



Degradation issue of *Fescue-forbs* rangeland in the mountain steppe of Mongolia



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Objective of study: To study the change of frequency, number of individuals, canopy cover and total yield of edible species in *Fescue-forbs* rangeland at different degree of degradation
 To conduct a comparative study in species composition along with the changes in the total number of individuals at different degrees of degradation.

Study site. Three different degrees of degraded *Fescue-forbs* rangeland, situated in the east valley of the Del in Bort bag of the Ikhtamir soum of the Arkhangai aimag, Mongolia were chosen for the study.

Results

Table 1. Change in some characters of edible species in *Fescue-forbs* rangeland

Rangeland	Degradation degree	Frequency (%)	Number of individuals (1 m ²)		Bunch diameter (cm)	Percentage in total coverage, %	Percentage in total yield, %
			alive	dead			
<i>Fescue-forbs</i>	Normal	100	302	-	3.1	21.5	29.8
<i>Grass-forbs</i>	Slight	95	5	54	2.3	0.3	1.4
<i>Artemisia-forbs</i>	Moderate	70	1	12	1.3	0.2	0.1
<i>Sedge-forbs</i>	Heavy	30	0.4	-	0.9	0.1	0

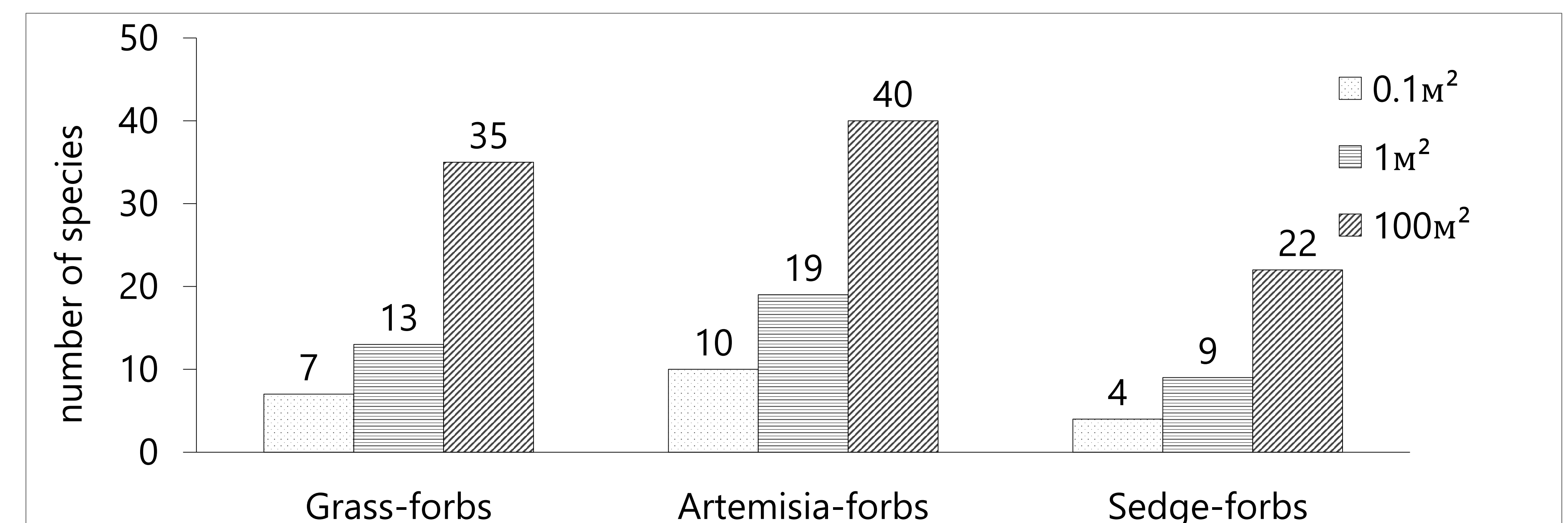


Figure 1. Change in species composition *Fescue-forbs* rangeland

Table 2. Dissimilarity of plant species at degraded *Fescue-forbs* rangeland

Dissimilarity coefficient	Variants		
	1&2	1&3	2&3
	0.55	0.66	0.65

Explanation: Dissimilarity coefficient by Czekanowskii 1909, 1913 : 1&2 compares slightly and moderately degraded rangeland, 1&3 slightly and heavily degraded rangeland and 2&3 moderately and heavily degraded rangeland

