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*Supplement of*

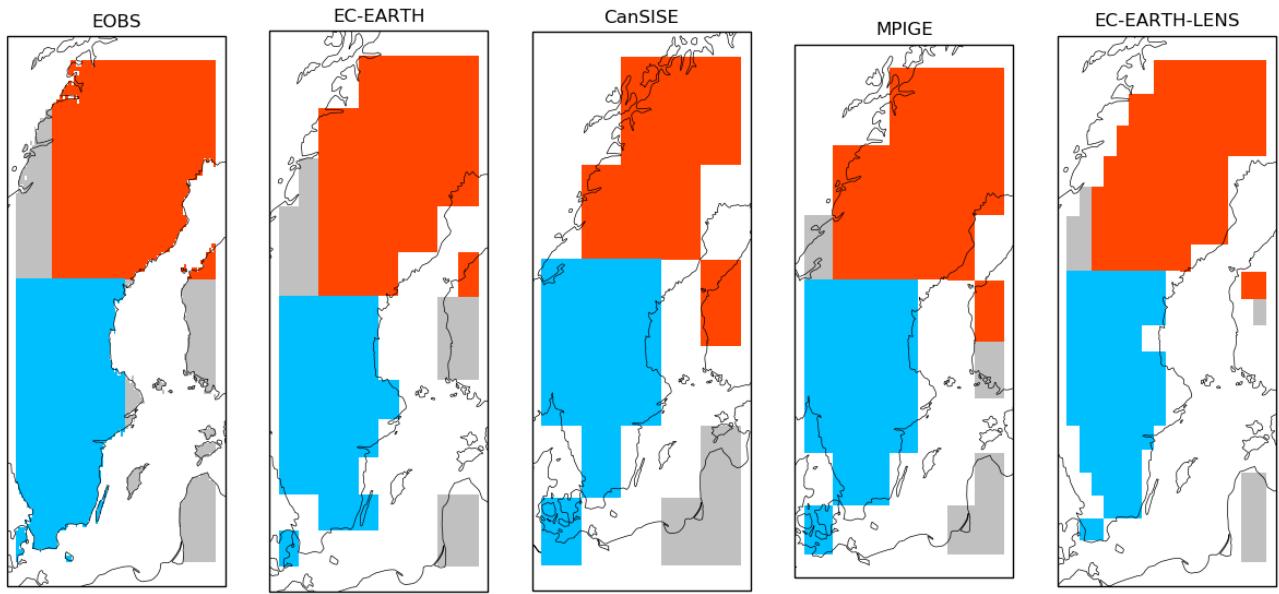
## **The extremely warm summer of 2018 in Sweden – set in a historical context**

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## Supplement



**Figure S1.** The maps show the land-sea mask of the models and illustrates how the distinction between northern (red) and southern (blue) Sweden has been made.



Figure S2. Observational stations operated in Sweden by SMHI used to calculate an average for the whole country.

10 **Table S1. CMIP5 members used in this study. Details on the CMIP5 ensemble can be found in Taylor et al. (2012).**

