

Supplementary Materials:

Table S1. Standard deviation and coefficient of variation of LAI fitting trend for different land cover types.

LAI	standard deviation	coefficient of variation
cropland 1982-2002	0.0665	0.0622
cropland 2003-2015	0.0265	0.0235
forest 1982-2002	0.0572	0.0321
forest 2003-2015	0.0230	0.0128
grassland 1982-2002	0.0320	0.0609
grassland 2003-2015	0.0166	0.0306
tundra 1982-2002	0.0152	0.0438
tundra 2003-2015	0.0092	0.0251
barren land 1982-2002	0.0063	0.0858
barren land 2003-2015	0.0039	0.0481
snow/ice 1982-2002	0.0004	0.0997
snow/ice 2003-2015	0.0002	0.0543

Table S2. Standard deviation and coefficient of variation of blue-sky albedo fitting trend for different land cover types.

blue-sky albedo	standard deviation	coefficient of variation
cropland 1982-2002	0.0052	0.0290
cropland 2003-2015	0.0028	0.0166
forest 1982-2002	0.0057	0.0264
forest 2003-2015	0.0016	0.0080
grassland 1982-2002	0.0069	0.0229
grassland 2003-2015	0.0042	0.0145
tundra 1982-2002	0.0091	0.0180
tundra 2003-2015	0.0051	0.0105
barren land 1982-2002	0.0071	0.0247
barren land 2003-2015	0.0020	0.0072
snow/ice 1982-2002	0.0159	0.0223
snow/ice 2003-2015	0.0033	0.0049

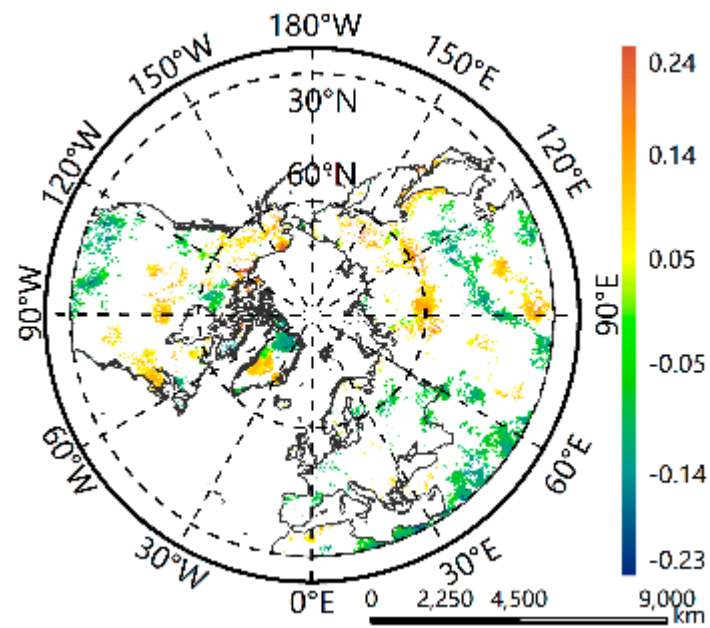


Figure S1. Spatial distribution of significant trends in annual mean scPDSI ($p < 0.05$).

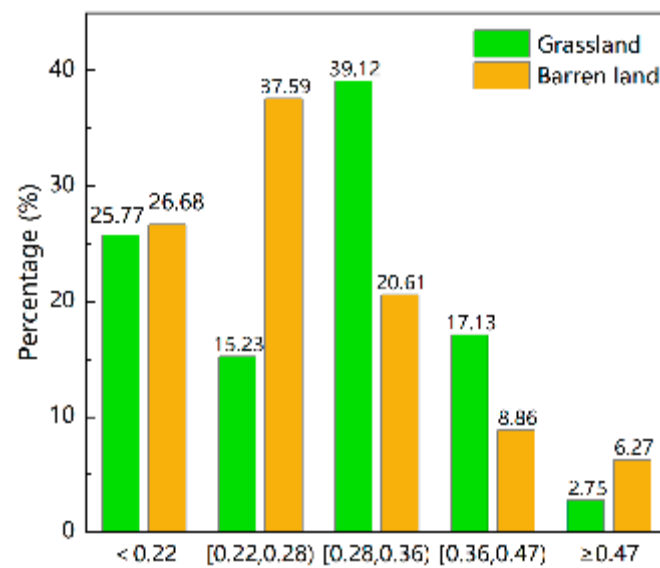


Figure S2. The frequency distribution histogram of blue-sky albedo in grassland and barren land.

