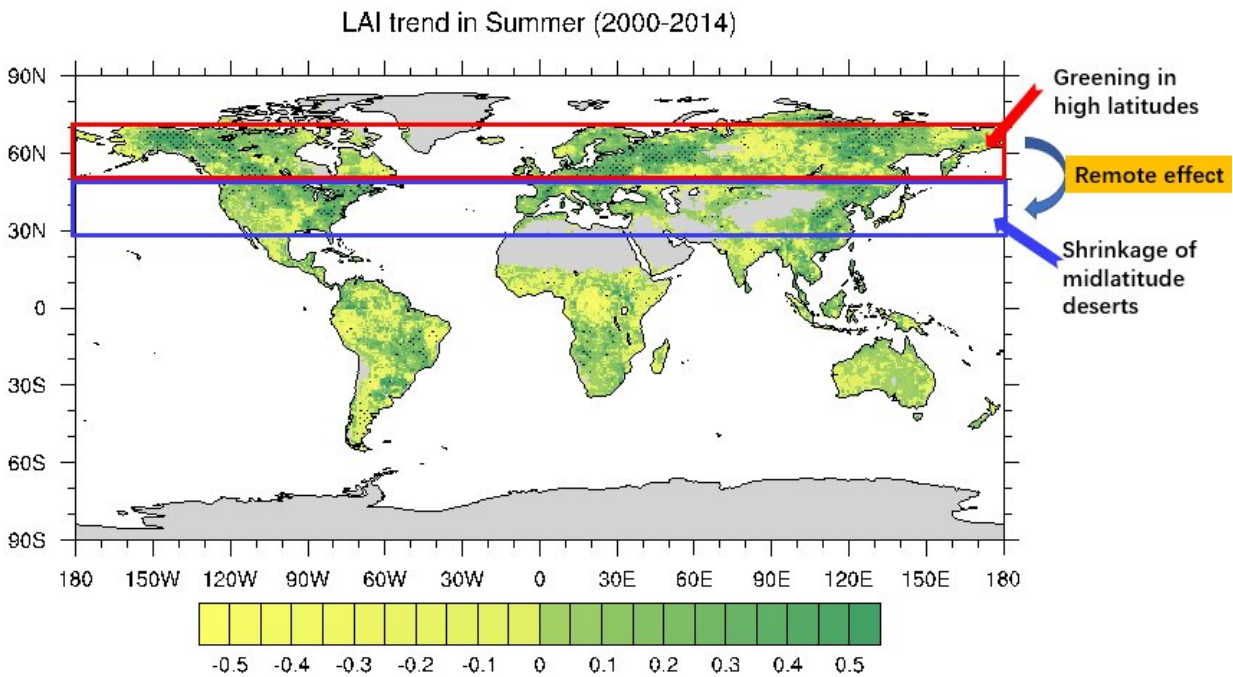


# Greening at high latitudes may inhibit the expansion of midlatitude deserts

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Schematic diagram of the remote effect of high-latitude greening on midlatitude deserts. Credit: CAS

Desertification has always been a serious challenge for human beings, especially in arid and semi-arid regions. Projections from CMIP5 support the expansion of arid and semi-arid regions with increasing greenhouse gas concentrations. Interestingly, besides inducing a stronger greenhouse effect, increasing carbon dioxide is also leading to global

vegetation greening, especially in high latitudes, by the fertilization effect. However, it is still unknown whether greening in high latitudes could affect mid-latitude deserts.

In a [paper](#) recently published in *Atmospheric and Oceanic Science Letters*, Dr. Yongli He from the department of Atmospheric Science, Lanzhou University, and his coauthors, try to address this question based on their work on the remote effect of greening in [high latitudes](#).

"We investigated the remote effects of greening at high latitudes by using a two-dimensional energy balance model. We decreased the albedo in high latitudes to represent the greening phenomenon, and then investigated the changes in the boundaries of mid-latitude deserts. We found that the mid-latitude deserts retreated significantly at the southern boundary, while the polar ice belts and low-latitude vegetation belts expanded," says Dr. He.

According to this study, high-latitude vegetation greening may inhibit the expansion of mid-latitude deserts. "However, due to the simplification of the two-dimensional energy balance model, the impact of high-latitude vegetation greening on the climate of mid-latitude desert regions still needs further study," adds Dr. He.

**More information:** Lu BI et al, The global response of temperature to high-latitude vegetation greening in a two-dimensional energy balance model, *Atmospheric and Oceanic Science Letters* (2019). [DOI: 10.1080/16742834.2020.1696650](https://doi.org/10.1080/16742834.2020.1696650)

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