Table S1. Remote sensing datasets

Satellite Sensor/ Data Type	Date	Use of the study
ETM+	03/08/2013,05/11/2013,08/15/2013, 01/22/2014,06/20/2016	Predict 8-day "Landsat-like" data as the fine LST input (Also, extract information of Land use/Land cover and LST in 06/28/2013 and 01/22/2014)
OLI-TIRS	04/10/2013,06/28/2013,10/10/2013, 11/11/2013,12/13/2013	
MOD11A1	Mar 2013 to Feb 2014	Predict 8-day "Landsat-like" data as the coarse LST input
MOD11A2	Mar 2013 to Feb 2014	Predict 8-day "Landsat-like" data as a reference of spatial features
MOD13Q1	Mar 2013 to Feb 2014	Predict monthly 30mn resolution NDVI data as the reference of spatial features

Table S2. Accuracy assessment of Land Use/Land Cover (LULC) classification.

Date	User Accuracy(%)				Overall Accuracy(%)	Kappa Coefficient
	ISA	Vegetation	Water	Bare Soil		
2013/06/28	99.55	82.36	95.78	84.67	89.25	0.86
2014/01/22	96.21	90.63	96.23	86.89	90.33	0.88
2016/06/20	98.35	87.22	97.46	83.24	91.27	0.90
2017/01/21	100	96.59	98.99	85.15	94.69	0.94

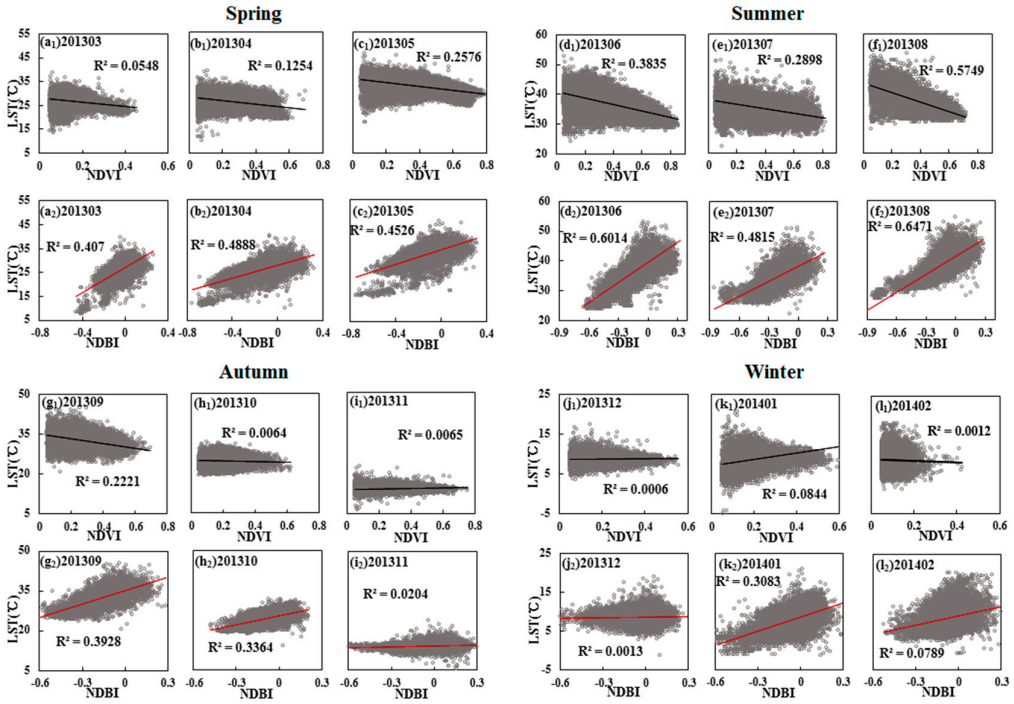

Figure S1. The monthly series about the correlations of LST with NDVI and NDBI in 2013.