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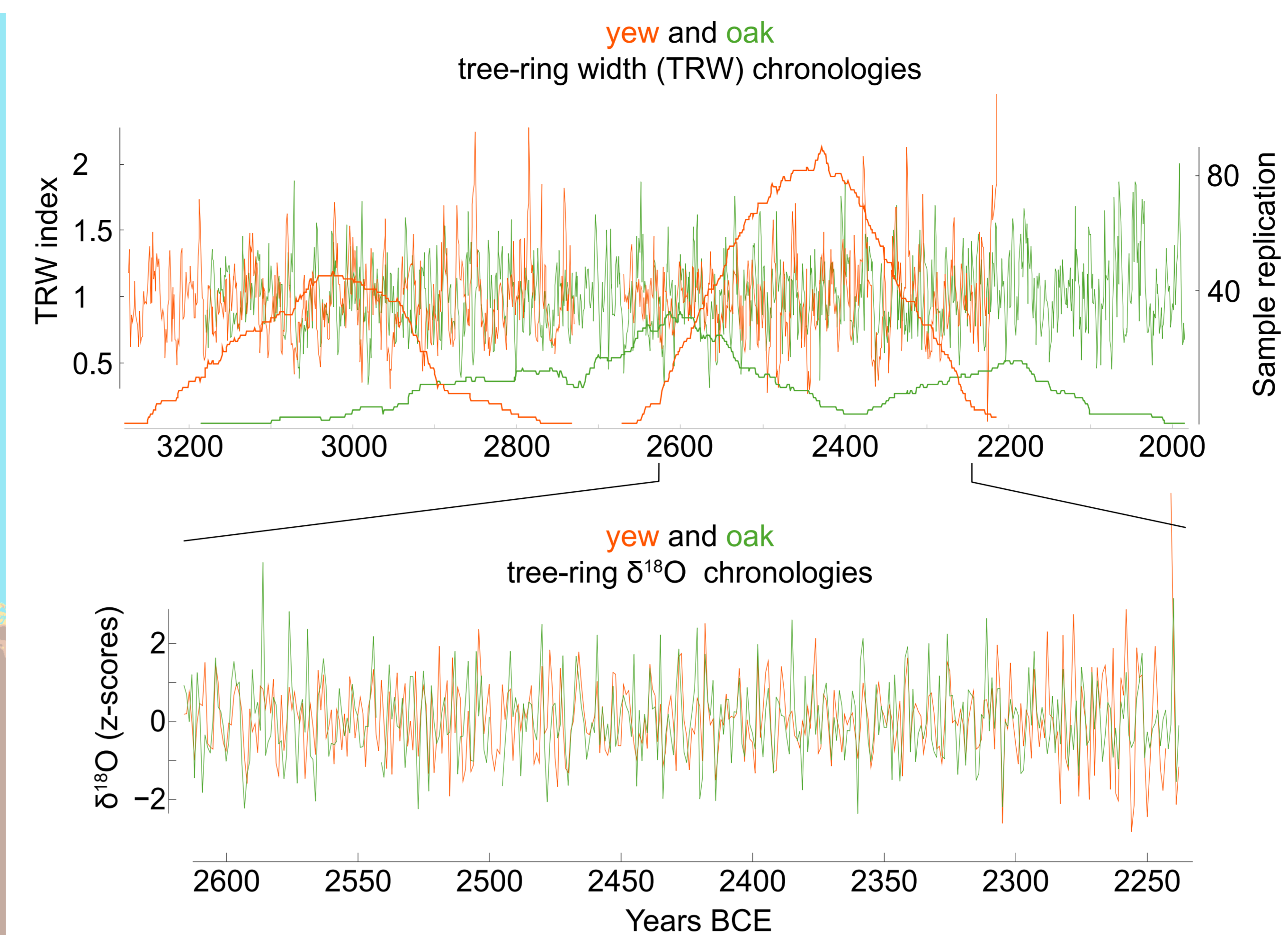