Model name	Version	Horizontal grid	Time resolution	Radiative forcing
ACCESS1-0	r1i1p1	192 × 145 N96	monthly	rcp 8.5
ACCESS1-3	r1i1p1	192 × 145 N96	monthly & daily	rcp 8.5
bcc-csm1-1	r1i1p1	T42 T42L26	monthly & daily	rcp 8.5
bcc-csm1-1-m	r1i1p1	T106	monthly & daily	rcp 8.5
BNU-ESM	r1i1p1	T42	monthly & daily	rcp 8.5
CanESM2	r1i1p1, r2i1p1, r3i1p1, r4i1p1, r5i1p1	Spectral T63	monthly & daily (r1i1p1)	rcp 8.5
CCSM4	r1i1p1, r2i1p1, r3i1p1, r4i1p1, r5i1p1, r6i1p1	0.9° × 1.25°	monthly	rcp 8.5
CMCC-CESM	r1i1p1	3.75° × 3.75° (T31)	monthly	rcp 8.5
CMCC-CM	r1i1p1	0.75° × 0.75° (T159)	monthly	rcp 8.5
CMCC-CMS	r1i1p1	1.875° × 1.875° (T63)	monthly	rcp 8.5
CNRM-CM5	r1i1p1, r2i1p1, r4i1p1, r6i1p1	TL127	monthly & daily (r1i1p1)	rcp 8.5
CSIRO-Mk3-6-0	r1i1p1, r2i1p1, r3i1p1, r4i1p1, r5i1p1, r6i1p1, r7i1p1, r8i1p1, r9i1p1	~1.875° × 1.875°	monthly	rcp 8.5
EC-EARTH	r1i1p1, r2i1p1, r8i1p1, r9i1p1, r12i1p1	1.125° longitudinal spacing, Gaussian grid T159L62	monthly & daily (r12i1p1)	rcp 8.5
FGOALS-g2	r1i1p1	2.8125° × 2.8125°	monthly	rcp 8.5
FIO-ESM	r1i1p1, r2i1p1, r3i1p1	T42	monthly	rcp 8.5
GFDL-CM3	r1i1p1	~200 km C48L48	monthly	rcp 8.5
GFDL-ESM2G	r1i1p1	2.5° longitude, 2° latitude M45L24	monthly	rcp 8.5
GFDL-ESM2M	r1i1p1	2.5° longitude, 2° latitude M45L24	monthly & daily	rcp 8.5
GISS-E2-H-CC	r1i1p1	Nominally 1°	monthly	rcp 8.5
GISS-E2-H	r1i1p1, r1i1p2, r1i1p3, r2i1p1, r2i1p3	2° latitude × 2.5° longitude F	monthly	rcp 8.5
GISS-E2-R-CC	r1i1p1	Nominally 1°	monthly	rcp 8.5
HadGEM2-AO	r1i1p1	1.875° in longitude by 1.25° in latitude N96	monthly	rcp 8.5

HadGEM2-CC	r1i1p1	1.875° in longitude by 1.25° in latitude N96	monthly	rcp 8.5
HadGEM2-ES	r1i1p1, r2i1p1, r3i1p1, r4i1p1	1.875° in longitude by 1.25° in latitude N96	monthly & daily (r1i1p1)	rcp 8.5
IMM-CM4	r1i1p1	2 × 1.5° in longitude and latitude latitudelongitude	monthly	rcp 8.5
IPSL-CM5A-LR	r1i1p1, r2i1p1, r3i1p1, r4i1p1	96 × 95 equivalent to 1.9° × 3.75° LMDZ96 × 95	monthly	rcp 8.5
IPSL-CM5A-MR	r1i1p1	144 × 143 equivalent to 1.25° × 2.5° LMDZ144 × 143	monthly & daily	rcp 8.5
IPSL-CM5B-LR	r1i1p1	96 × 95 equivalent to 1.9° × 3.75° LMDZ96 × 95	monthly & daily	rcp 8.5
MIROC5	r1i1p1, r2i1p1, r3i1p1	1.40625 × 1.40625° T85	monthly & daily (r1i1p1)	rcp 8.5
MIROC-ESM-	r1i1p1	2.8125 × 2.8125° T42	monthly & daily (r1i1p1)	rcp 8.5
CHEM				
MIROC-ESM	r1i1p1	2.8125 × 2.8125° T42	monthly	rcp 8.5
MPI-ESM-LR	r1i1p1, r2i1p1, r3i1p1	approx. 1.8° T63	monthly & daily (r1i1p1)	rcp 8.5
MPI-ESM-MR	r1i1p1	approx. 1.8° T63	monthly	rcp 8.5
MRI-CGCM3	r1i1p1	320 × 160 TL159	monthly	rcp 8.5
MRI-ESM1	r1i1p1	TL159(320 × 160)	monthly	rcp 8.5
NorESM1-ME	r1i1p1	Finite Volume 1.9° latitude, 2.5° longitude	monthly	rcp 8.5
NorESM1-M	r1i1p1	Finite Volume 1.9° latitude, 2.5° longitude	monthly & daily (r1i1p1)	rcp 8.5