

Supplementary Materials

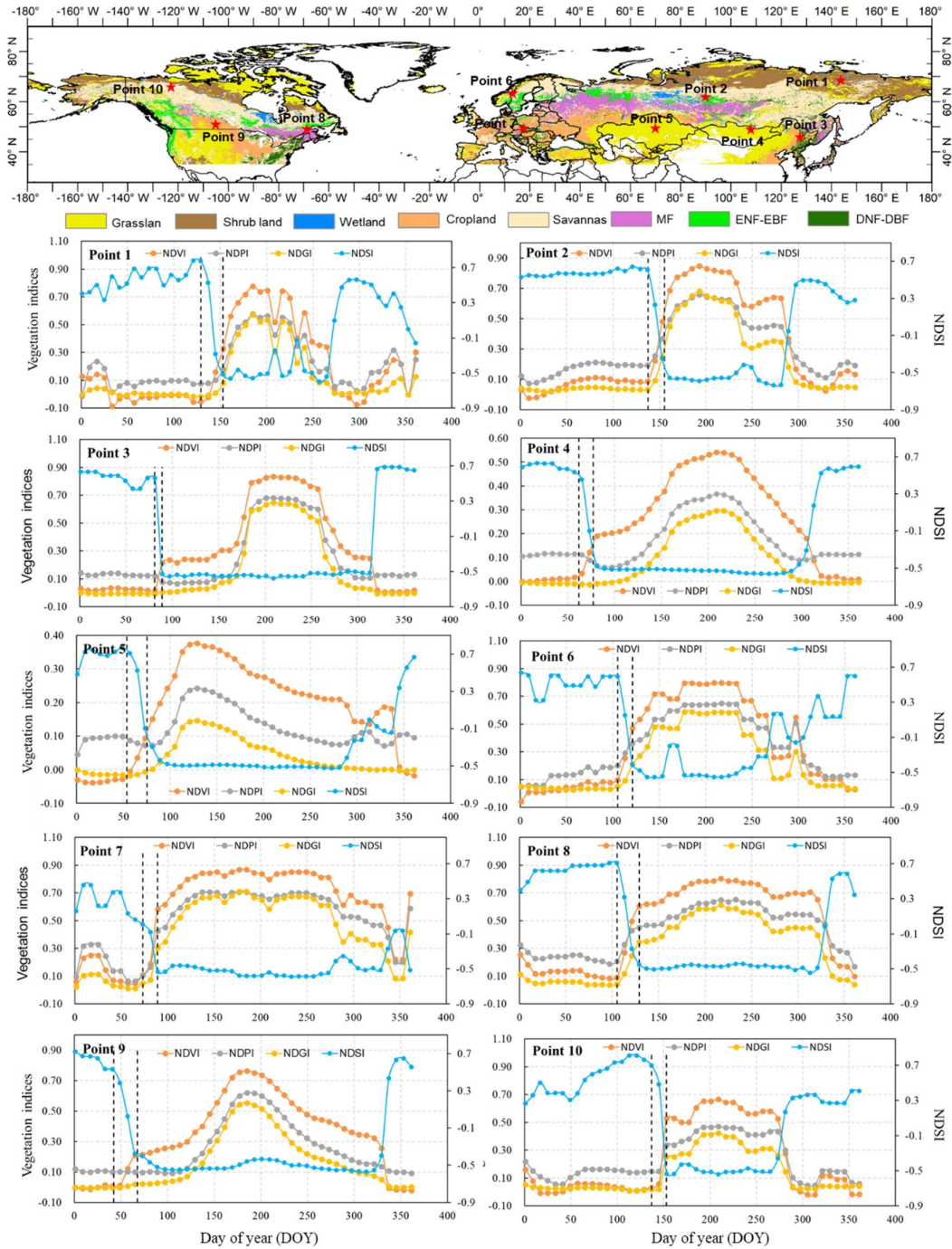


Figure S1. Some examples showing the annual time series of NDVI, NDPI, NDGI, and NDSI at northern middle and high latitudes (north of 40° N). The vertical black dotted line in each panel shows the detected snowmelt period.

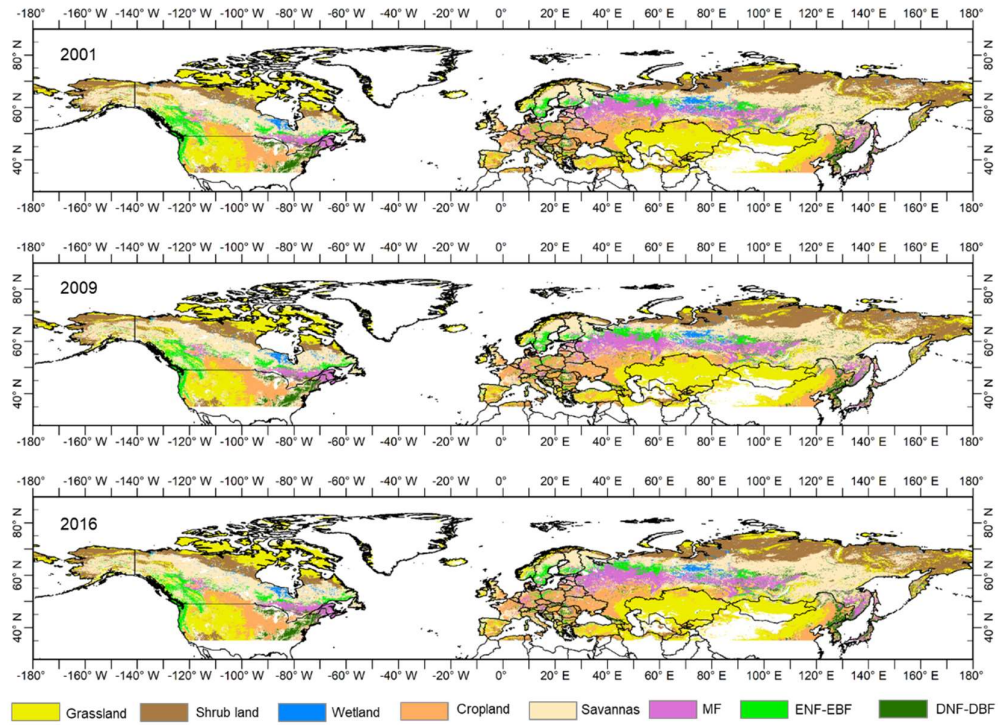


Figure S2. The land cover types from the MCD12C1 V6 product in 2001, 2009, and 2016 over the north of 40° N. Noted: ENF-evergreen coniferous forest; EBF-evergreen broadleaf forest; DNF: deciduous coniferous forest; DBF-deciduous broadleaf forest; MF-mixed forest.