

Impacts of Compound Hot–Dry Events on Vegetation Productivity over Northern East Asia

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Supplementary Materials

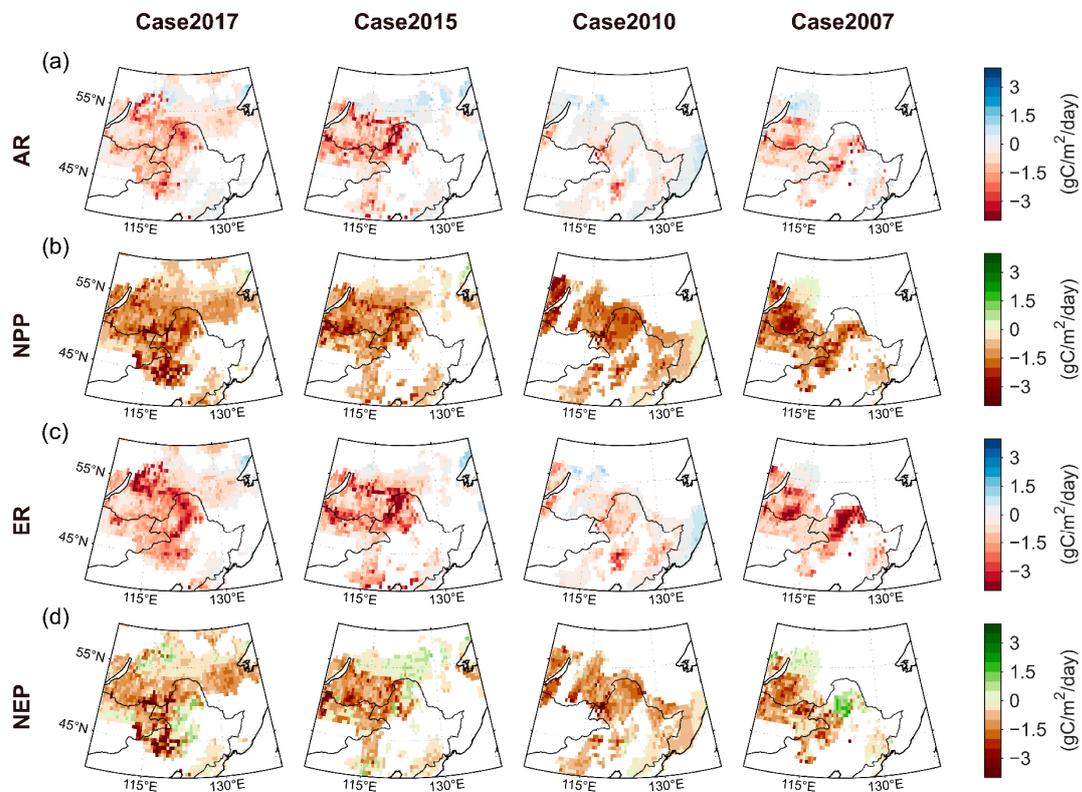


Figure S1. Changes in autotrophic respiration (AR) (a), net primary productivity (NPP) (b), ecosystem respiration (ER) (c), and net ecosystem productivity (NEP) (d) during the four compound hot–dry (CHD) events, calculated by subtracting the results of the *SE_Clim* experiment from those of the *Control* experiment.