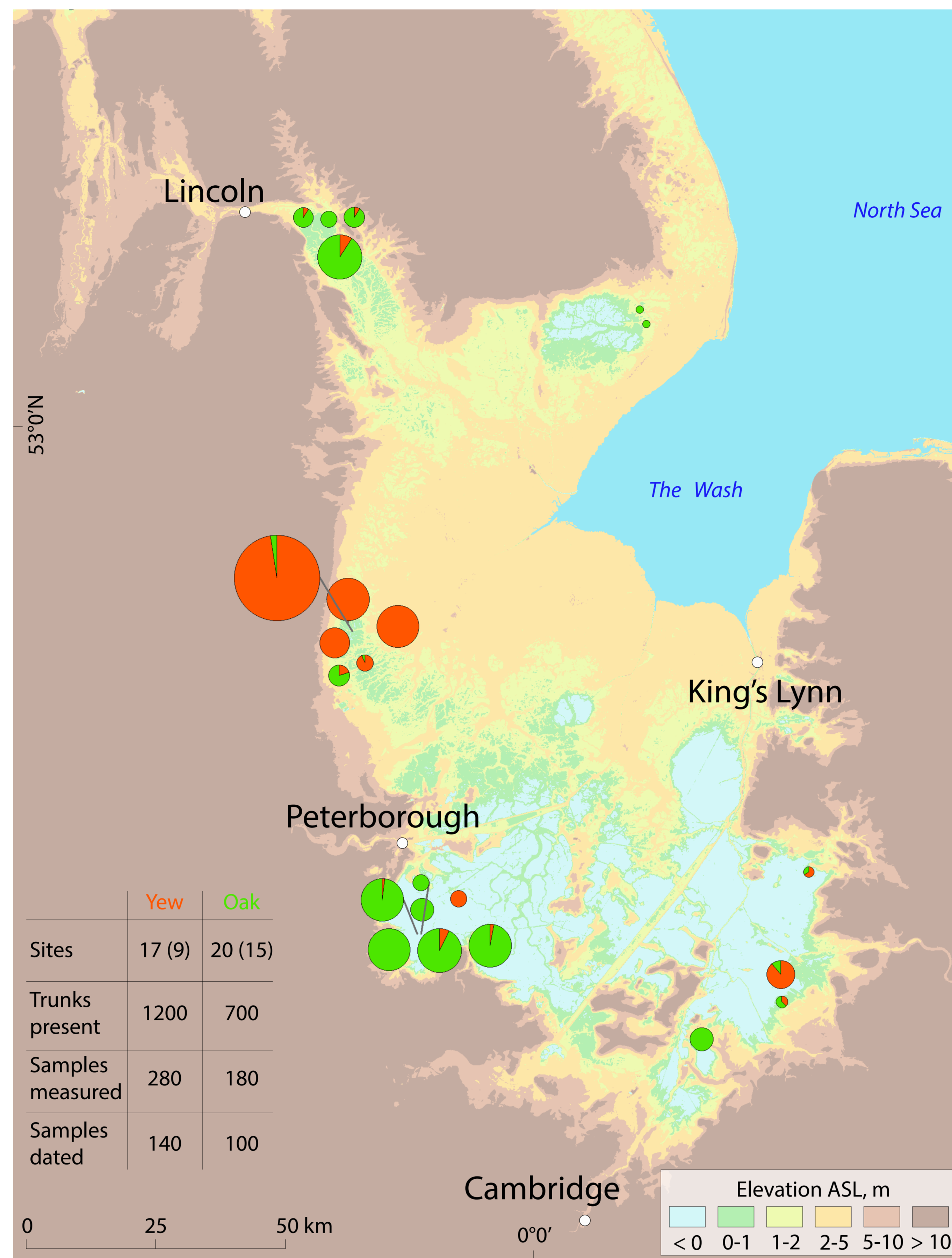
Bebchuk et al. 2024, QSR



