

**Table S1.** BC, LU and HP variables selected for this study

Type	Code	Variables	Units
BC	var1	Mean diurnal range <sup>1,2</sup>	°C
	var2	The maximum temperature of the warmest month <sup>1</sup>	°C
	var3	The minimum temperature of the coldest month <sup>1</sup>	°C
	var4	Mean temperature of the wettest quarter <sup>1</sup>	°C
	var5	Mean temperature of driest quarter <sup>2</sup>	°C
	var6	Precipitation of the wettest month <sup>1,2</sup>	mm
	var7	Precipitation of the driest month <sup>1,2</sup>	mm
	var8	Precipitation of the warmest quarter <sup>1,2</sup>	mm
LU	var9	Forested primary land <sup>2</sup>	%
	var10	Non-forested primary land <sup>2</sup>	%
	var11	Potentially forested secondary land <sup>2</sup>	%
	var12	Potentially non-forested secondary land <sup>2</sup>	%
	var13	Rangeland <sup>2</sup>	%
	var14	Urban land <sup>2</sup>	%
	var15	Secondary mean biomass density <sup>2</sup>	kg C/m <sup>2</sup>
HP	var16	Human population density <sup>2</sup>	number of people/km <sup>2</sup>

Note: var1 to 8 are BC variables; var9 to 15 represent LU variables; and var16 is HP variable. <sup>1</sup>: the variables used in models for LIG and LGM periods; and <sup>2</sup>: the variables utilized for the models for 1970-2000 and 2050s.