

Earth System Dynamics

Supplementary material for

**Global and Northern-High-Latitude Terrestrial carbon sinks in the 21st century from
CMIP6 experiments**

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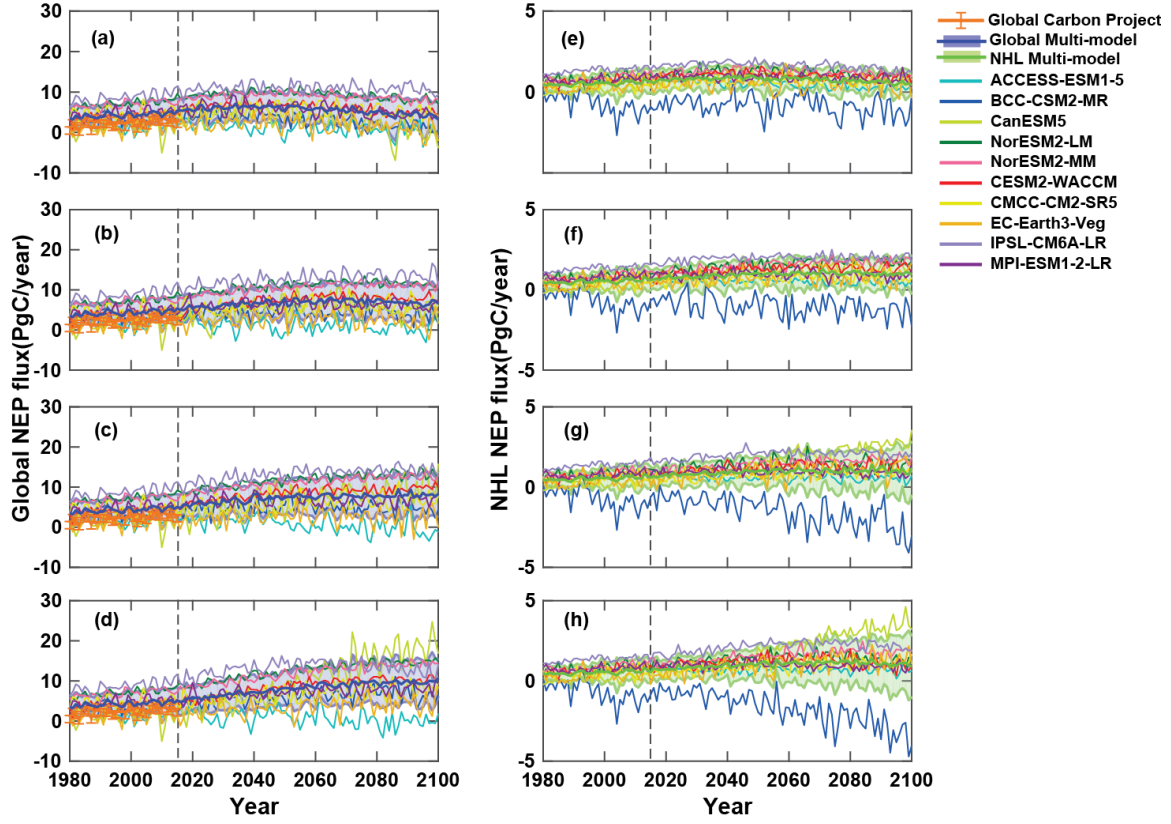


Figure S1. Time series of ten CMIP6 models NEP outputs during the historical period (1980-2014) and the future period (2015 - 2100) under four future scenarios at the global and the NHL scales: (a) global NEP under SSP126; (b) global NEP under SSP245; (c) global NEP under SSP370; (d) global NEP under SSP585; (e) NHL NEP under SSP126; (f) NHL NEP under SSP245; (g) NHL NEP under SSP370; (h) NHL NEP under SSP585. The shaded bands are the SD values among models representing the model uncertainties.

