Changes in plant communities by grazing in northern Mongolian grassland and assessment of nomads

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Introduction Due to a regime change in 1992 , the Mongolian economic system experienced a drastic shift , which resulted in the changes in the life style of nomads . The nomads were concentrated to particular places and became less mobile (Fernandez-Gimenez , 2004) . This resulted in vegetation degradation (Okayasu , 2007) . Despite warnings of scientists , this is not resolved but is being intensified . One of the reasons is that Mongolian nomads do not recognize imminent threats to the resources or to their future livelihood (Fernandez-Gimenez , 2000) . If so , studies on only vegetation are not enough , but need to include evaluations by nomads . We , therefore , studied both grazing effects on vegetation and nomads assessment of plant communities .

Study area and methods The study area is , Bulgan Aimag (Prefecture) , located in the forest-steppe zone in the north-central part of Mongolia . We divided the area into three levels of grazing intensities according to ger locations and number of livestock . We examined 6 light grazing sites , 5 moderate grazing sites , and 5 heavy grazing sites . Each site contained five 1m × 1m quadrats . In each quadrat , we recorded the coverage (%) and the height (cm) of all plant species , and clipped the plants to obtain the standing biomass (g) . For nomads' assessment , we visited the sites with them and interviewed their assessments of the grassland conditions

Results Total number of species , height of plants , and total standing biomass decreased as grazing pressure increased . Perennial forbs such as *Geranium* spp . and *Galium verum* in heavy grazed sites greatly decreased in cover and in biomass . Graminoids such as *Carex* and *Elymus* kept fairly constant levels of coverage and biomass regardless of grazing pressure . According to interviews , nomads seemed to consider heavy grazing sites were relatively good . They called graminoids thin plants" and regarded them as good forage for livestock . These plants had greatest coverage in heavily grazed sites . These results imply that nomads do not consider heavily grazed sites problematic and this recognition does not stop heavy grazing .

References

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