Bebchuk et al., 2025, ClimDyn



Bebchuk et al., 2025, GRL



Over 1,000 subfossil yew and oak trunks were excavated from peat-rich soils of eastern England.

We developed mid-Holocene yew and oak TRW chronologies.

We used tree-ring stable  $\delta^{18}\text{O}$  isotopes to precisely date the yew record against the oak  $\delta^{18}\text{O}$  chronology.

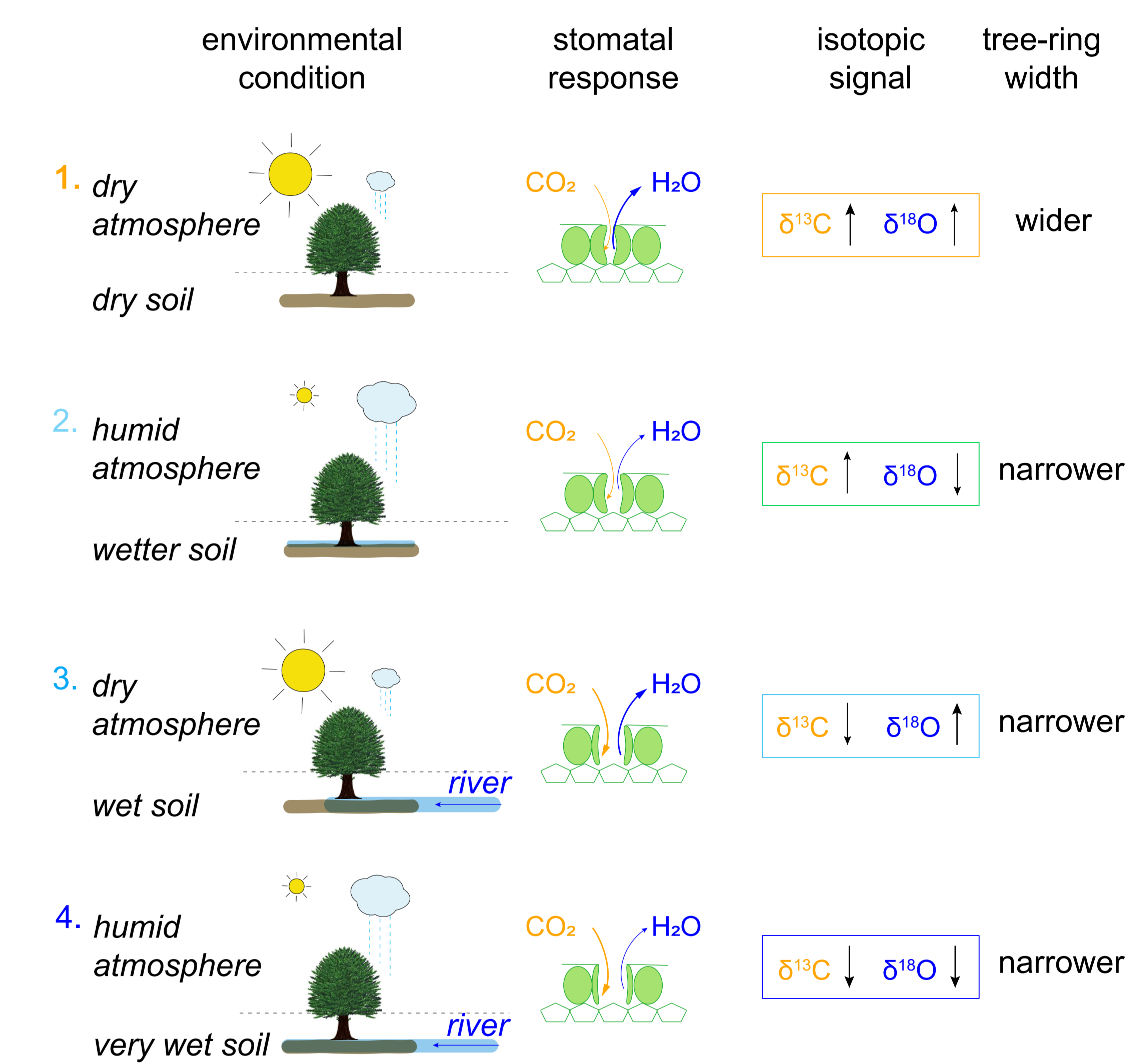
Our yew record spans from 3260–2200 BCE and oak record spans from 3180–1980 BCE.

We measured tree-ring stable  $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$  isotopes for a subset of yew samples.

