

**CONTROL ID:** 1502475

**TITLE:** Temperature and water control on vegetation productivity in Eurasia

**ABSTRACT BODY:** We use 113 monthly total water storage (TWS) change from GRACE (Gravity Recovery and Climate Experiment), temperature from ERA-interim reanalysis, snow water equivalent (SWE) from AMSR-E, and net primary productivity (NPP), normalized difference vegetation index (NDVI) from MODIS from August 2002 to December 2011 to analyze the trend of TWS, temperature, and vegetation growing and the interaction between climate conditions and vegetation in Eurasian. We find an overall TWS increase in both the Lena and Yenisey basins and a decrease in the South of the Ob basin. Temperature trends are increasing in the Lena basin and decreasing in the Yenisey and Ob. At the same time NPP and NDVI are increasing in the Lena and Yenisey basins and decreasing in south of the Ob basin. We observe a positive correlation between TWS, temperature, NDVI and NPP in the Lena basins and in the South of the Ob basin. We show that in the Lena and Yenisey basins temperature is the main factor controlling vegetation productivity while in the South of the Ob basin vegetation productivity is mainly controlled by water availability

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**INDEX TERMS:** [1640] GLOBAL CHANGE / Remote sensing, [1630] GLOBAL CHANGE / Impacts of global change.

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