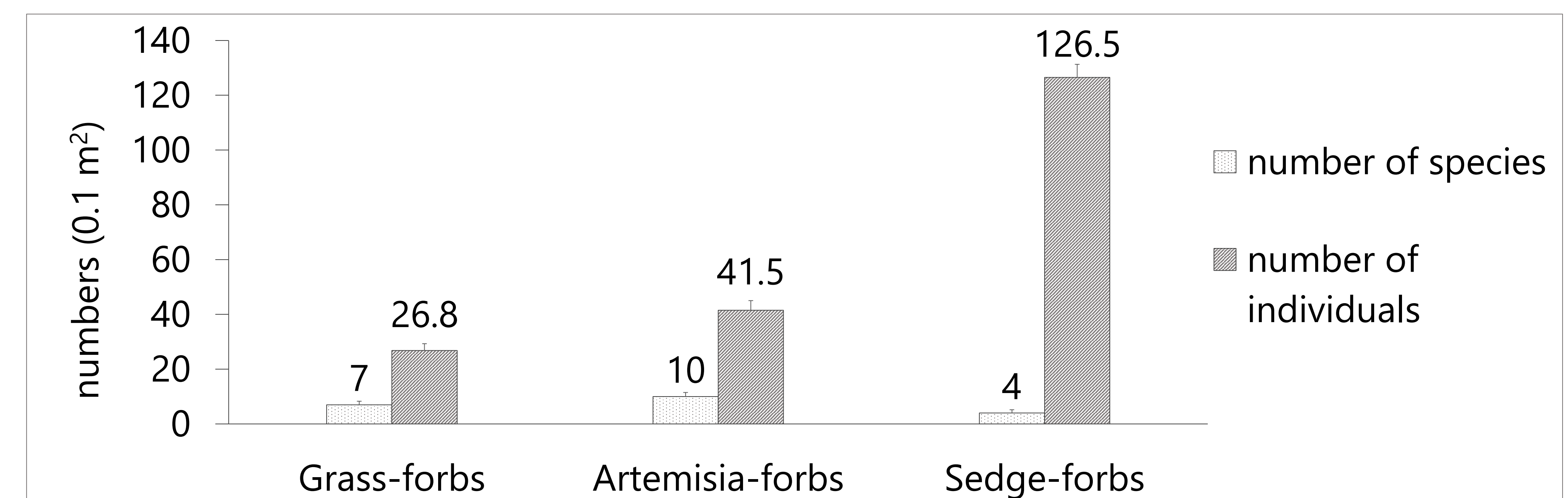


Figure 2. Change of individuals in unit area of *Fescue-forbs* rangeland of mountain steppe

Conclusion

- The frequency of *Festuca lenensis* was decreased by 5-70%, number of individuals was decreased by 98.3-99.9 and bunch diameter was decreased 1.3-3.4 times at three different degraded rangelands compare to normal rangeland. The percentage of *Festuca lenensis* in canopy cover and yield of total plants was decreased and its role as an edible species was lost.
- A change in species composition of *Fescue-forbs* rangeland was observed, with a plant species similarity of 0.45 between slightly and moderately degraded rangeland, and the heavily degraded rangeland became dissimilar from other two types.
- With increasing degradation of the original *Fescue-forbs* rangeland, the number of species in unit area was initially increased but sedge species dominated heavily degraded rangeland. Number of individual species increased in moderately and heavily degraded rangelands in comparison to slightly degraded rangeland. This was depended on increaser and tolerant plant species; these are *Arenaria capillaris*, *Potentilla acaulis*, *Artemisia frigida*, *A.commutata*, *Chamaerodos erecta* and *Carex duriuscula*.