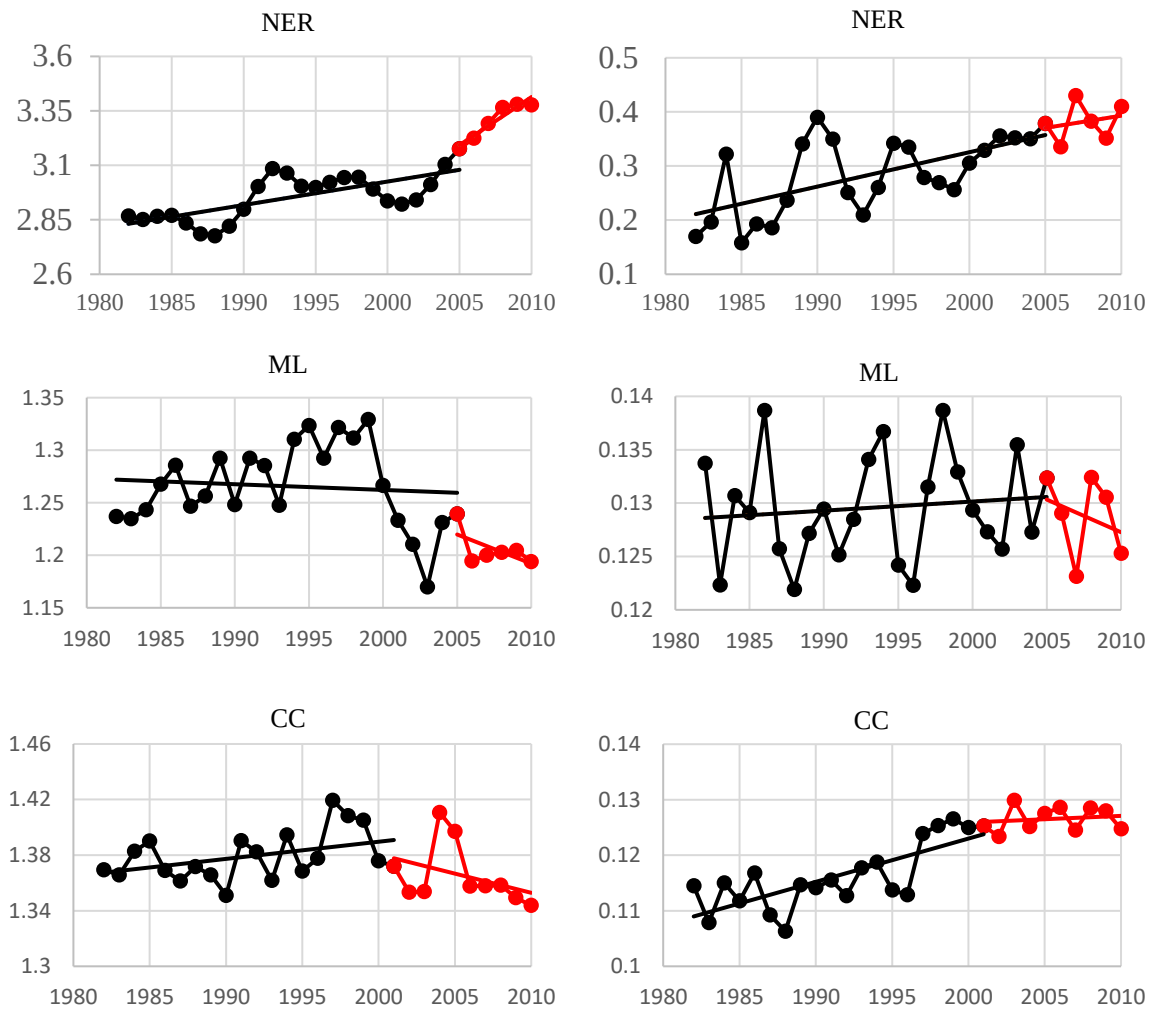

Figure S1. Comparison of model-simulated LAI trends in regions with warming hiatuses; Left 3 figures are BIOME-BGC simulated LAI, right 3 figures are CLASS model simulated LAI. NER: northeastern Russia; ML: Mongolia; CC: Central China

We use the LAI data from the BIOME-BGC and CLASS models to find the annual average LAI of the vegetation during the growing season in the warming hiatus region in NER. The time range of these two models is from 1901-2010. To verify our findings, we select the data from 1982-2010 for analysis. Fig. S5 represents the trend of LAI in NER, ML and CC. The left column represents the BIOME-BGC model validation results, and the right column represents the CLASS-CTEM model validation results.

