

Natural restoration of degraded Artemisia community  
under influence of grazing.

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Abstract.

In 2001-2006, we conducted a vegetation survey in Artemisia meadow steppe with heavy grazing were located within the 1.0 km range from the sum – settlement in eastern part of Mongolia. At this degraded by livestock grazing Artemisia community was fenced to exclude livestock an area on 0.5 ha on 6 years and a comparison was made of the main characteristics of vegetation such as species composition, cover, relative value of plant ecological groups, soil moisture and productivity. In the fenced area was studied natural restoration process of degraded community, out side in a contral area where grazing was studied vegetation succession under influence of heavy grazing. Before fencing vegetation cover was a 35%, and species composition was poor and strongly dominated Artemisia species and codominated other steady to grazing annual and biennial forb species, productivity and it's quality were deterioriated due to invade unpalatable, field weed species.

The vegetation soil moisture in surface layer 0-20 cm is low, because soil surface layer under permanent trampling of livestock have been hard, impermeable, and able to retain little water in one hand, in other hand, with permanent trampling have not plant litter layer at ground and vegetation have been very short and sparce, therefore water transpiration of surface soil is more than light grazing. This indicated that the heavy grazing in meadow steppe vegetation led to the xerophytisation its plant habitat and vegetation was steppized, namely is transformed to the steppe and to new plant habitat began invade the xerophyte steppe short grass and forbs species

The fencing of degraded grasslands can aid restoration and cessation of grazing often leads to a progressive succession with changes in species composition, increase in total above ground biomass, specially the recovery of fine forage grasses such as *Stipa baicalensis*, *Agropyron cristatum*, *Koeleria macrantha*, decrease unpalatable Artemisia and degradation indicator plant species and also in increase canopy cover of vegetation. Due to increase canopy cover of vegetation was impoved soil condition, decrease water transpiration of soil surface layer and began dominate mesophyte plant species in the vegetation. Therefore degraded Artemisia community after protection of grazing on 6 years beginning transformed to the grass-forb community.

References

Bolodin N.B. Towards the increase in productivity of fodder land in the forest-steppe zone of Mongolia. In: journal Modern Mongolia., Ulaanbaatar, # 5. 1988.p. 11-13.

- Gertsic V.V. Grazing impact on vegetation and their soil moisture and structure. In: Proceedings Central Black earth nature reserve. v. 3.,1955. p. 56-63.
- Gorshcova A.A, Copitova L.D. Biological features in cryophytes species in Trans Baical. In: (edit. by Bolodin N.) Physiology in dryness plant. Moscow., 1971. p. 270-286.
- Gorshcova A.A., Lobanova I.N., Influence of grazing regime on the change and structure in steppe vegetation
- Narantuya N. The restoration of some vegetation in the forest steppe and steppe zone in Mongolia. In: Proceedings of institute of Botany, Mongolian Academy of Sciences. # 16. 1990. p. 12-15.