We developed an eco-physiological model to reconstruct climate and environmental changes.

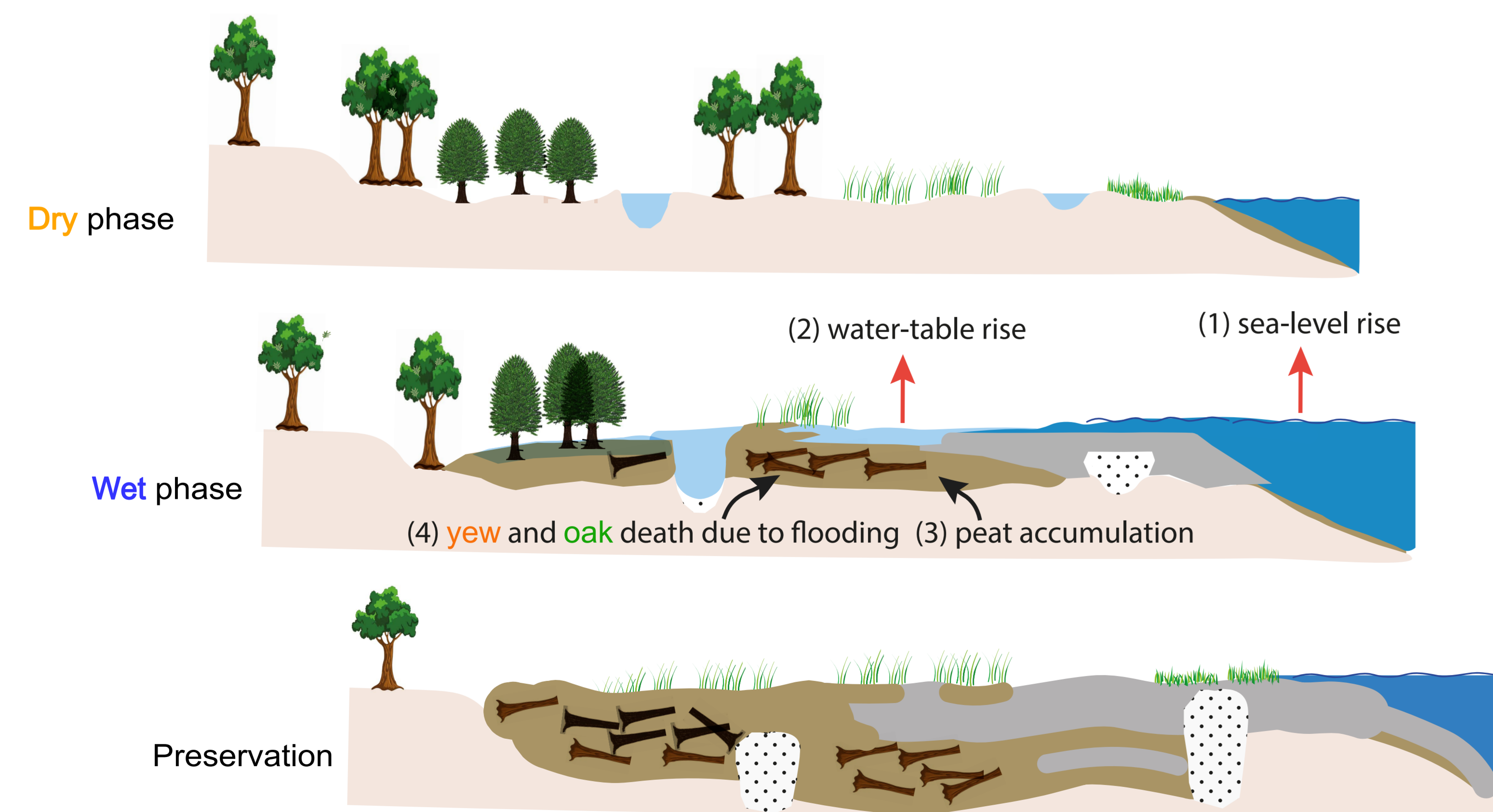
Decreasing  $\delta^{13}\text{C}$  reflects a groundwater influx, and decreasing  $\delta^{18}\text{O}$  reflects a humid atmosphere.

