

Zhang, Hui; Zhang, Xin; Shang, Yi; Kattel, Giri; Miao, Lijuan

**Article — Published Version**

## Continuously vegetation greening over Inner Mongolia for the past three decades

Remote Sensing

**Provided in Cooperation with:**

Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale)

*Suggested Citation:* Zhang, Hui; Zhang, Xin; Shang, Yi; Kattel, Giri; Miao, Lijuan (2021) : Continuously vegetation greening over Inner Mongolia for the past three decades, Remote Sensing, ISSN 2072-4292, MDPI, Basel, Vol. 13, Iss. 13,  
<https://doi.org/10.3390/rs13132446>

This Version is available at:

<https://hdl.handle.net/10419/235485>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

## Supplementary Materials

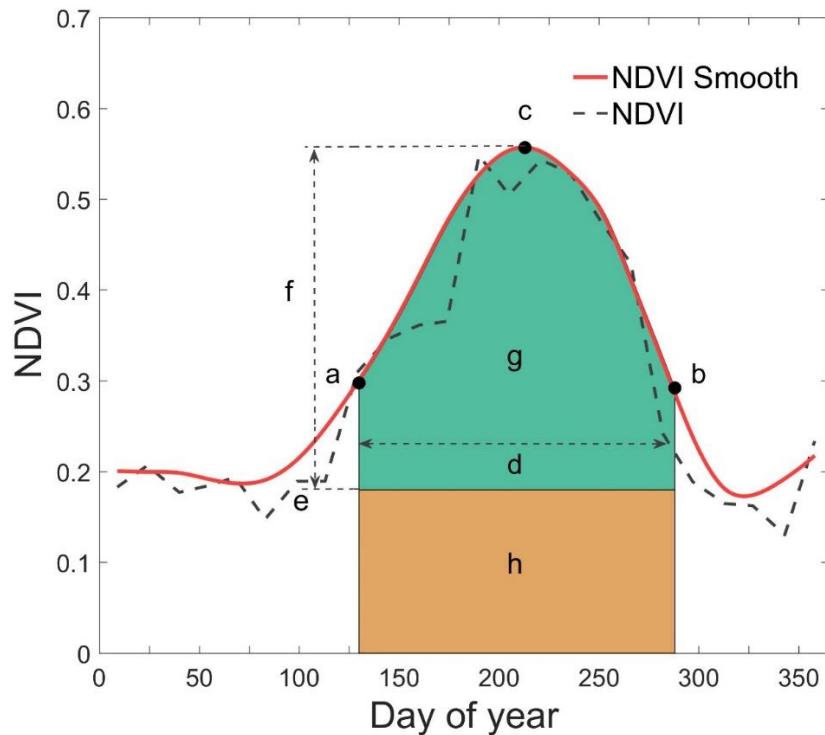


Figure S1. The calculation process of NDVI (large/small) integrals. a and b represent the points of the onset and the end of vegetation growing season, respectively; c displays the point with the largest NDVI value; d displays the seasonal length and e means the base level; f displays the seasonal amplitude; g and h are the accumulation of chlorophyll in vegetation during the growing season.

