

## Supplementary Information for

# **Enhanced warming in drylands lake and its driver**

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### **Introduction**

This supplementary information section includes the details about list of 9 CMIP6 models and 2 figures that support the results discussed in the main text.

**Table S1 List of 9 CMIP6 models in this study**

<b>Model name</b>	<b>Modeling center</b>	<b>Spatial resolution</b>
CanESM5	Canadian Centre for Climate Modelling and Analysis, Environment and Climate Change Canada, Canada	128×64
CESM2-WACCM	National Center for Atmospheric Research, Climate and Global Dynamics Laboratory, United States	288×192
EC-Earth3	European Center-Earth- Consortium, Europe	512×256
INM-CM5-0	Institute for Numerical Mathematics, Russia	180×120
IPSL-CM6A-LR	Institute Pierre Simon Laplace, France	144×143
MIROC6	Atmosphere and Ocean Research Institute, Japan	256×128
MPI-ESM1-2-LR	Max Planck Institute for Meteorology, Germany	192×96
MRI-ESM2-0	Meteorological Research Institute, Japan	320×160
NorESM2-LM	Norwegian Climate Center, Norway	144×96

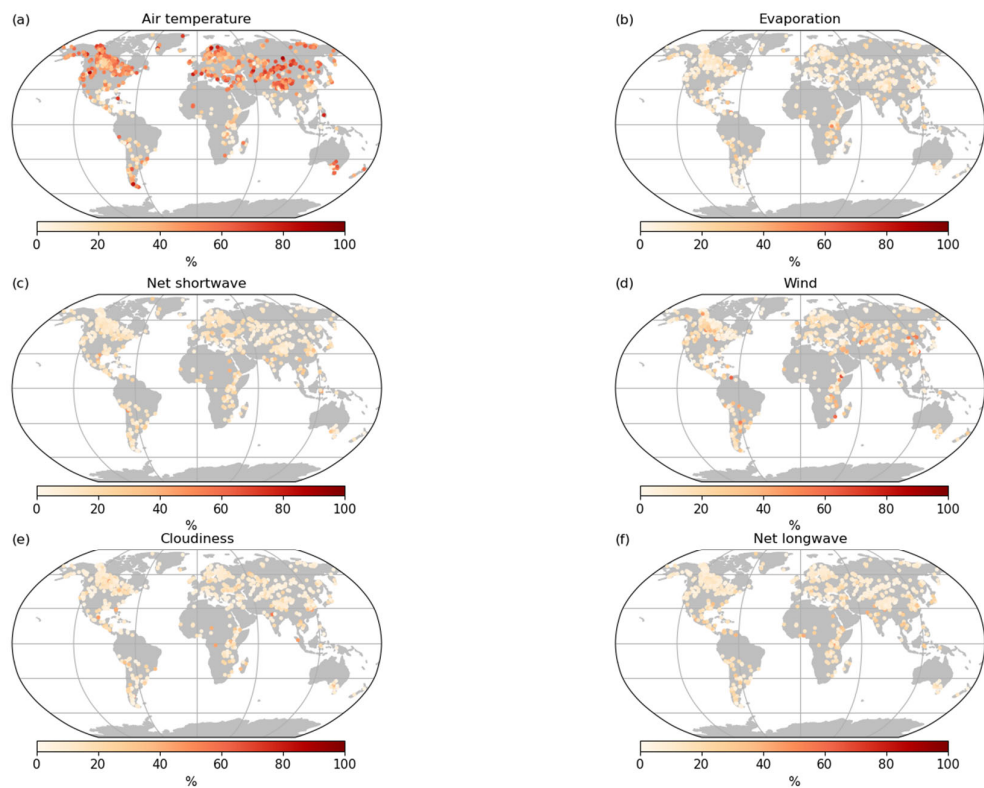


Figure S1. Relative contribution of air temperature (a), evaporation (b), net shortwave radiation (c), wind (d), cloudiness (e) and net longwave radiation (f) to the summer warming trend in global lakes.

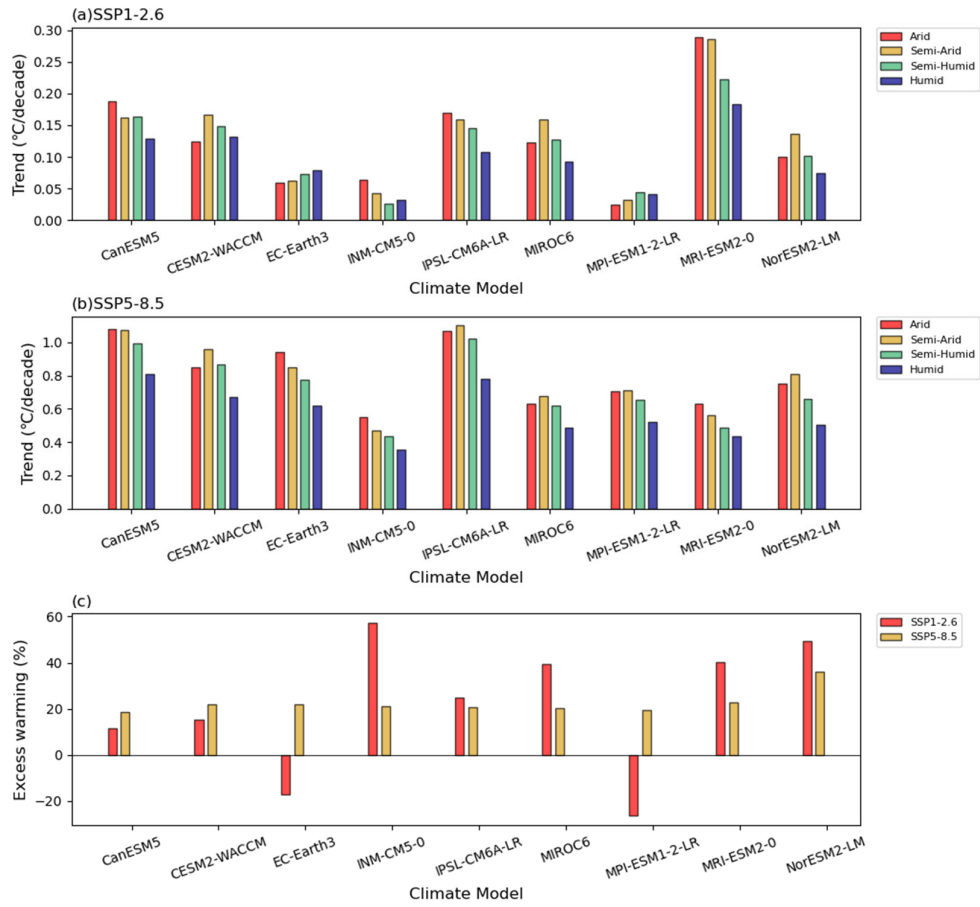


Figure S2. The summer air temperature trends of lakes in four climate zones under the SSP1-2.6 (a) and SSP5-8.5 (b) scenarios with 9 CMIP6 models. (c) Excess warming for each model under the SSP1-2.6 and SSP5-8.5 scenarios. Excess warming is calculated as  $(\text{trend\_drylands} - \text{trend\_humidsemihumid}) / \text{trend\_humidsemihumid} * 100$ .