

Title: Matter fluxes in grasslands of Inner Mongolia as influenced by stocking rate

ZALF-Project: Dynamic of wind erosion in the Xilin River Catchment area in Inner Mongolia

Duration: 04/2004 – 03/2011
Budget: 106.000,-€ 3 Doktorandenstellen
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Target region: Inner Mongolia, Xilingele steppe

Abstract: Due to overgrazing in the past decades erosion by wind plays an increasing role in Inner Mongolian landscape processes. Wind erosion is a sorting process that selectively removes the finer, most fertile and chemical active portions of the soil. While coarser particles (> 100 microns) move in creep or saltation modes and are deposited near to the erosion area, fine dust particles travel in suspension great distances and affect huge areas in East Asia by periodical dust storms. The objectives of the sub-project are to quantify material emission, transportation and deposition by wind within the Xilin River basin and to model the spatial and temporal variability depending on a change of grazing management. Two ungrazed and one overgrazed experimental field are investigated to assess the amount of material in- and output and lead to conclusions about the matter fluxes in dependence on grazing intensity. The quantification is accomplished by a laser dust analyzer (fine dust between 0.25 and 32 microns) as well as by sediment- and bottle traps to measure the horizontal and vertical dust transport. To assess the soil deposition in the past, the inventory of the radio nuclides ¹³⁷Cesium and ²¹⁰Pb is measured on various sites. The inventory of ⁷Be is used to analyze seasonal erosion processes because of its short half-life period (53 days).

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