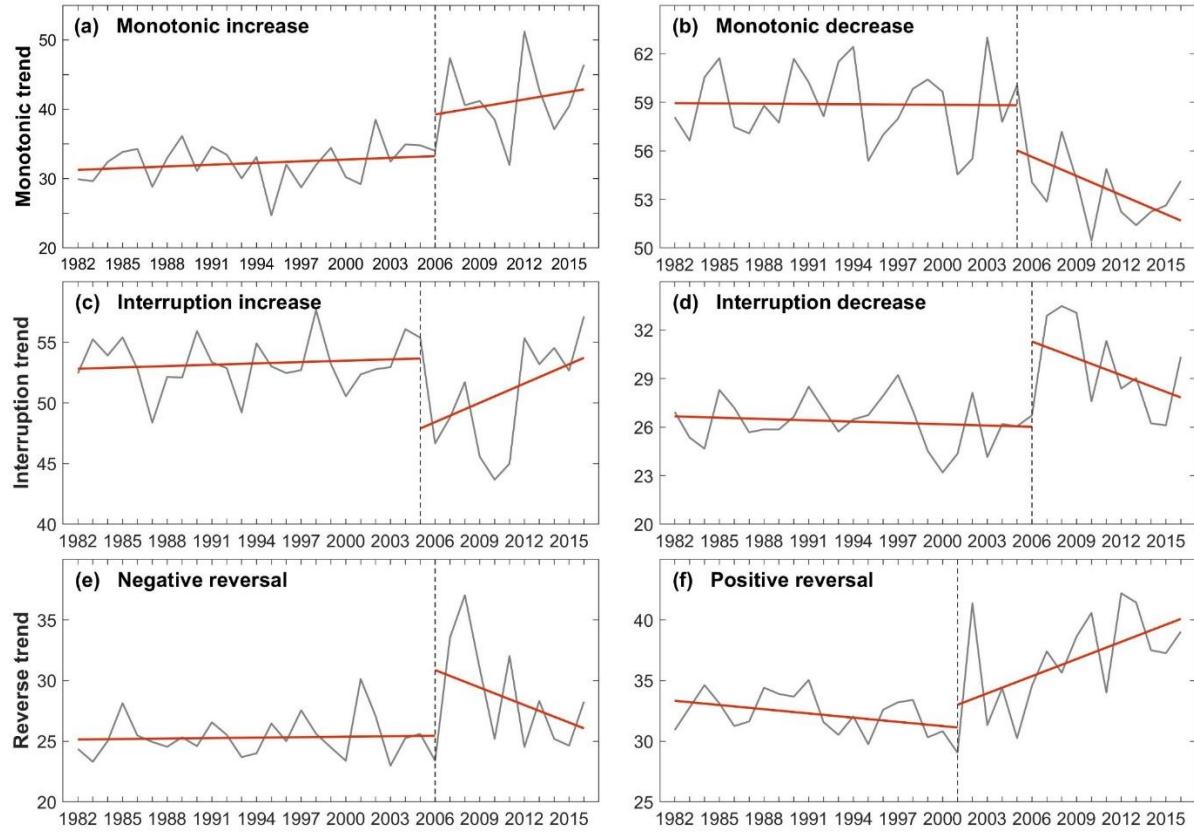


Figure S2. Examples of six trend shifts based on NDVI large integral. **(a)-(b):** monotonic trend; **(c)-(d):** interruption trend; **(e)-(f):** reverse trend. The grey represents the NDVI large integral time series and the red line indicate that the fitted trend for each segment. The dotted vertical line indicates the year of the detected breakpoint.