Drier conditions favoured yew growth, while wetter conditions resulted in reduced TRWs.



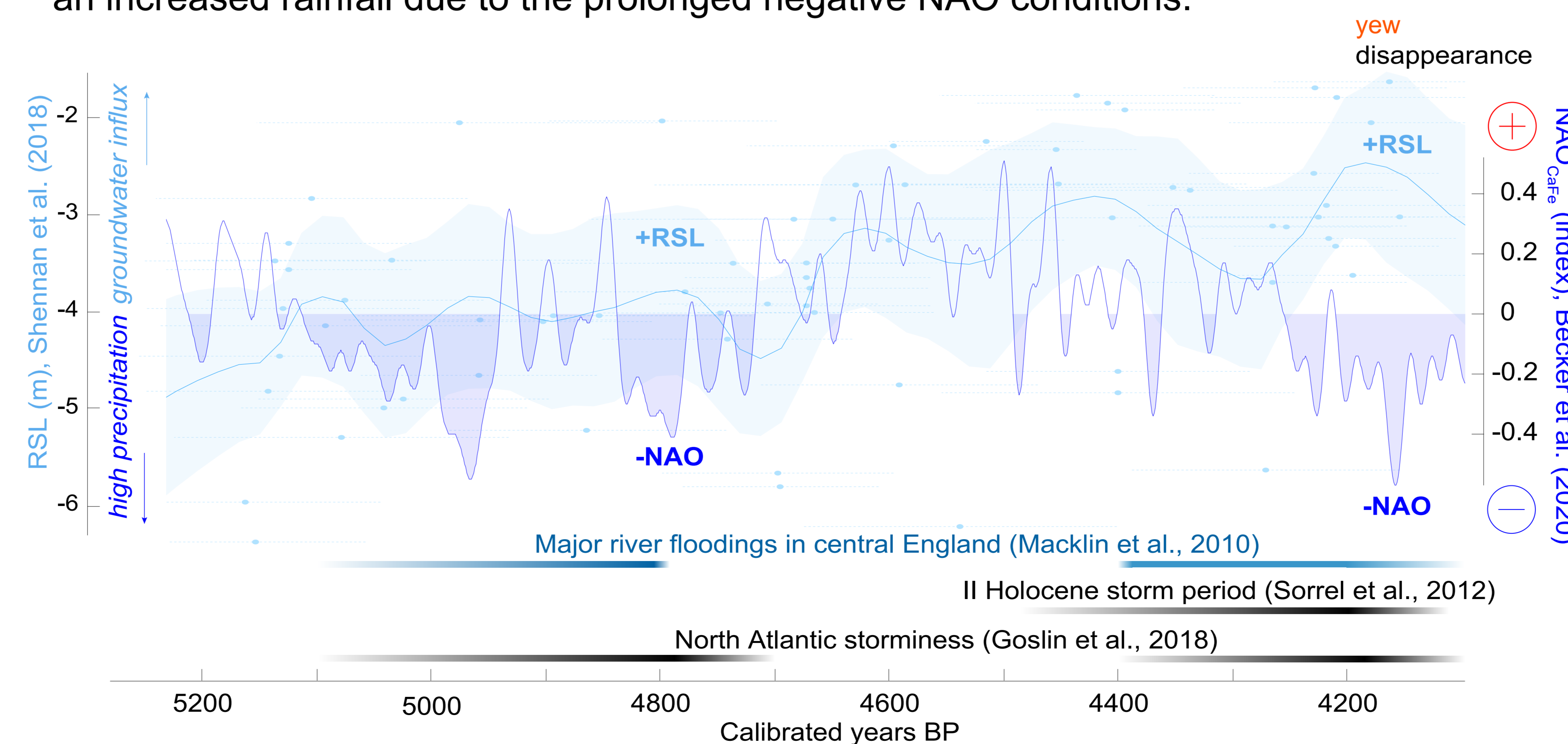
## woodlands disappearance

Yew woodlands disappeared from eastern England in the mid-Holocene.