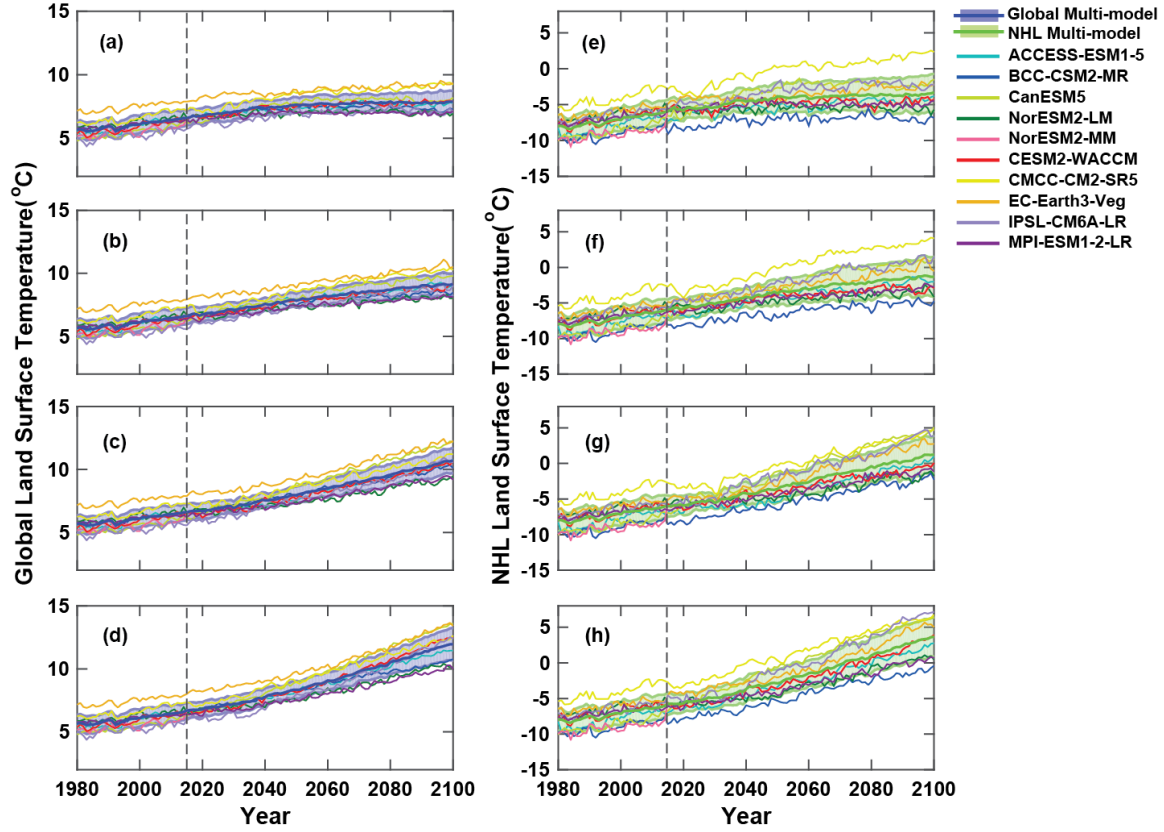


Figure S2. Time series of ten CMIP6 models TS outputs during the historical period (1980-2014) and the future period (2015 - 2100) under four future scenarios at the global and the NHL scales: (a) global TS under SSP126; (b) global TS under SSP245; (c) global TS under SSP370; (d) global TS under SSP585; (e) NHL TS under SSP126; (f) NHL TS under SSP245; (g) NHL TS under SSP370; (h) NHL TS under SSP585. The shaded bands are the SD values among models representing the model uncertainties.