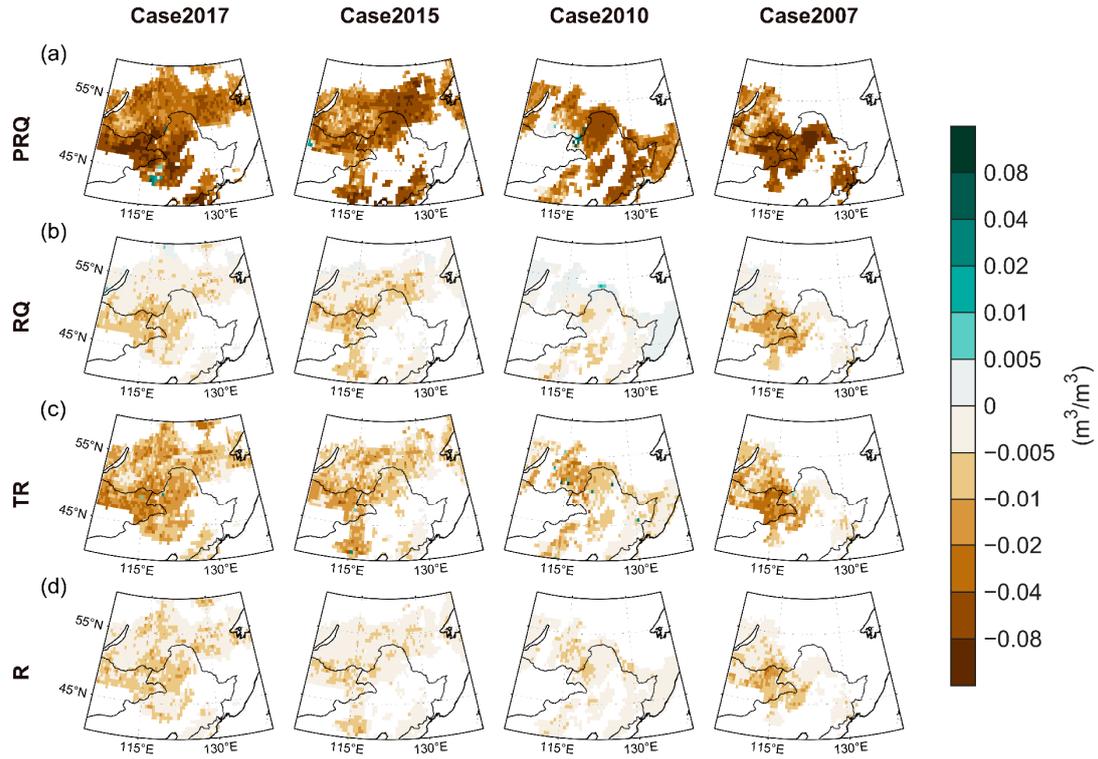


Figure S2. Changes in soil moisture (SM) caused by the combined effects of (a) precipitation, incident radiation, and 2 m humidity (PRQ), (b) incident radiation and 2 m humidity (RQ), and (c) 2 m temperature and incident radiation (TR), and (d) the individual effect of incident radiation (R) during the four CHD events. These SM changes were calculated by subtracting the results of the *SE_Clim* experiment from the results of the *SE_PRQ*, *SE_RQ*, *SE_TR*, and *SE_R* experiments, respectively.

