

Supplementary Materials

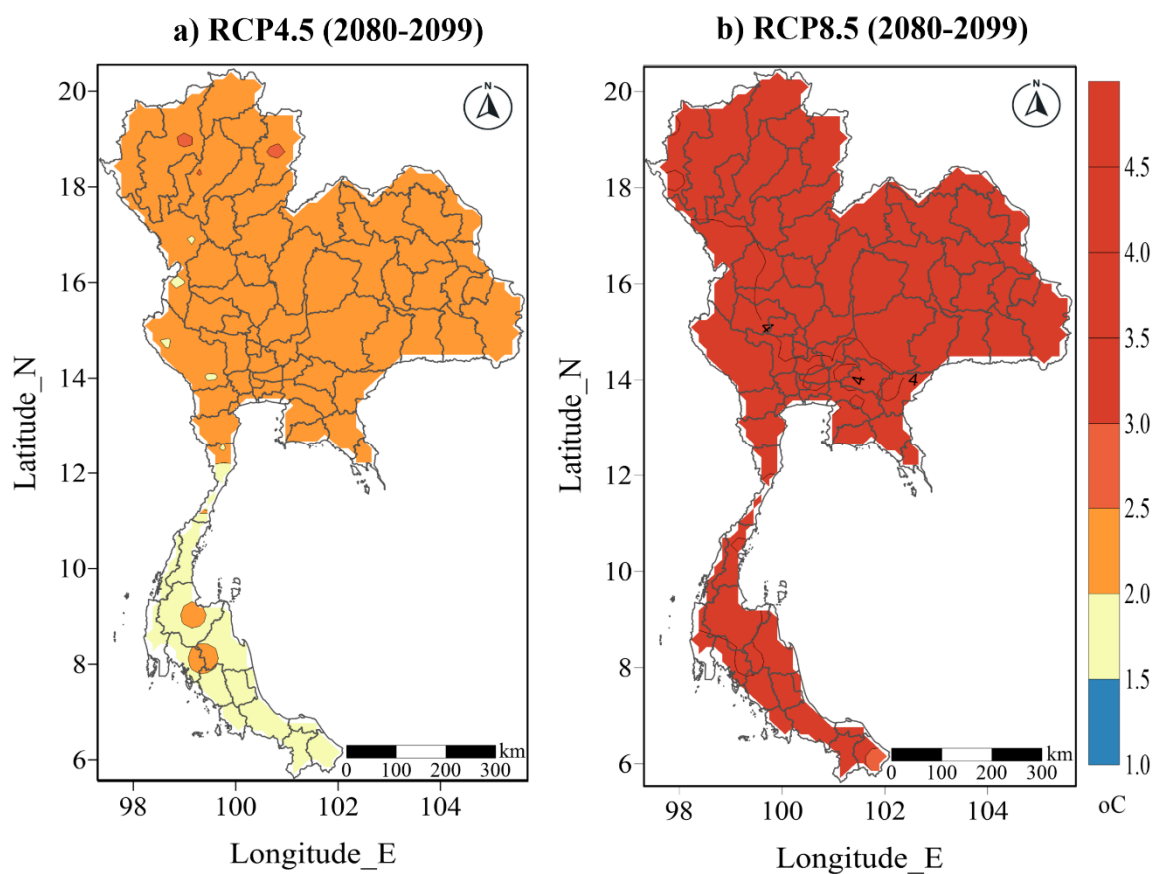


Fig. S1. Spatial maps of the ensemble mean of projected annual mean temperature under RCP4.5 and RCP8.5 scenarios over Thailand relative to pre-industrial values averaged from four downscaled climate models (CanESM2, GFDL-CM3, MIROC5 and NorESM1).

