

**Table S1.** Global Climate Models used to create both the CMIP5 and LOCA ensembles.

<b>Modeling Center or Group</b>	<b>Institute ID</b>	<b>Model Name</b>
Commonwealth Scientific and Industrial Research Organization (CSIRO) and Bureau of Meteorology (BOM), Australia	CSIRO-BOM	ACCESS1-0 ACCESS1-3
Beijing Climate Center, China Meteorological Administration	BCC	bcc-csm1-1-m
Canadian Centre for Climate Modelling and Analysis	CCCMA	CanESM2
National Center for Atmospheric Research	NCAR	CCSM4
Community Earth System Model Contributors	NSF-DOE-NCAR	CESM1-BGC CESM1-CAM5
Centro Euro-Mediterraneo per I Cambiamenti Climatici	CMCC	CMCC-CM CMCC-CMS
Commonwealth Scientific and Industrial Research Organization in collaboration with Queensland Climate Change Centre of Excellence	CSIRO-QCCCE	CSIRO-Mk3-6-0
EC-EARTH consortium	EC-EARTH	EC-EARTH
LASG, Institute of Atmospheric Physics, Chinese Academy of Sciences and CESS, Tsinghua University	LASG-CESS	FGOALS-g2
NOAA Geophysical Fluid Dynamics Laboratory	NOAA GFDL	GFDL-CM3 GFDL-ESM2G GFDL-ESM2M
NASA Goddard Institute for Space Studies	NASS GISS	GISS-E2-H GISS-E2-R
Institut Pierre-Simon Laplace	IPSL	IPSL-CM5A-LR IPSL-CM5A-MR
Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology	MIROC	MIROC5
Japan Agency for Marine-Earth Science and Technology, Atmosphere and Ocean Institute	MIROC	MIROC-ESM-CHEM

(The University of Tokyo), and National Institute for Environmental Studies		MIROC-ESM
Max Planck Institute for Meteorology	MPI-M	MPI-ESM-LR MPI-ESM-MR
Meteorological Research Institute	MRI	MRI-CGCM3
Norwegian Climate Centre	NCC	NorESM1-M

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