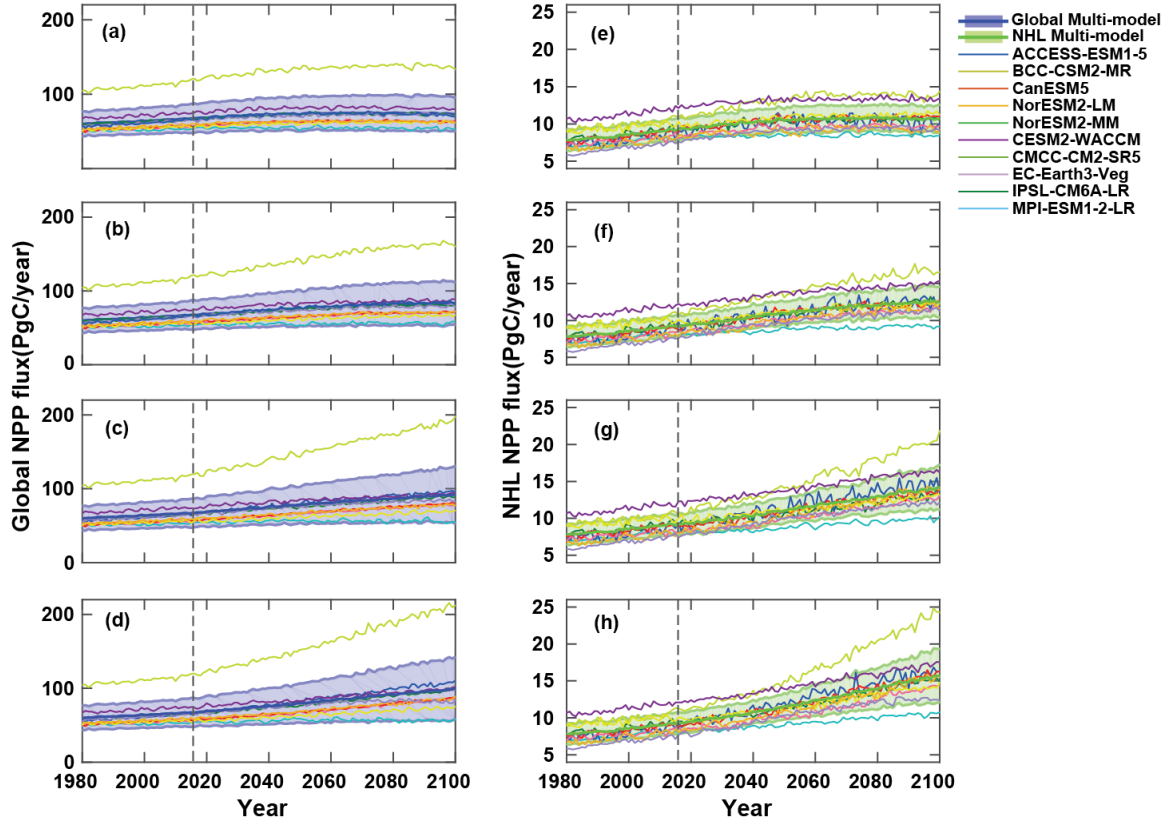


Figure S3. Time series of ten CMIP6 models NPP outputs during the historical period (1980-2014) and the future period (2015 - 2100) under four future scenarios at the global and the NHL scales: (a) global NPP under SSP126; (b) global NPP under SSP245; (c) global NPP under SSP370; (d) global NPP under SSP585; (e) NHL NPP under SSP126; (f) NHL NPP under SSP245; (g) NHL NPP under SSP370; (h) NHL NPP under SSP585. The shaded bands are the SD values among models representing the model uncertainties.