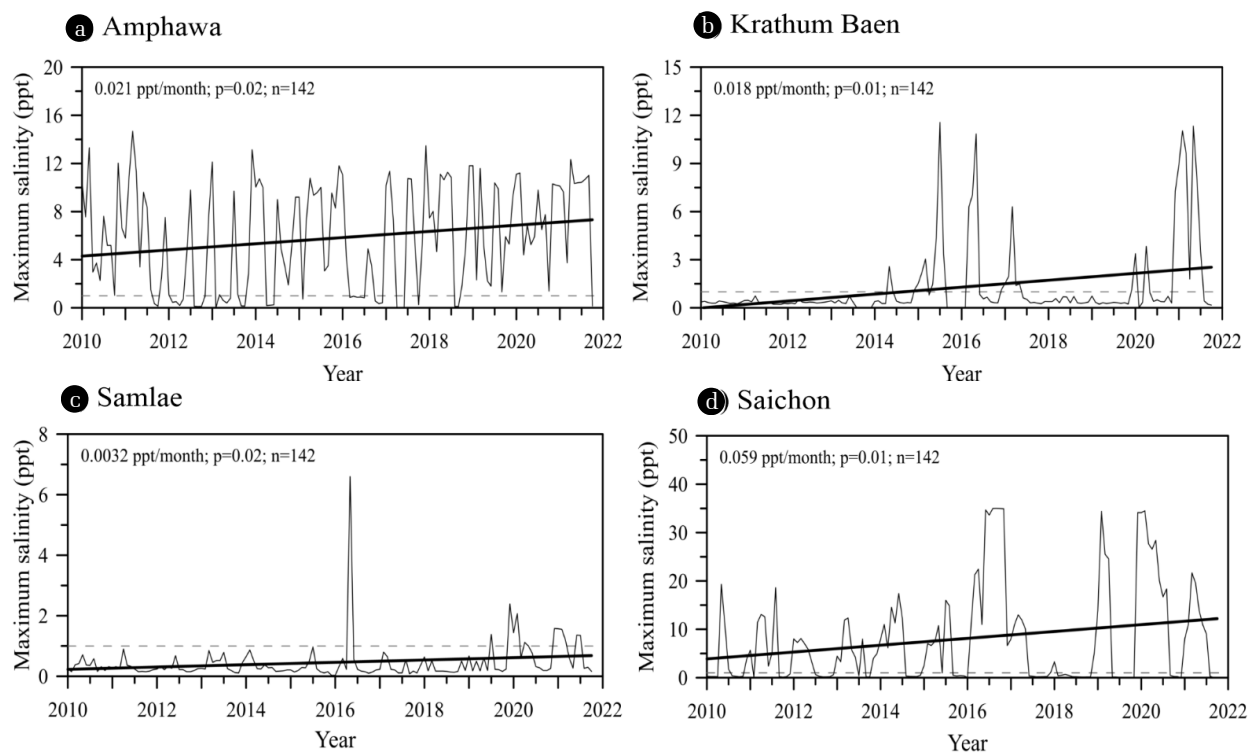


Fig. S2. Monthly maximum values of salinity at the selected stations located in the river mouths during 2010-2021. The Amphawa, Krathum Baen, Samlao and Saichon stations are located in the mouths of the Mae Klong River, Tha Chin River, Chao Phraya River, and Bang Pakong River, respectively.

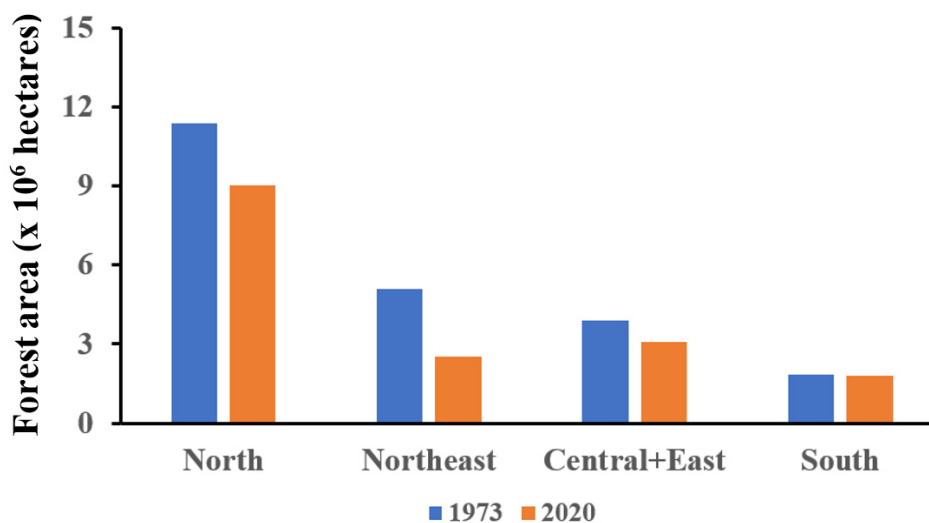


Fig. S3. Comparative changes in forest cover by regions between 1973 and 2020.

Table S1. Brief description of Atmosphere-Ocean General Circulation Models (AOGCMs) used in this study [1].

Research center	Model name	Horizontal/vertical resolution	
		AGCM	OGCM
Canadian Center for Climate Modelling and Analysis	Second Generation Canadian Earth System Model (CanESM2)	T63, L35	256 x 192, L40
NOAA Geophysical Fluid Dynamics Laboratory	Third Generation Coupled General Circulation Model of Geophysical Fluid Dynamics Laboratory (GFDL-CM3)	C48, L48	360 x 200, L50
Atmosphere and Ocean Research Institute, National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology	Fifth Generation Model for Interdisciplinary Research on Climate (MIROC5)	T85, L40	256 x 224, L50
Norwegian Climate Centre	Norwegian Earth System Model (NorESM1)	144 x 96, L26	384 x 320, L53

AGCM= Atmospheric General Circulation Model, OGCM=Ocean General Circulation Model

Table S2. Details of selected real-time automatic water quality monitoring stations of the Pollution Control Department (PCD) used in this study.

Station number	Station name	River	Distance from the river mouth (km)	% missing data
1	Amphawa	Mekong River	17	23.0
2	Krathum Baen	Tha Chin River	41	15.1
3	Samlae	Chao Phraya River	96	16.8
4	Saichon	Bang Pakong River	63	19.9

Table S3. Types of climate according to De Martonne aridity index (DMI) values [2].

Climate types	DMI values (mm/°C)
Semi-arid	$15 \leq \text{DMI} \leq 24$
Moderately-arid (Mediterranean)	$24 < \text{DMI} \leq 30$
Slightly-arid	$30 < \text{DMI} \leq 35$
Moderately-humid	$35 < \text{DMI} \leq 40$
Humid	$40 < \text{DMI} \leq 50$
Very-humid	$50 < \text{DMI} \leq 60$
Excessively-humid	$\text{DMI} > 60$

References

1. Chaowiwat W, Boonya-aroonnet S, Weesakul S. Impact of climate change assessment on agriculture water demand in Thailand. *NUEJ*. 2016;11:35-42. <https://doi.org/10.14456/nuej.2016.6>.
2. Pellicone G, Caloiero T, Guagliardi I. The De Martonne aridity index in Calabria (Southern Italy). *J. Maps*. 2019;15(2):788-796. <https://doi.org/10.1080/17445647.2019.1673840>.