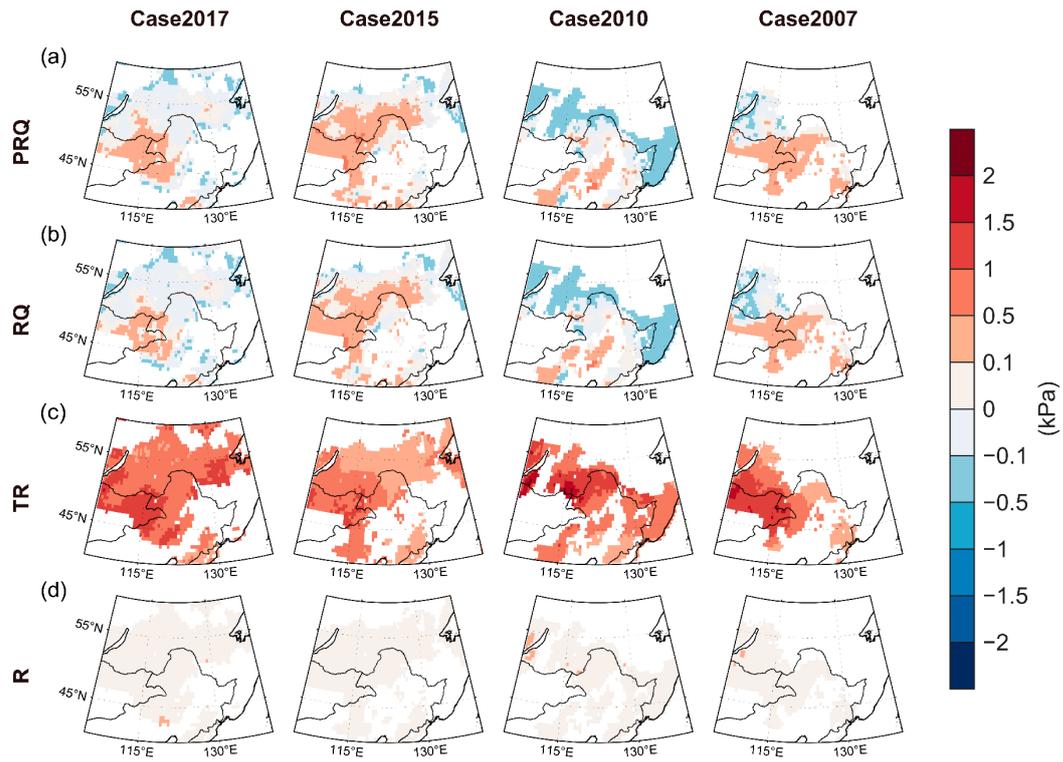


Figure S3. Same as Figure S2, but for vapor pressure deficit (VPD). PRQ: the combined effect of precipitation, radiation and humidity; RQ: the combined effect of radiation and humidity; TR: the combined effect of temperature and radiation; R: the individual effect of incident radiation.

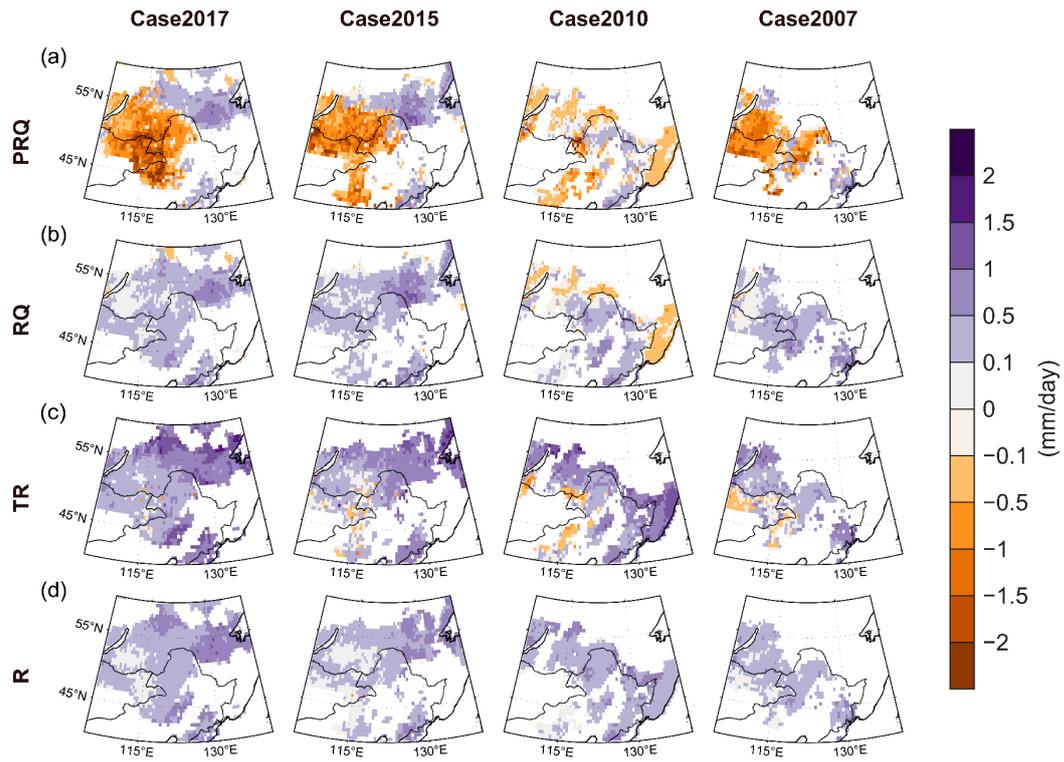


Figure S4. Same as Figure S2, but for evapotranspiration (ET). PRQ: the combined effect of precipitation, radiation and humidity; RQ: the combined effect of radiation and humidity; TR: the combined effect of temperature and radiation; R: the individual effect of incident radiation.

