

17 **Table S1** list of climate model simulations used in this study

18

RCM	GCM	RCP2.6 (27)	RCP4.5 (21)	RCP8.5 (61)
CLMcom-ETH-COSMO-crCLIM-v1-1	CNRM-CERFACS-CNRM-CM5			X
	ICHEC-EC-EARTH r1i1p1			X
	ICHEC-EC-EARTH r3i1p1			X
	ICHEC-EC-EARTH r12i1p1			X
	MOHC-HadGEM2-ES			X
	MPI-M-MPI-ESM-LR r1i1p1			X
	MPI-M-MPI-ESM-LR r2i1p1			X
	MPI-M-MPI-ESM-LR r3i1p1			X
	NCC-NorESM1-M			X
CLMcom-CCLM4-8-17	CCCma-CanESM2			X
	CNRM-CERFACS-CNRM-CM5		X	X
	ICHEC-EC-EARTH	X	X	X
	MIROC-MIROC5	X		X
	MOHC-HadGEM2-ES		X	X
	MPI-M-MPI-ESM-LR	X	X	X
CNRM-ALADIN63	MOHC-HadGEM2-ES			X
	MPI-M-MPI-ESM-LR			X
	NCC-NorESM1-M			X
	CNRM-CERFACS-CNRM-CM5	X	X	X
DMI-HIRHAM5	ICHEC-EC-EARTH r1i1p1			X
	ICHEC-EC-EARTH r3i1p1	X	X	X
	ICHEC-EC-EARTH r12i1p1			X
	IPSL-IPSL-CM5A-MR			X
	MPI-M-MPI-ESM-LR			X
	CNRM-CERFACS-CNRM-CM5			X
	MOHC-HadGEM2-ES	X	X	X
	NCC-NorESM1-M		X	X
GERICS-REMO2015	CCCma-CanESM2			X
	ICHEC-EC-EARTH	X	X	X
	IPSL-IPSL-CM5A-MR	X		X
	IPSL-IPSL-CM5A-LR			X
	MIROC-MIROC5	X		X
	MOHC-HadGEM2-ES	X	X	X

	MPI-M-MPI-ESM-LR			
	NCC-NorESM1-M	X	X	X
	NOAA-GFDL-GFDL-ESM2G	X		
	CNRM-CERFACS-CNRM-CM5	X		
ICTP-RegCM4-6	ICHEC-EC-EARTH			X
	MOHC-HadGEM2-ES	X		X
	MPI-M-MPI-ESM-LR	X		X
	NCC-NorESM1-M	X		X
	CNRM-CERFACS-CNRM-CM5			X
KNMI-RACMO22E	ICHEC-EC-EARTH r1i1p1		X	X
	ICHEC-EC-EARTH r3i1p1			X
	ICHEC-EC-EARTH r12i1p1	X	X	X
	IPSL-IPSL-CM5A-MR			X
	MPI-M-MPI-ESM-LR	X		X
	NCC-NorESM1-M	X		X
	CNRM-CERFACS-CNRM-CM5	X	X	X
	MOHC-HadGEM2-ES	X	X	X
SMHI-RCA4	CNRM-CERFACS-CNRM-CM5		X	X
	ICHEC-EC-EARTH r1i1p1			X
	ICHEC-EC-EARTH r3i1p1			X
	ICHEC-EC-EARTH r12i1p1	X	X	X
	IPSL-IPSL-CM5A-MR		X	X
	MOHC-HadGEM2-ES	X	X	X
	MPI-M-MPI-ESM-LR r1i1p1	X	X	X
	MPI-M-MPI-ESM-LR r2i1p1			X
	MPI-M-MPI-ESM-LR r3i1p1			X
	NCC-NorESM1-M	X	X	X
MOHC-HadREM3-GA7-05	ICHEC-EC-EARTH	X		X
	MOHC-HadGEM2-ES	X		X
	NCC-NorESM1-M			X
	MPI-M-MPI-ESM-LR			X

19
20
21
22