



Relation of broadband NDVI and GPP in wet and dry periods in Hungary

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Carbon balance and net ecosystem exchange (NEE) dynamics of a dry, extensively managed sandy grassland is investigated in the Hungarian Plains since July, 2002 continuously. This measuring site is situated at Bugacpuszta (46°41'31" N, 19°36'06"E, 113 m a. s. l.), in the Kiskunság National Park. The weather patterns in 2003 and 2004 were considerably different, with a serious drought stress in 2003 and considerably more precipitation in the following year that resulted in a higher carbon uptake by the vegetation. The annual carbon budget was 17 gC m⁻² and -270 gC m⁻² in 2003 and 2004, respectively. Gross primary production (GPP) values were also different, 572 and 1178 gC m⁻², respectively. When investigating the relation between the satellite (TERRA MODIS) derived normalized difference vegetation index (NDVI) and broadband NDVI (NDVI_b), good agreement was found in both years. In different vegetation periods (ie. main growing season with and without drought, and recovery period) the relation between GPP and NDVI_b was significantly different. Investigation of spatial heterogeneity of the grassland in terms of satellite based NDVI and its relation to the representativeness of flux measurements are planned in the near future.