Supplementary Material

# Supplementary Figures and Tables

## Supplementary Figures

CV图研究区是草地

**Supplementary Figure 1.** Spatial distribution of NDVI fluctuation state in the study area from 1981 to 2015.The frequency histogram displaying the areal proportions (%) of corresponding states is inset.

NDVIsignificancetest

**Supplementary Figure 2.** Spatial distribution of the significance of interannual variation trends in NDVI in the study area from 1981 to 2015. Dark green and light yellow pixels indicate areas where the trends were significant at p < 0.05.The frequency histogram displaying the areal proportions (%) of corresponding regions is inset.

相关系数A相关系数B相关系数C

**Supplementary Figure 3.** Spatial distribution of correlation coefficients between NDVI and climate variables. Panels A, B, and C represent the correlation coefficients between NDVI and precipitation, temperature, and VPD, respectively.

## Supplementary Tables

**Supplementary Table 1.** Criteria for NDVI response pattern identification and contribution calculation. SO, SC and SH represent the slopes of observation NDVI, climate-induced NDVI and human-induced NDVI, respectively.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Vegetation trends | Division Standard | | Drivers | Contribution Rate | |
| slope | slope | Climate | Human |
|  | Increase | >0 | >0 | Both climate change  and human activities (Cc-Ha) |  |  |
| >0 | <0 | Climate change (Cc) | 100 | 0 |
| <0 | >0 | Human activities (Ha) | 0 | 100 |
|  | Decrease | <0 | <0 | Both climate change  and human activities (Cc-Ha) |  |  |
| <0 | >0 | Climate change (Cc) | 100 | 0 |
| >0 | <0 | Human activities (Ha) | 0 | 100 |

**Supplementary Table 2.** Criteria for Identifying NDVI Response Patterns to Meteorological Factors.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NDVI slope | Vegetation trend |  |  |  | Drivers |
|  | Increase |  |  |  | Together with temperature, precipitation, and VPD (T-P-V) |
|  |  |  | Both temperature and precipitation (T-P) |
|  |  |  | Both temperature and VPD (T-V) |
|  |  |  | Both precipitation and VPD (P-V) |
|  |  |  | Temperature (T) |
|  |  |  | Precipitation (P) |
|  |  |  | VPD(V) |
|  | Decrease |  |  |  | Together with temperature, precipitation, and VPD (T-P-V) |
|  |  |  | Both temperature and precipitation (T-P) |
|  |  |  | Both temperature and VPD (T-V) |
|  |  |  | Both precipitation and VPD (P-V) |
|  |  |  | Temperature (T) |
|  |  |  | Precipitation (P) |
|  |  |  | VPD(V) |