In NER, both the BIOME-BGC and CLASS models indicate that the trends before and after the stagnation are the same as the NDVI trends in our research results. However, the LAI from the BIOME-BGC model output is relatively stable, and the LAI change from the CLASS model is consistent with the trend of the NDVI during the time series. In ML, the LAI change using the BIOME-BGC model is similar to that of the NDVI in 2000; the fluctuation trend is different, but the trend is the same throughout the whole trend. The trend of the LAI from the BIOME-BGC model is consistent with that of the NDVI in CC.

Figure S2: Comparison of model-simulated LAI trends in regions without warming hiatuses

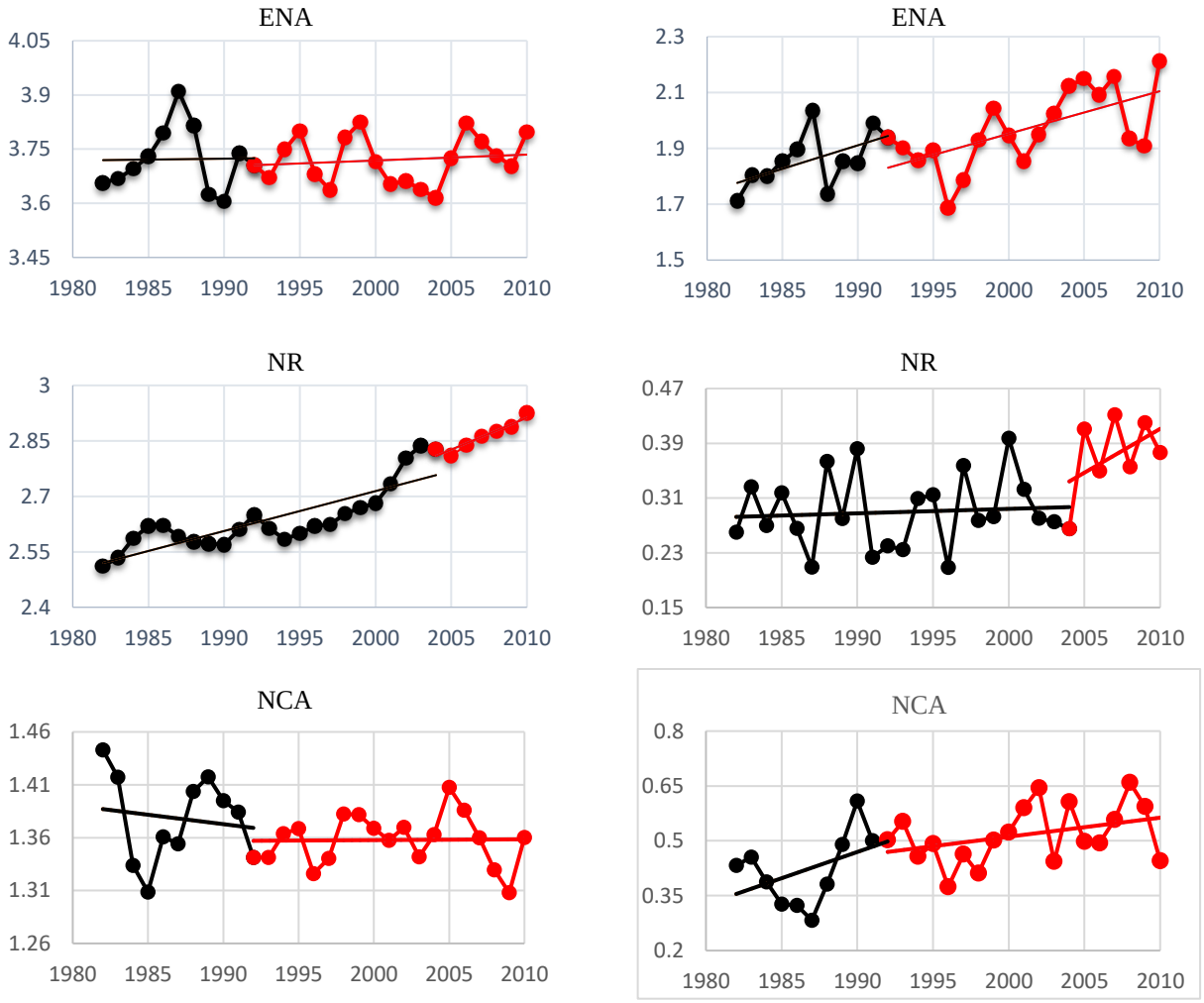

Figure S2: Comparison of model-simulated LAI trends in regions without warming hiatuses; Left 3 figures are BIOME-BGC simulated LAI, right 3 figures are CLASS model simulated LAI. ENA: eastern North America; NR: northern Russia; NCA: northern central Asia.

