

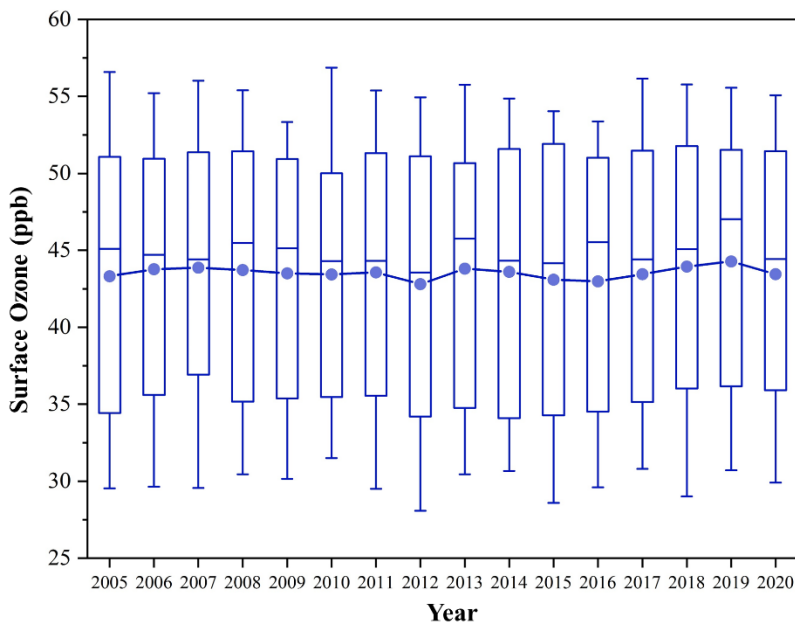
1 **Supplementary Information for**  
 2 **Recurrent mapping of Hourly Surface Ozone Data (HrSOD) across China**  
 3 **during 2005–2020 for ecosystem and human health risk assessment**

4  
 5 **Table S1.** Comparison with previous studies in temporal trends in surface ozone  
 6 concentrations in China.

Time Range	Metric	Annual mean	Growth rate	Reference
		concentration	cross China	
		(ppb)	(ppb yr <sup>-1</sup> )	
2013–2017	[O <sub>3</sub> ] MDA8	40.70	0.96 ( $p < 0.05$ )	Xue et al. (2020)
2005–2017	[O <sub>3</sub> ] MDA8	40.70 ± 5.18	0.63 (BTH; $p < 0.05$ )	Liu et al. (2020)
2013–2020	[O <sub>3</sub> ] MDA8	40.34	1.16 ( $p < 0.001$ )	Wei et al. (2022)
<b>2016–2020</b>	<b>[O<sub>3</sub>] MDA8</b>	<b>43.56</b>	<b>0.44 (<math>p &lt; 0.005</math>)</b>	This study

