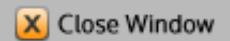




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**CONTROL ID:** 1483034**TITLE:** Vegetation response to extreme climate events on the Mongolian plateau from 2000-2010

**ABSTRACT BODY:** Extreme climatic events on the Mongolian Plateau have led to severe summer droughts as well as extreme winters in the last decade. We ask the question: What are the vegetation responses to these extremes over time and space and time compared to decadal means on the plateau and are there any significant differences between the biomes? We focused on the effects of drought in the plateau through the mapping of anomalies in MODIS –derived vegetation indices (EVI, EVI2), Land surface temperature (LST), and functional variables (GPP, ET) during the last decade (2000-2010). Frequency distributions of standardized anomalies of EVI during 2000-2010 showed that the number of the positively skewed years were more common in the desert biome as compared to grasslands and forests. Positively skewed drought years (severe droughts in 2000-2001, 2005, 2009) were characterized by the majority of negative anomalies with peak values between -1.5 and -0.5 and were statistically different ( $p < 0.001$ ) from relatively wet years (2003, 2004, 2007). Conversely, frequency distributions of dry years were not statistically different ( $p < 0.001$ ) from relatively wet years in the grassland biome. Temperature and precipitation inter-annual (1961-2010) linear trends interpolated from 67 climate stations correlated well the MODIS-derived standardized anomalies. In addition, comparisons between biome response in the form of EVI, ET, GPP anomalies and temperature/precipitation linear trends were analyzed using cross correlation functions. Finally, we made efforts in explaining these anomalies with changes in albedo and increasing land use intensity at aimag/prefecture administration level in Mongolia and in Inner Mongolia.

**CURRENT SECTION/FOCUS GROUP:** Global Environmental Change**CURRENT SESSION:** GC019. Environmental, Socio-economic and Climatic Change in Northern Eurasia and Their Feedbacks to the Global Earth System**INDEX TERMS:** [1640] GLOBAL CHANGE / Remote sensing, [1637] GLOBAL CHANGE / Regional climate change, [1632] GLOBAL CHANGE / Land cover change, [1616] GLOBAL CHANGE / Climate variability.**AUTHORS/INSTITUTIONS:** R. John, J. Chen, Z. Ouyang, Bowman-Oddy Labs MS 604, LEES lab, Toledo, OH;

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Product version number 4.0.0 (Build 55)  
Build date Aug 03, 2012 13:50:09. Server tss1be0014