In Afromontane systems, diurnal swings in temperature far exceed seasonal variation (Hedberg 1964). In contrast, precipitation is strongly seasonal (Fashing XXX, ZelXXXX), and this acts to synchronize annual patterns of vegetative growth and reproductive phenology across the landscape. To quantify long-term patterns of landscape-scale variation in vegetation phenology across the geladas range, we fit a LOESS curve to eighteen years of bi-weekly measures of the Normalized Difference Vegetation Index (NDVI) (Tucker 1979) – a proxy for vegetation greenness correlated with productivity (Pettorelli et al 2005, Pettorelli et al 2011). Using Google Earth Engine (Gorelick et al. 2017), we selected the MOD13A1 v6 NDVI product (Didan 2015) across the core gelada range (Moa XXXX? Outline below) and filtered the data to include only time periods with optimal atmospheric conditions (i.e. no clouds, limited aerosols, etc). Across the 18 years of available data, clear seasonal patterns of vegetation productivity emerge that correspond with both rainfall measures (potential regression plot?) and ground-based plot measures (Fashing et al. pers com/or is there something published here?). Data from 2018 are highlighted in red.

Tucker 1979 https://www.sciencedirect.com/science/article/abs/pii/0034425779900130

Didan, K. (2015). *MOD13A1 MODIS/Terra Vegetation Indices 16-Day L3 Global 500m SIN Grid V006* [Data set]. NASA EOSDIS LP DAAC. doi: 10.5067/MODIS/MOD13A1.006

Gorelick et al. 2017 <https://www.sciencedirect.com/science/article/pii/S0034425717302900>

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[Using the satellite-derived NDVI to assess ecological responses to environmental change](javascript:void(0))

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