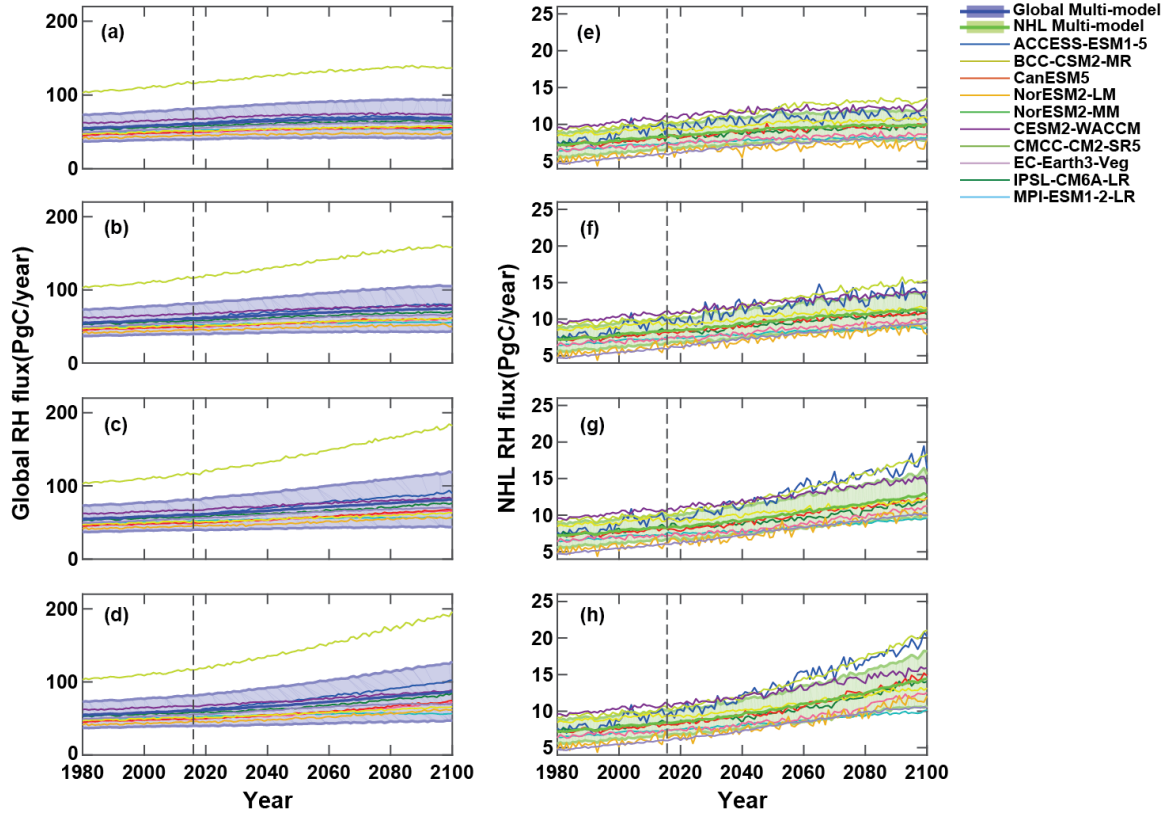


Figure S4. Time series of ten CMIP6 models RH outputs during the historical period (1980-2014) and the future period (2015 - 2100) under four future scenarios at the global and the NHL scales: (a) global RH under SSP126; (b) global RH under SSP245; (c) global RH under SSP370; (d) global RH under SSP585; (e) NHL RH under SSP126; (f) NHL RH under SSP245; (g) NHL RH under SSP370; (h) NHL RH under SSP585. The shaded bands are the SD values among models representing the model uncertainties.