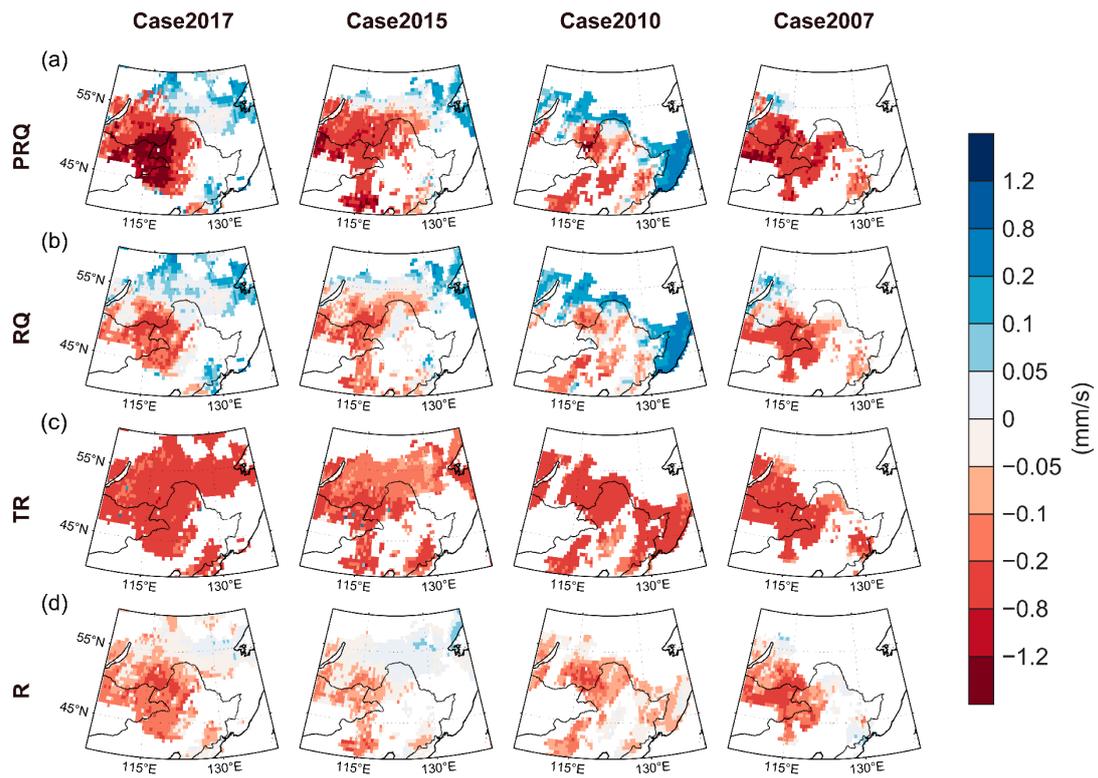


Figure S5. Same as Figure S2, but for canopy conductance (G_c). PRQ: the combined effect of precipitation, radiation and humidity; RQ: the combined effect of radiation and humidity; TR: the combined effect of temperature and radiation; R: the individual effect of incident radiation.