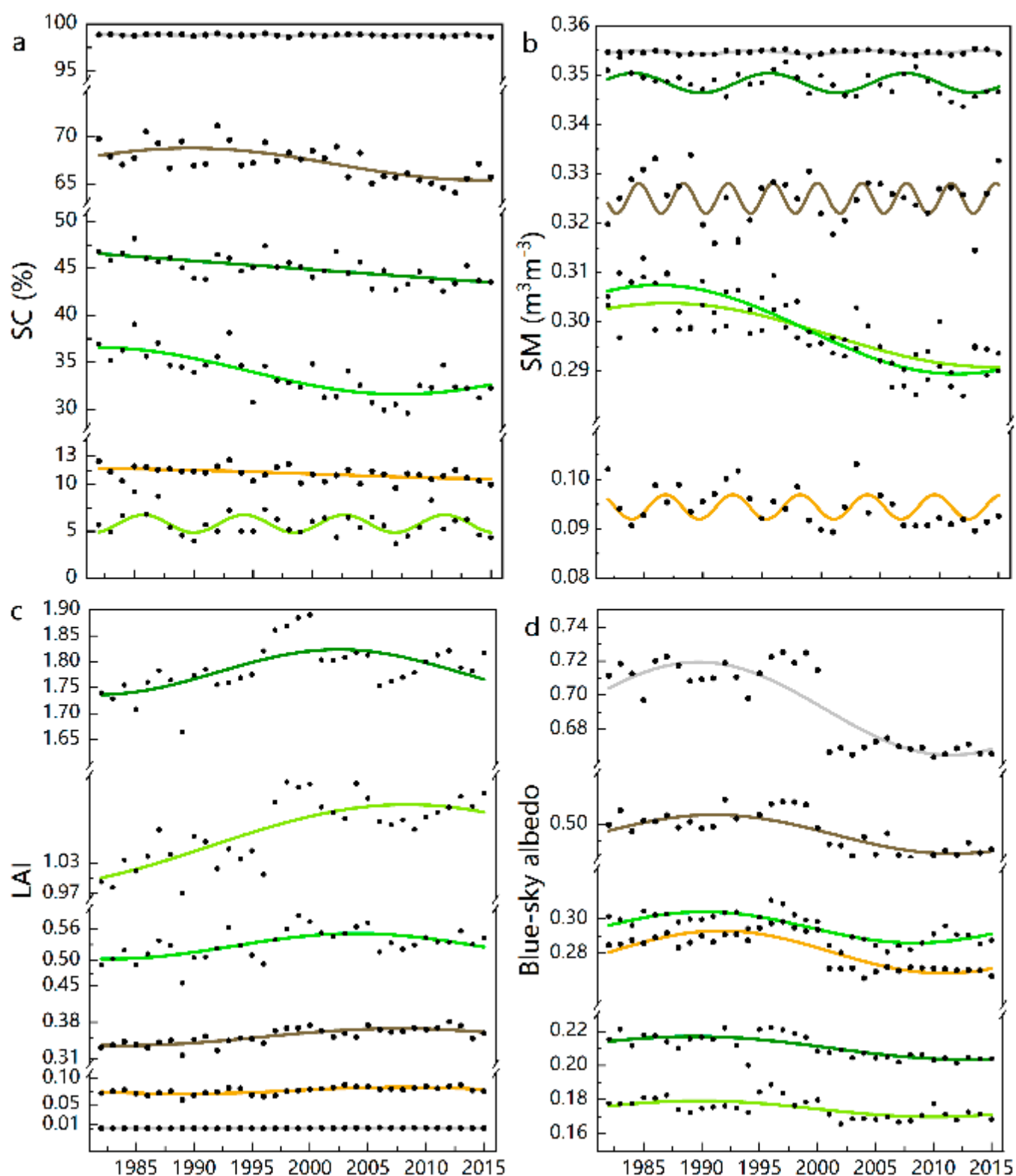


Figure S3. The trends of annual mean SC (a), SM (b), LAI (c) and blue-sky albedo (d) for the entire study area and different land cover types, with colors of fitting lines corresponding to the colors in the legend in the Figure 1a.