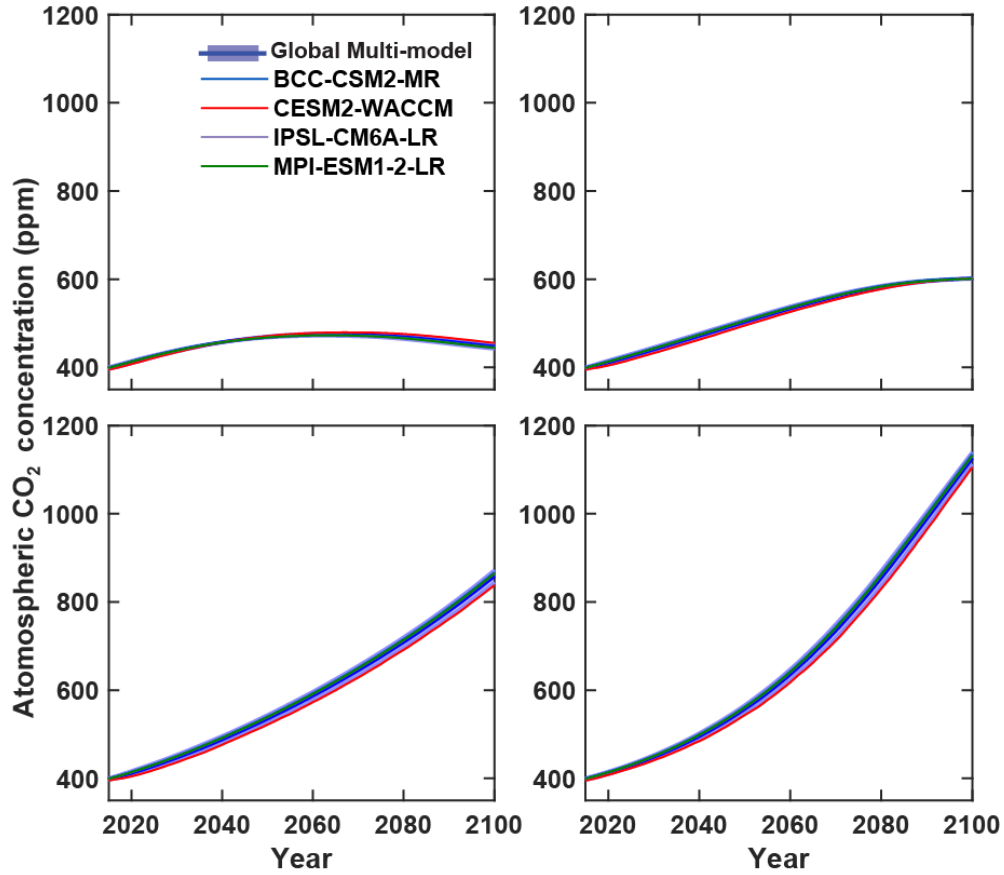


Figure S5. Time series of four CMIP6 models bottom layer global atmospheric CO₂ concentration outputs during the future period (2015 - 2100) under four future scenarios at the global scale: (a) global CO₂ under SSP126; (b) global CO₂ under SSP245; (c) global CO₂ under SSP370; (d) global CO₂ under SSP585. The shaded bands are the SD values among models representing the model uncertainties.

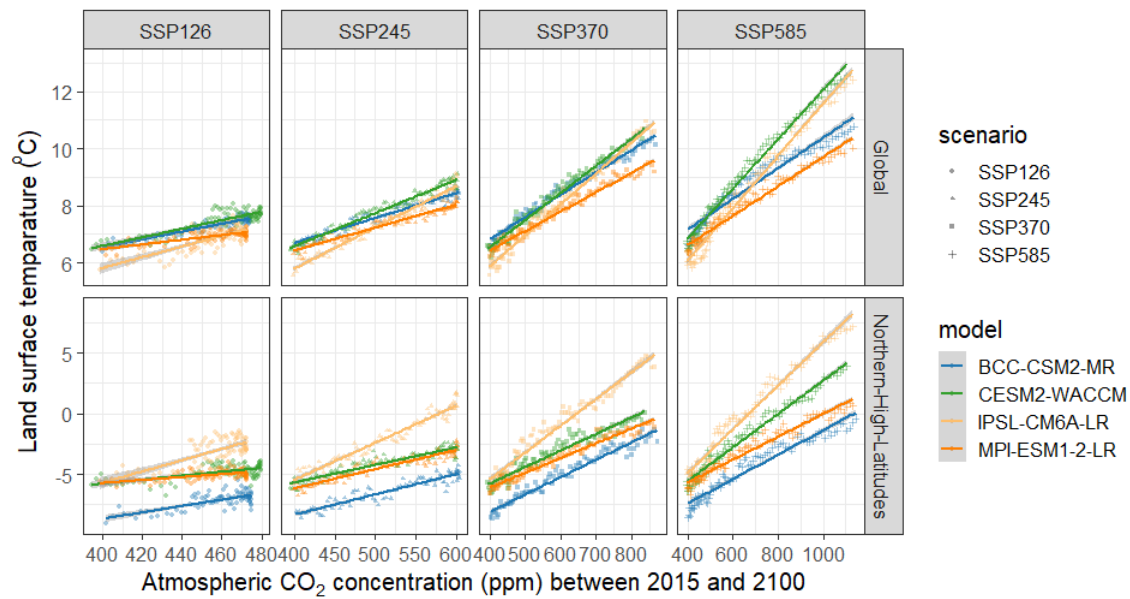


Figure S6. Land surface temperature (°C) vs. atmospheric CO₂ concentration (ppm) in four CMIP6 models during the future period (2015 - 2100) under four future scenarios at the global and the NHL scales.