

Figure S1. Spatial distribution of land use in the Beijing-Tianjin-Hebei region from 2010–2018. (a) 2010; (b) 2018.

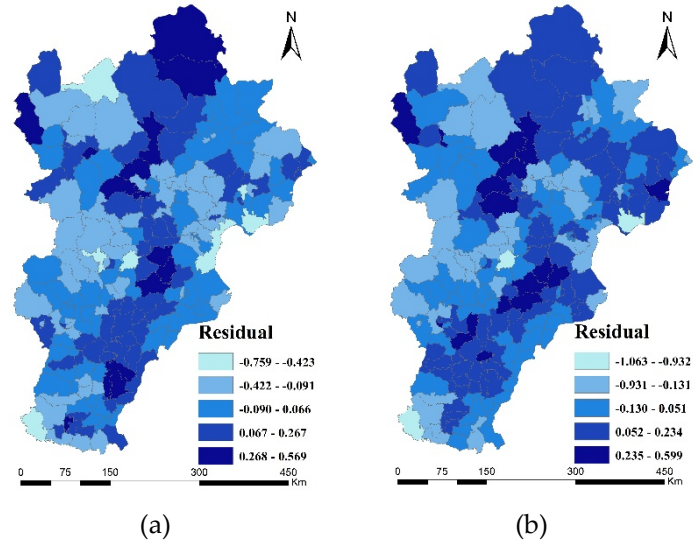


Figure S2. Spatial distribution of OLSR model's residual in the Beijing-Tianjin-Hebei region from 2010–2018. (a) 2010; (b) 2018.

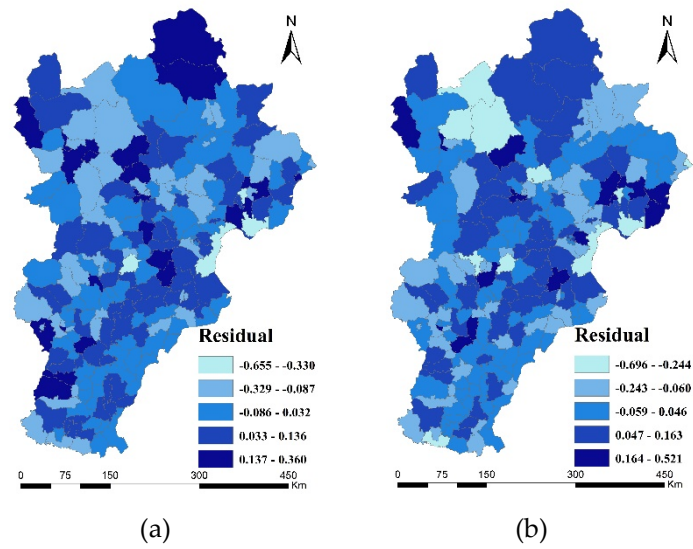


Figure S3. Spatial distribution of MGWR model's residual in the Beijing-Tianjin-Hebei region from 2010–2018. (a) 2010; (b) 2018.

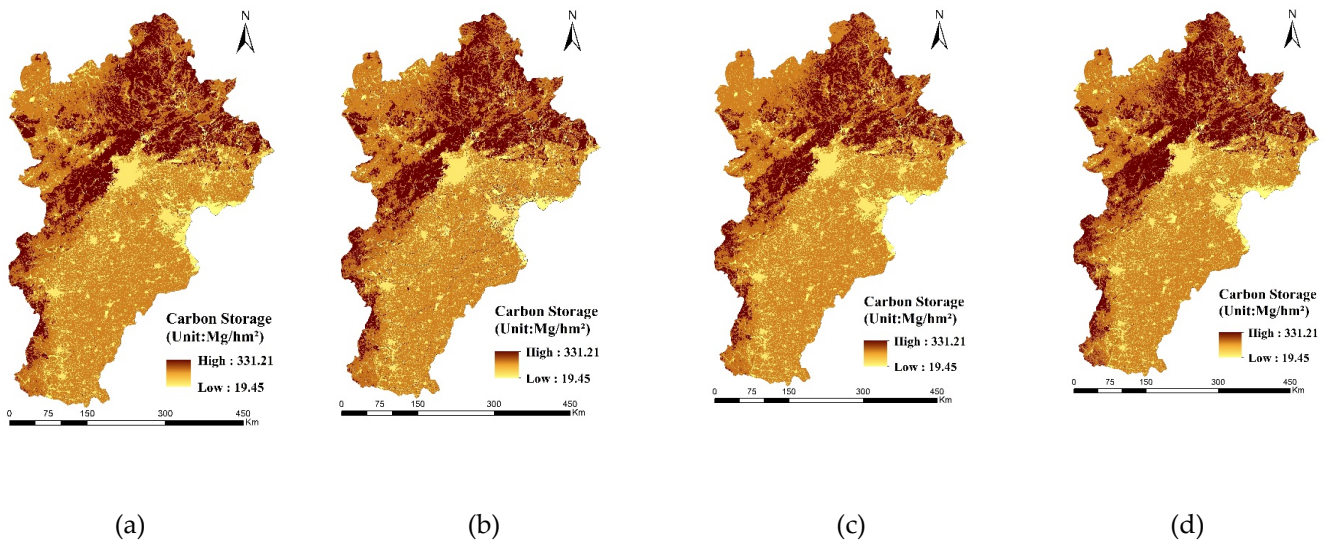


Figure. S4 Simulation results of carbon storage in 2030 (a): Natural Development; (b): Woodland buffer zone; (c): Agricultural expansion; (d): Forest rehabilitation from slope agriculture

Table. S1 The abbreviations and their definitions for all the figures and tables involved in the paper.

Abbreviation	Definition
BUA	built-up area
NTL	nighttime light
PD	population density
UISA	impervious surface in urban areas
NDVI	normalized difference vegetation index
PM _{2.5}	fine particulate matter
RH	relative humidity
DEM	digital elevation model

WS	wind speed
C	Carbon storage
AGC	aboveground carbon
BGC	belowground carbon
SOC	soil organic carbon
DOC	dead organic carbon
STD	standard deviation
AIC _c	Akaike information criterion value
CHAP	ChinaHighAirPollutants datasets
SRTM	Shuttle Radar Topography Mission
