Geophysical Research Abstracts
Vol. 18, EGU2016-13788, 2016
EGU General Assembly 2016

Ecological restoration of peatlands in steppe and forest-steppe areas

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Peatlands in the arid and semi-arid regions of steppe and forest steppe belt of Eurasia have some specific features. That demands the special approach to their management and restoration.
The distribution of peatlands under conditions of dry climate is very limited and they are extremely vulnerable. Peatlands in those regions are found in the highlands where temperate conditions still present, in floodplains where they can get water from floods and springs, or in karst areas. Peatlands on watersheds present mainly remains from the more humid climate periods.
Water and carbon storage as well as maintenance of the specific biodiversity are the key ecosystem natural functions of peatlands in the steppe and forest steppe. The performance of those functions has strong implications for people wellness and livelihood. Anyhow, peatlands are usually overlooked and poorly represented in the systems of natural protected areas. Land management plans, mitigation and restoration measures for ecosystems under use do not usually include special measures for peatlands. Peatlands'use depends on the traditional practices. Peat extraction is rather limited in subhumid regions but still act as one of the threats to peatlands. The most of peatlands are used as pastures and grasslands. In densely populated areas large part of peatlands are transformed to the arable lands. In many cases peatlands of piedmonts and highlands are affected by industrial developments: road construction, mining of subsoil resources (gold, etc.). Until now, the most of peatlands of steppe and forest steppe region are irreversibly lost, what also effects water regime, lands productivity, biodiversity status.
To prevent further dramatic changes the ecological restoration approach should be introduced in the subhumid regions. The feasibility study to assess the potential for introducing ecological restoration techniques for peatlands in the arid and semi-arid conditions had been undertaken in steppe and forest steppe of Russia and steppe zone of Mongolia. Functional ecosystem characteristics, including hydrology, productivity and carbon accumulation rate studied in the intact and disturbed areas. Two pilot projects are set up, including monitoring program in forest steppe (Bashkiria) and steppe (Mongolia) areas.