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ТӨВ АЗИЙН УРГАМЛЫН ОЛОН ЯНЗ БАЙДАЛ, ЭКОСИСТЕМИЙН ҮЙЛЧИЛГЭЭ

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Plant communities along the altitudinal gradient of Bulgan river Basin

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The Bulgan river basin is a vital part of the ecosystems and livelihoods in the Dzungarian Gobi. It hosts ethnic minority populations, which depend on the use of animal and plant products supplied by the rangelands and floodplains along the river. However, due to severe societal changes and the fact that the basin is part of a border region between China and Mongolia, this region faces severe challenges due to increasing competition for scarce water resources and pastures both in Mongolia and China.

In 2012, we sampled 203 plots along the Bulgan river using a modified Braun-Blanquet approach with relevé samples of 10 x 10 m in size; vascular plant cover was estimated in absolute percentages. Sample sites were deliberately chosen to represent relevant vegetation types, ranging from higher mountains to the oases. In addition, biomass, soil samples and environmental data were collected as well.

Based on our result we found four different main vegetation types encompassing fourteen communities in total. Main vegetation types are mountain, pediment, desert and oases, which showed a clear altitudinal distribution except for oases. In addition, DCA analysis revealed a close correlation between altitude and species composition and productivity.

In order to derive baseline data for rangeland productivity and land degradation we process a vegetation map based on remote sensing imagery and relevé-based plant community data. This will allow us to spatially map the vegetation communities, and analyse further patterns such as altitudinal gradients of vegetation types, biomass distribution, degradation patterns and heterogeneity. Based on our results we aim to aid the development of sustainable livestock management practices and policies.

Keywords: rangeland, altitude, vegetation community, vegetation map