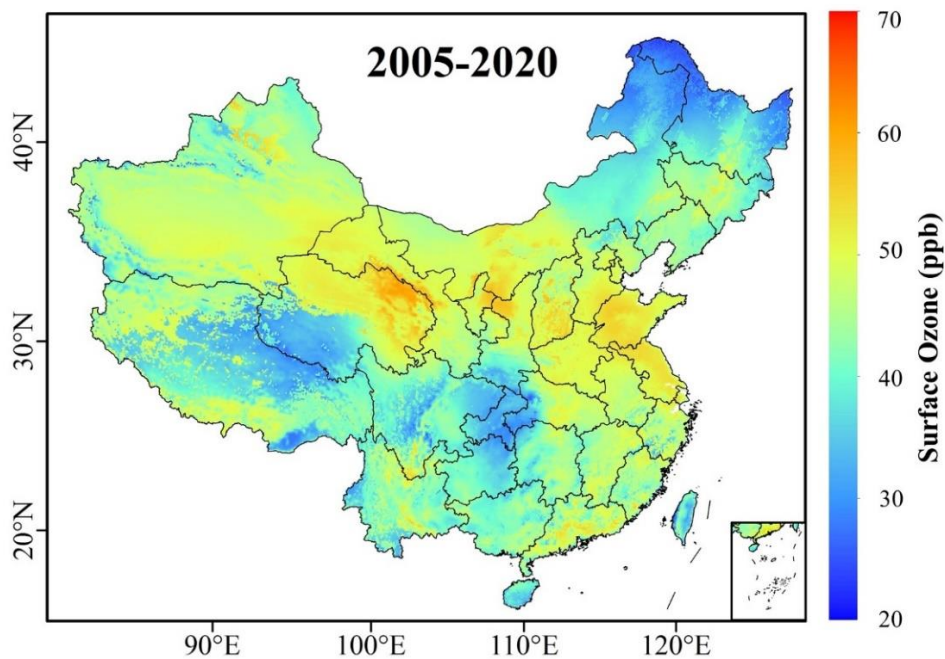
7 BTH: Beijing-Tianjin-Hebei region

8



9

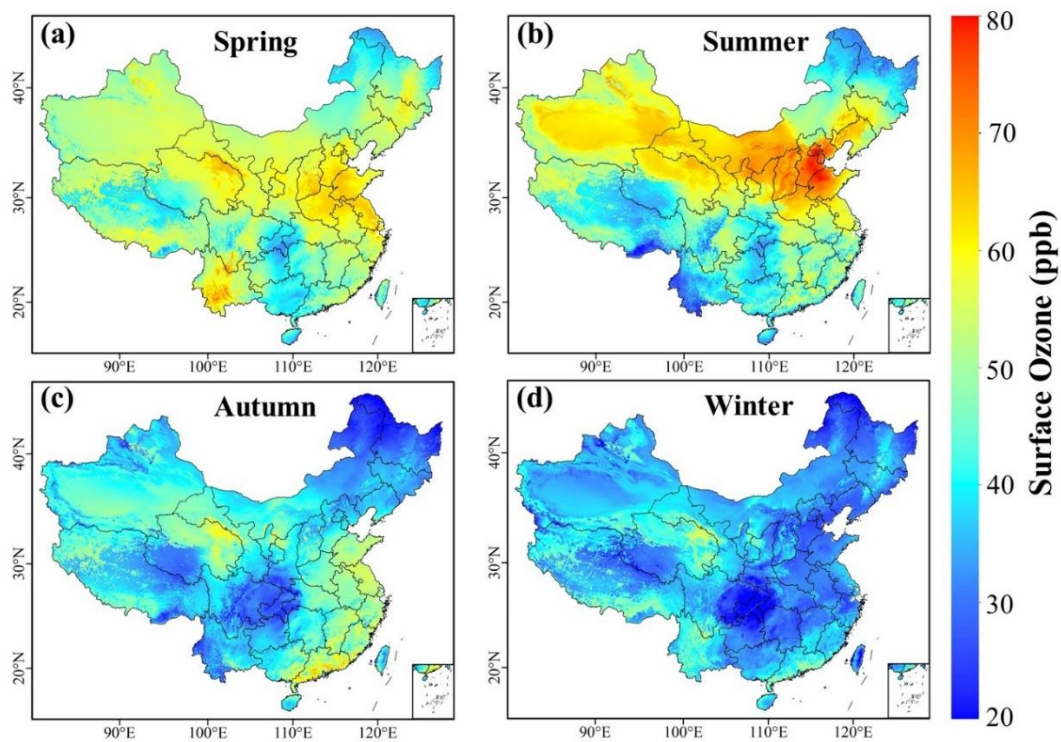
10 **Figure S1.** Interannual variations of mean MDA8 ozone concentrations over the  
 11 period 2005–2020 in China. Boxplots indicate the median (horizontal lines and  
 12 interquartile ranges (boxes); the whiskers specify the maximum and minimum values.



13

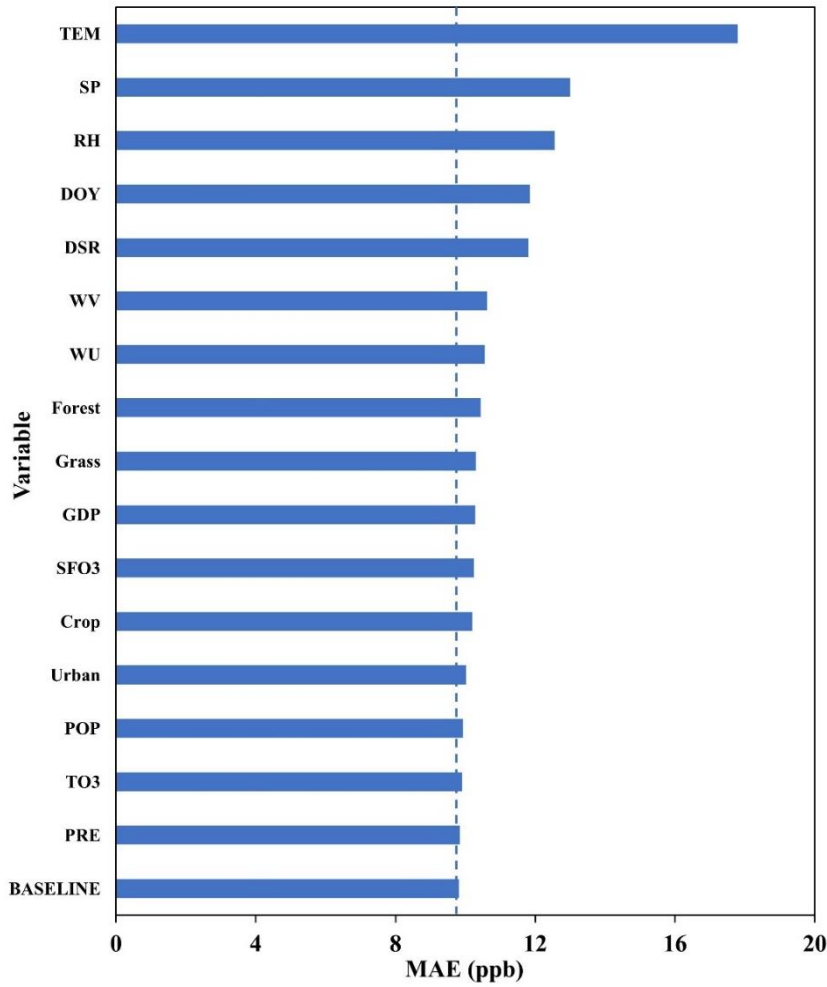
14 **Figure S2.** Spatial distributions of annual mean MDA8 O<sub>3</sub> concentrations from 2005  
 15 to 2020 across China.

16



17

18 **Figure S3.** Seasonal average MDA8 O<sub>3</sub> concentrations from 2005 to 2020 across China  
 19 in spring (a), summer (b), autumn (c) and winter (d).



20

21 **Figure S4.** The variable importance values of key variables for ozone estimates.  
 22 (TEM: 2-m air temperature; SP: Surface pressure; RH: Relative humidity; DOY: Day  
 23 of year; DSR: Downwelling surface radiation; WV: 10-m v-component of wind; WU:  
 24 10-m u-component of wind; POP: Population; GDP: Gross domestic production;  
 25 SFO<sub>3</sub>: Surface ozone concentration; TO<sub>3</sub>: Total column ozone; PRE: Precipitation)