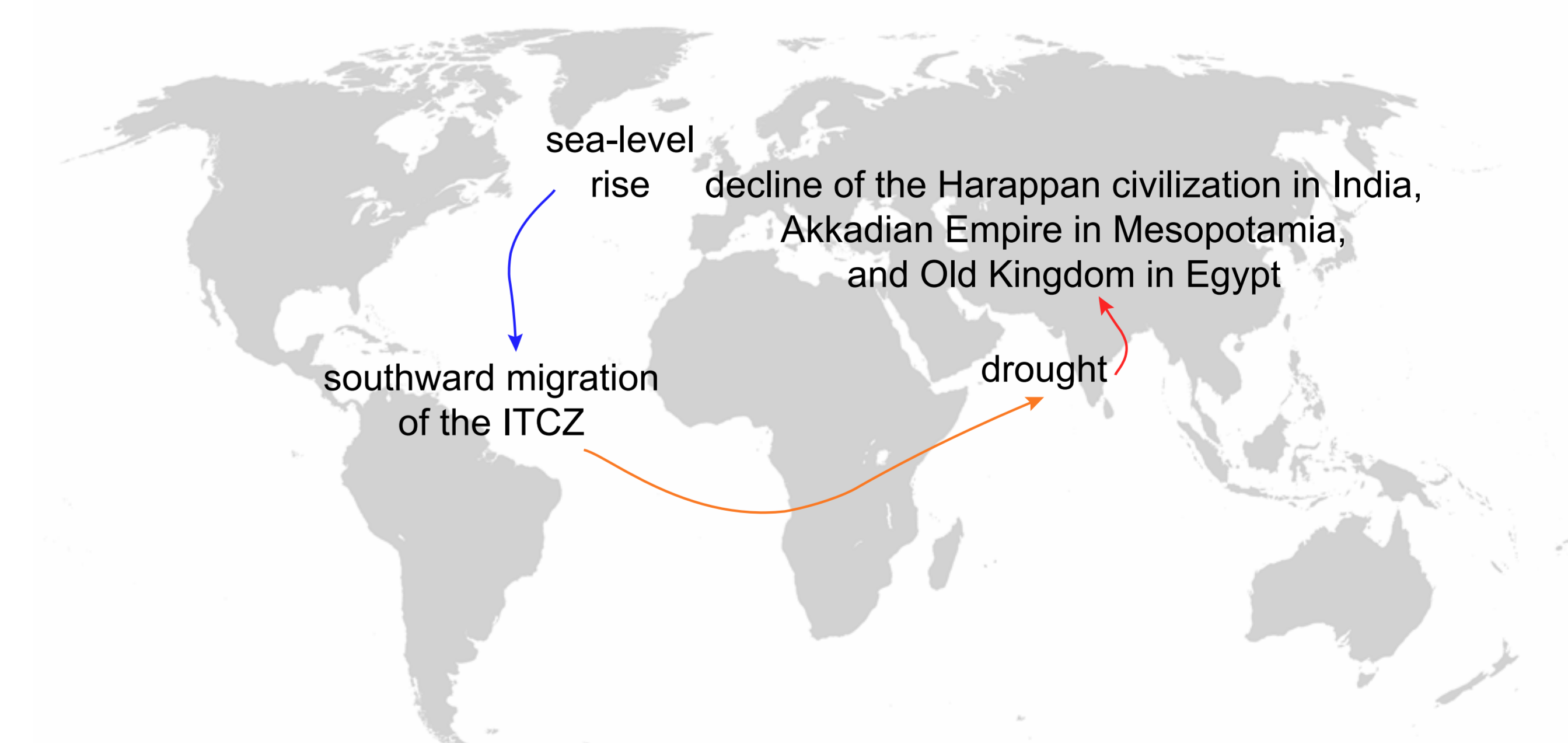
## sea-level rise and increased rainfall

Yew decline was likely driven by the combination of a sea-level rise in the North Sea and an increased rainfall due to the prolonged negative NAO conditions.



## 4.2 ka climate anomaly

The climatic and environmental shift in England coincided with the "4.2ka event", associated with a drought in Central Asia and decline of several ancient civilizations.



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