The results of the BIOME-BGC (left)and CLASS-CTEM-N (right) models in the MsTMIP show that the LAI data of the model and the NDVI trend in the results of this study are verified based on their consistency. We can conclude that the results of the LAI in the two models are the same as those in the time series of the present study.

Figure S3: Trends of Global Land Surface Satellite (GLASS) LAI in six regions

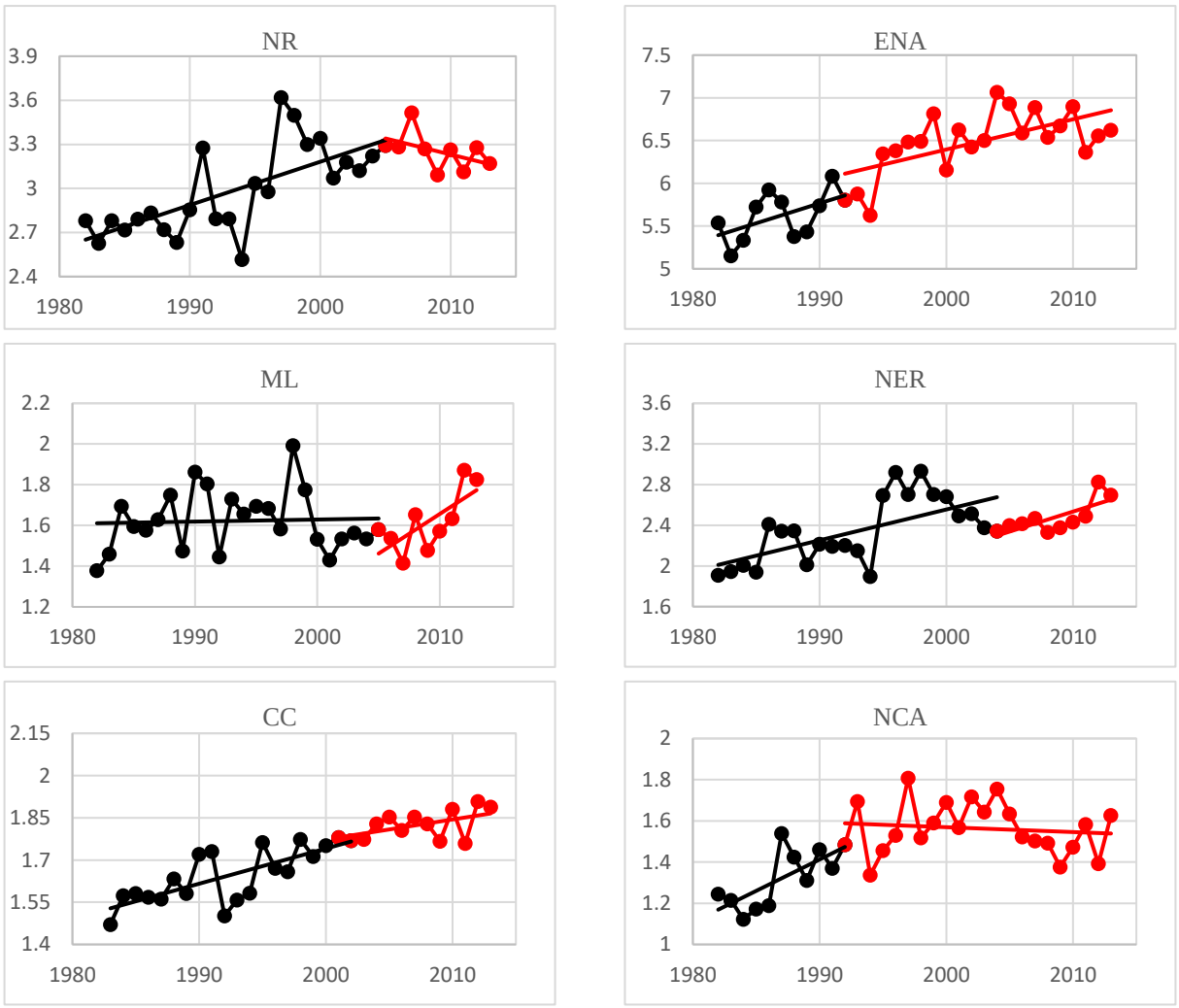

Figure S3: The trend of LAI in the majority of the six study areas with stagnant temperature is consistent with the results in this study. Although variation within some years differs, the overall trend of the same change verifies the reliability of the results of this study. ENA: eastern North America; NR: northern Russia; NCA: northern central Asia. NER: northeastern Russia; ML: Mongolia; CC: Central China