

Spatio-temporal vegetation patterns across UNESCO World Heritage site Kujataa, Greenland, using NASA MODIS data, 2000-2020

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Vegetation plays an important role in Earth's carbon balance and the expansion of vegetation from high latitude warming and the lengthening of the growing season has both regional and global implications. In this study, we focus on the UNESCO World Heritage site of Kujataa in Kujalleq municipality of South Greenland and use the Normalized Difference Vegetation Index (NDVI) from NASA's Moderate Resolution Imaging Spectrometer (MODIS) sensor to monitor two decades of shifts in the spatial patterns of vegetation coverage. A sheep farming landscape, Kujataa, has a long, though intermittent, history of agricultural communities thriving under challenging subarctic conditions on the very edge of the Greenlandic icecap. As shifts in climate once again impact temperature, precipitation and growing season length across subarctic communities, we examine how these play out across South Greenland. Our results suggest considerable inter annual and seasonal variability in vegetation patterns across the region.

Keywords: South Greenland, Kujataa UNESCO World Heritage, vegetation shifts, satellite imagery