Appendix A

Did the Bronze Age deforestation of Europe affect its climate? A regional climate-model study using pollen-based land-cover reconstructions. Strandberg et al., 2023

Table A1 Groups of land-cover types used in this study. Ericaceae*(MTSE): the pollen productivity used for Ericaceae pollen in the REVEALS reconstruction represents the mean pollen productivity of several species of which Arbutus unedo, Erica arborea, E. cinerea and E. multiflora are dominant. The genus Calluna vulgaris (heather, LSE) also belongs to the Ericaceae family but its pollen productivity has been estimated separately (Githumbi et al., 2021). Cerealia t.: all cereals except Secale cereale (rye) that is easily that is easily separated on the basis of pollen morphology and for which pollen productivity was estimated separately. Abbreviation: t = type. of land-cover types (LCTs) and Plant Functionnal Types (PFTs) used in this study. **The most recent plant taxonomy has merged the family Chenopodiaceae into the family Amaranthaceae, i.e. "new" Amaranthaceae = "former" Amaranthaceae + Chenopodiaceae. Pollen analysts have mostly used the name Chenopodiaceae for this pollen-morphological type, but it includes all species from the two former families, therefore the name Amaranthaceae/Chenopodiaceae.

Land-cover types (LCTs)	**PFT**	**PFT definition**	**Plant taxa/Pollen-morphological types**
Evergreen trees and shrubs (ET)	TBE1	Shade-tolerant evergreen trees	*Picea abies* (Norway spruce)
	TBE2	Shade-tolerant evergreen trees	*Abies alba* (Silver fir)
	IBE	Shade-intolerant evergreen trees	*Pinus sylvestris* (Scots pine)
	MTBE	Mediterranean shade-tolerant broadleaved evergreen trees	*Phillyrea* (mock privet)
			Pistacia (lentisk, mastic)
			Quercus evergreen t. (evergreen oak species)
	TSE	Tall shrub, evergreen	*Juniperus communis* (common juniper)
	MTSE	Mediterranean broadleaved tall shrubs, evergreen	*Ericaceae** (heather family)
			Buxus sempervirens (common

			box)
Summer-green trees and shrubs (ST)	IBS	Shade-intolerant summer-green trees	*Alnus glutinosa* (common alder)
			Betula (birch species)
	TBS	Shade-tolerant summer-green trees	*Carpinus betulus* (common hornbeam)
			Carpinus orientalis (oriental hornbeam)
			Castanea sativa (sweet chestnut)
			Corylus avellana (common hazel)
			Fagus sylvatica (European beech)
			Fraxinus (ash species)
			Quercus deciduous t. (summer-green oak species)
			Tilia (linden species)
			Ulmus (elm species)
	TSD	Tall shrub, summer-green	*Salix* (willow species (osier, sallow))
Open land (OL)	LSE	Low shrub, broadleaved evergreen	*Calluna vulgaris* (heather)
	GL	Grassland - all herbs	*Artemisia* (mugwort species)
			Amaranthaceae/ Chenopodiaceae (amaranth

			family/e.g. goosefoot**)
			Cyperaceae (sedges)
			Filipendula (meadowseet)
			Poaceae (grass family)
			Plantago lanceolata (ribwort plantain)
			Rumex acetosa-t (common sorrel and some other Rumex (dock) species)
	AL	Agricultural land - cereals	*Cerealia-t* (all cereals except *Secale cereale* (rye))
			Secale cereale (rye)

