

Model name	EP/NE ensemble	historical (CMIP6)	hist-1950 (H/P)	ssp585 (CMIP6)	highres-future (H/P)
ACCESS-CM2	NE	r1i1p1f1* r4i1p1f1* r5i1p1f1*	X	r1i1p1f1* r4i1p1f1* r5i1p1f1*	X
CanESM5	NE	r1i1p1f1 r2i1p2f1 r3i1p2f1 r4i1p2f1	X	r1i1p2f1* r2i1p1f1* r3i1p2f1* r4i1p2f1*	X
CESM2	NE	r4i1p1f1 r10i1p1f1 r11i1p1f1	X	r4i1p1f1 r10i1p1f1 r11i1p1f1	X
CNRM-CM6-1	NE	r1i1p1f2 r2i1p1f2 r3i1p1f2 r4i1p1f2	X	r1i1p1f2* r2i1p1f2* r3i1p1f2*	r1i1p1f2
CNRM-CM6-1-HR	EP	r1i1p1f2	X	r1i1p1f2*	r1i1p1f2
EC-Earth-3P	NE	X	r1i1p2f1 r2i1p2f1 r3i1p2f1	X	r1i1p2f1 r2i1p2f1 r3i1p2f1
EC-Earth-3P-HR	EP		r1i1p2f1 r2i1p2f1 r3i1p2f1		r1i1p2f1 r2i1p2f1 r3i1p2f1*
ECMWF-IFS-HR	EP	X	r1i1p1f1 r2i1p1f1 r3i1p1f1	X	X
ECMWF-IFS-LR	NE	X	r1i1p1f1 r2i1p1f1 r3i1p1f1	X	X
ECMWF-IFS-MR	EP	X	r1i1p1f1 r2i1p1f1 r3i1p1f1	X	X
GFDL-CM4	EP	r1i1p1f1	X	r1i1p1f1*	X
HadGEM3-GC31-HH	EP	X	X	X	r1i1p1f1
HadGEM3-GC31-HM	EP	X	X	X	r1i1p1f1 r1i2p1f1 r1i3p1f1
HadGEM3-GC31-LL	NE	r1i1p1f3 r2i1p1f3 r3i1p1f3 r4i1p1f3	X	r1i1p1f3* r2i1p1f3* r3i1p1f3* r4i1p1f3*	X
HadGEM3-GC31-MM	EP	r1i1p1f3 r2i1p1f3 r3i1p1f3 r4i1p1f3	X	r1i1p1f3* r2i1p1f3* r3i1p1f3* r4i1p1f3*	r1i1p1f1 r1i2p1f1 r1i3p1f1

INM-CM5-0	NE	r1i1p1f1	X	r1i1p1f1*	X
IPSL-CM6A-LR	NE	r1i1p1f1 r2i1p1f1 r3i1p1f1 r4i1p1f1	X	r1i1p1f1 r2i1p1f1 r3i1p1f1 r4i1p1f1	X
MIROC6	NE	r1i1p1f1 r2i1p1f1 r3i1p1f1	X	r1i1p1f1 r2i1p1f1 r3i1p1f1	X
MPI-ESM1-2-HR	NE	r1i1p1f1 r2i1p1f1 r3i1p1f1	X	r1i1p1f1 r2i1p1f1	r1i1p1f1
MPI-ESM1-2-LR	NE	r1i1p1f1 r2i1p1f1 r3i1p1f1 r4i1p1f1	X	r1i1p1f1 r2i1p1f1 r3i1p1f1 r4i1p1f1	X
MPI-ESM1-2-XR	NE	X	r1i1p1f1	X	r1i1p1f1
NorESM2-MM	NE	r1i1p1f1	X	r1i1p1f1	X
TaiESM1	NE	r1i1p1f1	X	r1i1p1f1	X
UKESM1-0-LL	NE	r1i1p1f2 r2i1p1f2 r3i1p1f2 r4i1p1f2	X	r1i1p1f2 r2i1p1f2 r3i1p1f2 r4i1p1f2	X

*: present for 21C period (2015-2099); EP: Eddy-Permitting; NE:Non-Eddying; H/P: HighResMIP/PRIMAVERA

Supplementary Table S1: Table summarizing the ensemble of 119 simulations (61 for historical, and 58 for future experiments). For ocean grid configurations, “NE” indicates climate models with a non-eddy ocean component’s resolution, and “EP” indicates climate models with an eddy-permitting ocean component’s resolution. For each model/experiment, the name of members used in the study are indicated. Stars indicate climate model simulations that were investigated over the 21st century (21C) period (2015-2099).