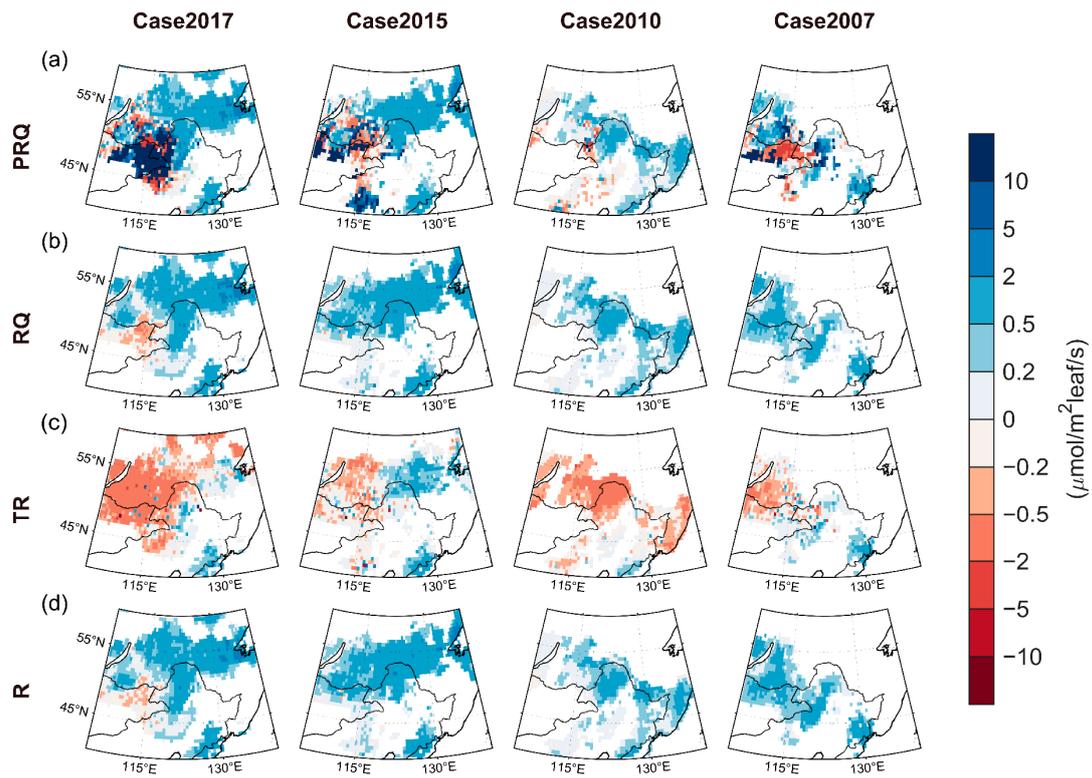


Figure S6. Same as Figure S2, but for maximum carboxylation rate (V_{cmax}). PRQ: the combined effect of precipitation, radiation and humidity; RQ: the combined effect of radiation and humidity; TR: the combined effect of temperature and radiation; R: the individual effect of incident radiation.