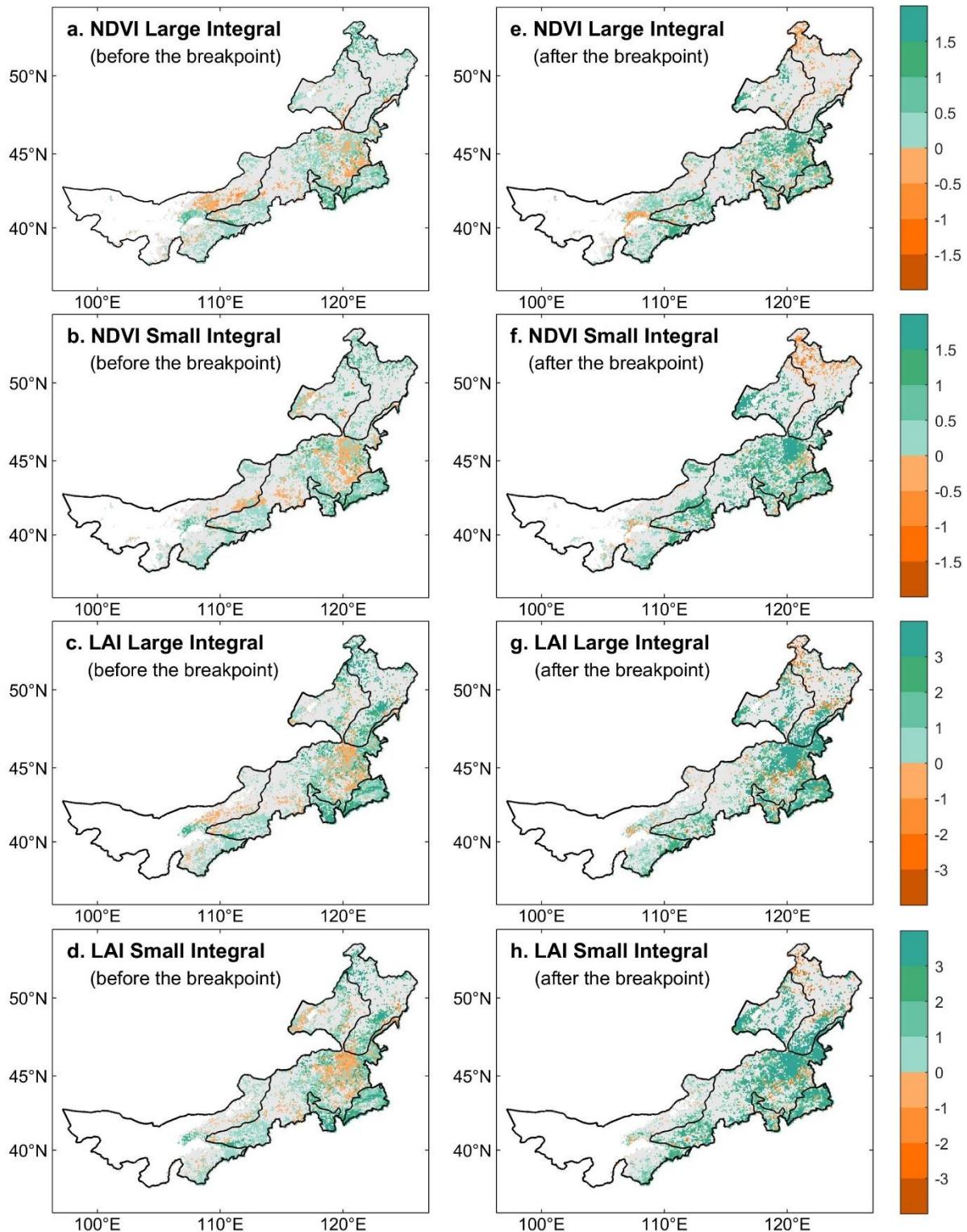


Figure S3. Spatial distribution of trends before and after the breakpoints, (a)-(d) shows the trends of NDVI/LAI integrals before the breakpoints, (e)-(h) shows the trends of NDVI/LAI integrals after the breakpoints. Pixels with no breakpoint are reported in grey while white areas indicate regions with no data (i.e., non-vegetated areas or missing data).

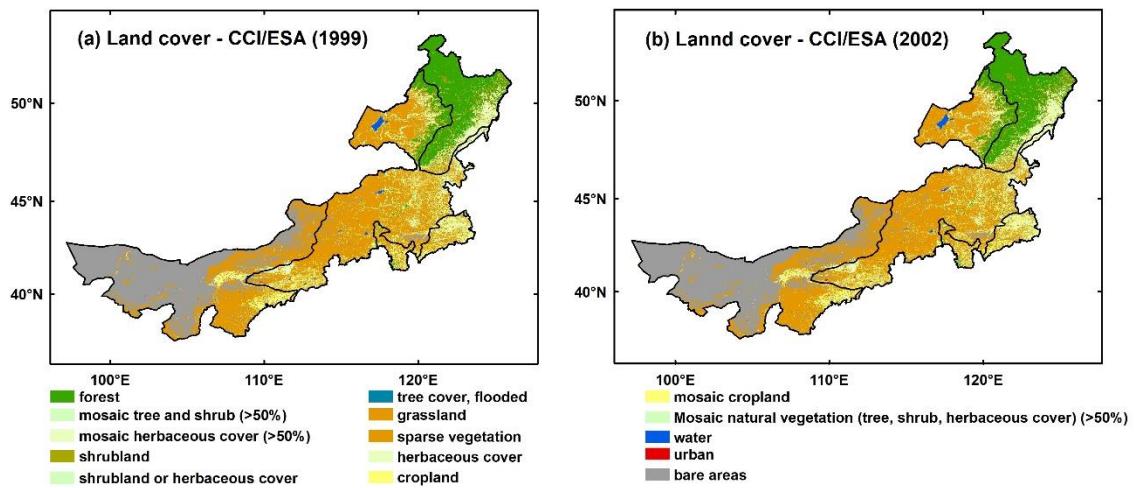


Figure S4. Land cover map provided by ESA-CCI. (a) Land cover in 1999. (b) Land cover in 2002.