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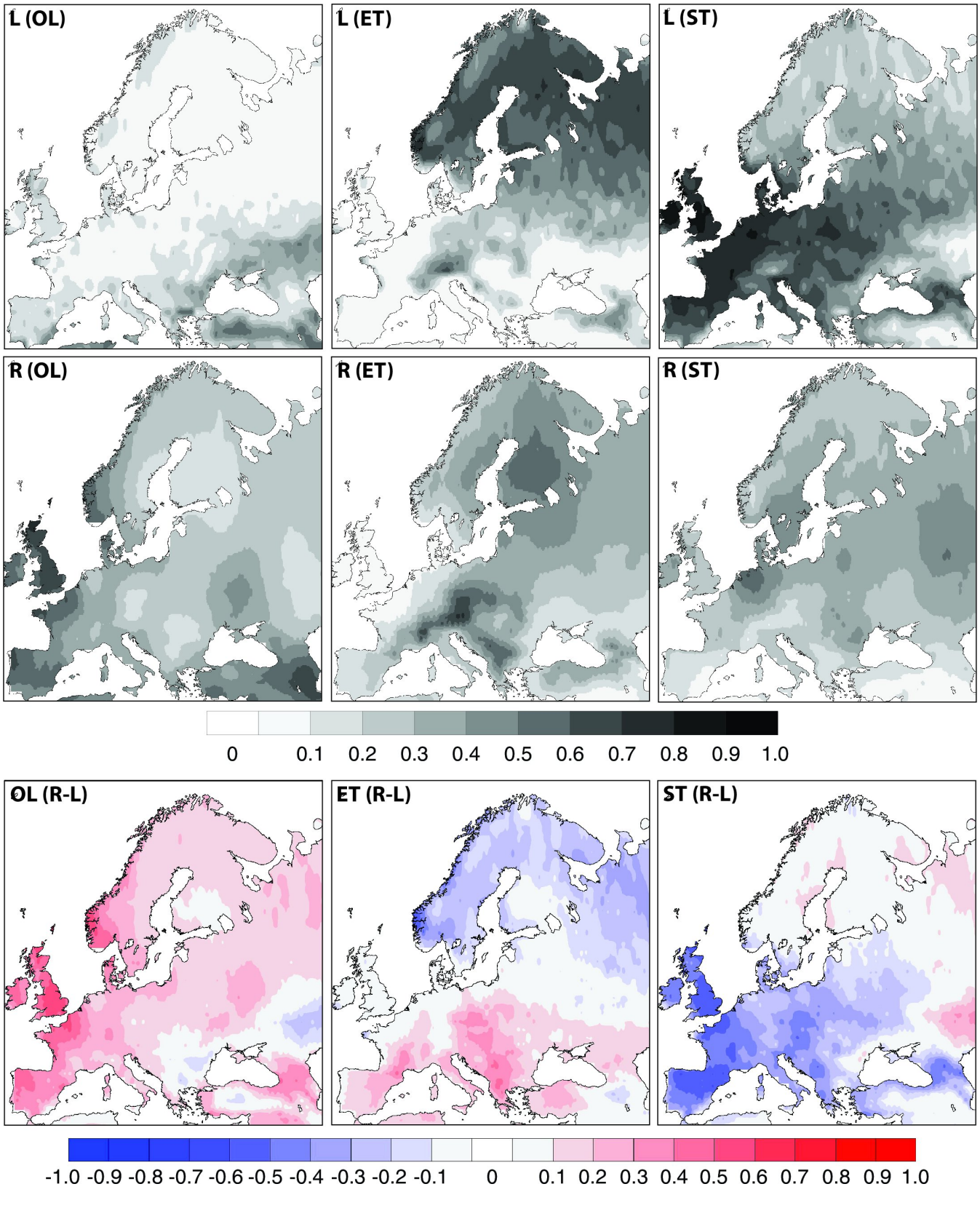
L (OL)
L (ET)
L (ST)
R (OL)
R (ET)
R (ST)
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
OL (R-L)
ET (R-L)
ST (R-L)
-1.0 -0.9 -0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

Fig A1 Upper panels: Cover (in fraction of grid cell) of open land (OL), evergreen trees (ET), and summer-green trees (ST) at 2.5 ka in Europe as, first row: simulated by LPJ-GUESS using climate input from EC-Earth (L), and second row: estimated using pollen data and the REVEALS model (R). Lower panels: Difference between L and R cover (R-L). See main text under methods and results for details.