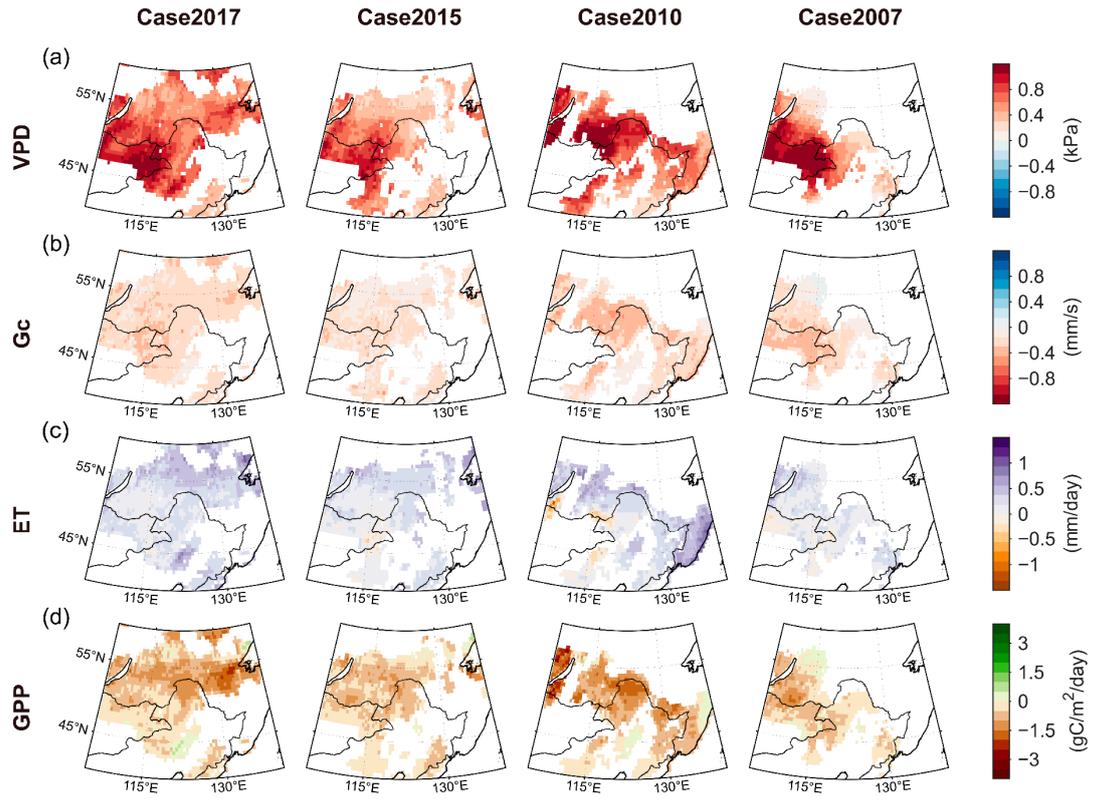


Figure S7. The eco-hydrological response of the 2 m temperature's (T) effect, calculated as SE_T minus SE_{Clim} . VPD, vapor pressure deficit; G_c , canopy conductance; ET, evapotranspiration; GPP, gross primary productivity.

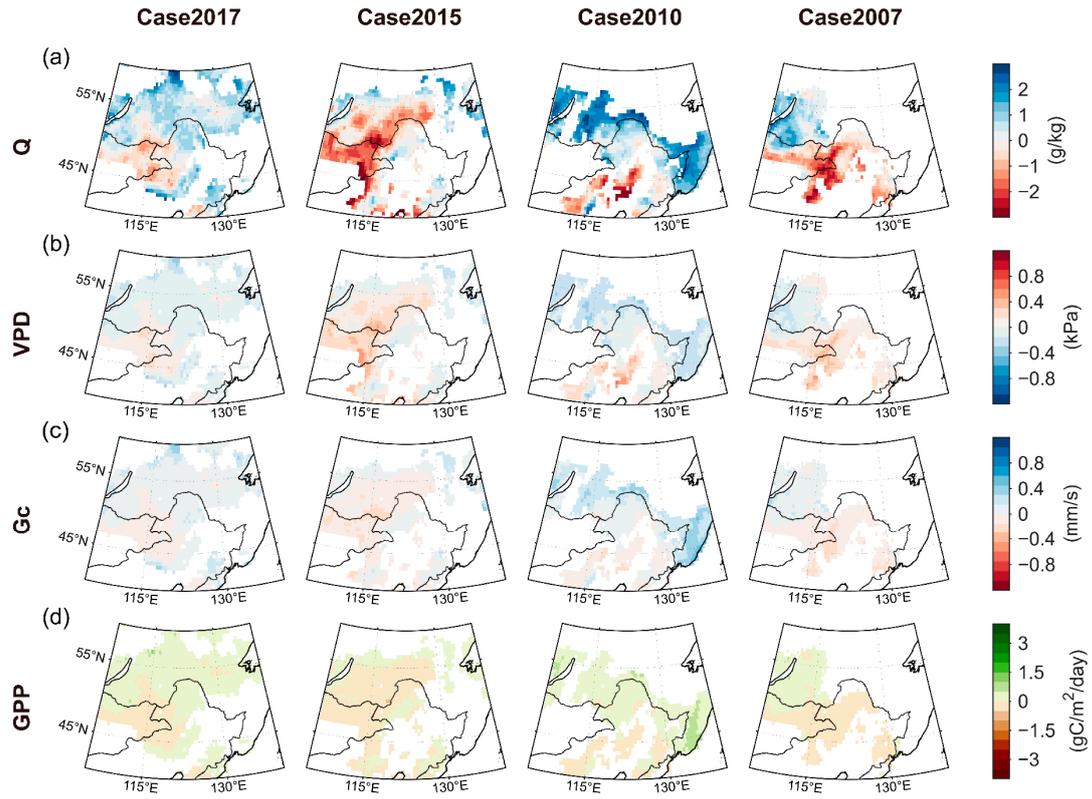


Figure S8. The eco-hydrological response of 2 m specific humidity's (Q) effect, calculated as SE_Q minus $SE_{Clim. Q}$. Q , 2 m specific humidity; VPD, vapor pressure deficit; G_c , canopy conductance; GPP, gross primary productivity.