CHANGE IN THE NUMBER OF PLANT BUSHES THROUGH THE GRAZING GRADIENT OF SOUTHERN KYZYLKUM

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https://doi.org/10.5281/zenodo.7739917

Abstract. It was held in the Kyzylkum region, located in the Konimekh region of the Navoi region. In the course of research, 2 irrigation wells, typical for the rangelands of the Kyzylkum desert, were selected as sites. As a result of the study, the state of desert rangelands and the reasons for their crisis as a result of anthropogenic impact, the dominant desert plants, were analyzed. It has been established that the cause of the rangeland crisis is also the impact of anthropogenic factors on the dominant species in desert rangelands, that is, overgrazing and undergrazing.
Keywords: projective cover, biomass, phytocenosis, succession, association.

Kyzylkum is an important region of our republic located on the border of Bukhara and Navoi regions, where pasture livestock is widely developed. In Central Kyzylkum, there are different types and varieties of pastures, including gypsum and sandy soils, which serve to provide livestock with continuous fodder throughout the year. However, in recent years, the population's unreasonable use of such rich opportunities of the Central Kyzylkum pastures - excessive placement of livestock in the pastures, a sharp increase in their number, and their continuous grazing around the settlements of the population - are causing a decrease in the quality of the pastures[1].

More than 1500 species of plants belonging to 50 families and 302 genera have been found in the natural pastures of Uzbekistan. 550 species of these species are among the species that are nutritious for livestock. Historically, the vegetation cover of this area has become important not only as the main source of food for wild herbivores, but also as a natural fodder reserve for grazing livestock in this area[2].

Methods of seasonal use of these types of pastures have been developed based on the specific characteristics of the soil and climate conditions and vegetation cover. Unfortunately, in recent years, due to various reasons, the traditional systems of pasture use in the sandy desert areas have been lost, and the vegetation cover and its structure have undergone drastic changes. As a result,

there is an increase in the scale of the crisis and the acceleration of desertification processes in these pastures. As of 1959, the area of natural pastures of our republic was 29.9 million hectares, but by 2015, this figure had significantly decreased to 21 million hectares[3].

If the geobotanical description work is divided into classes or gradations depending on the dimensions of the external environmental factor, and the change of individual species is observed according to these classes, this method is called gradient analysis. Usually, this type of data is mainly presented in a graphical form, and on the abscissa axis are the dimensions of the external environmental factor, and on the ordinate axis are plant indicators corresponding to certain values or dimensions of the external environmental factor. is displayed[4].

Above-ground phytomass, especially the green mass eaten by livestock, can change rapidly under the influence of grazing, and these changes do not require a long period of time to occur. The level of grazing and its duration play an important role in this. In the conditions of unorganized and unplanned maintenance, a relatively disproportionate change of mask indicators occurs[5]. The grazing gradient method is widely used to study the effect of livestock grazing on plants in Australia[6], the USA, Argentina, and Mongolian pastures[7]. In the formation of the lower layer of the ephemerous and ephemeroids plant cover and their quantitative change, the indirect effect of grazing plays a key role compared to the direct effect[8].

M.H. Andrew of the grazing gradient method provides a greater opportunity to understand the ecological processes occurring in the biotope at a precise level than any other methods[9]. L.P. Sinkovsky, in the conditions of Central Asia, having 15-20 thousand bushes of *A. diffusa* per hectare is the optimal condition of semi-shrub pastures[10]. The results of our research revealed a sharp increase of the above-mentioned indicators in the conditions of grazing(photo 1).

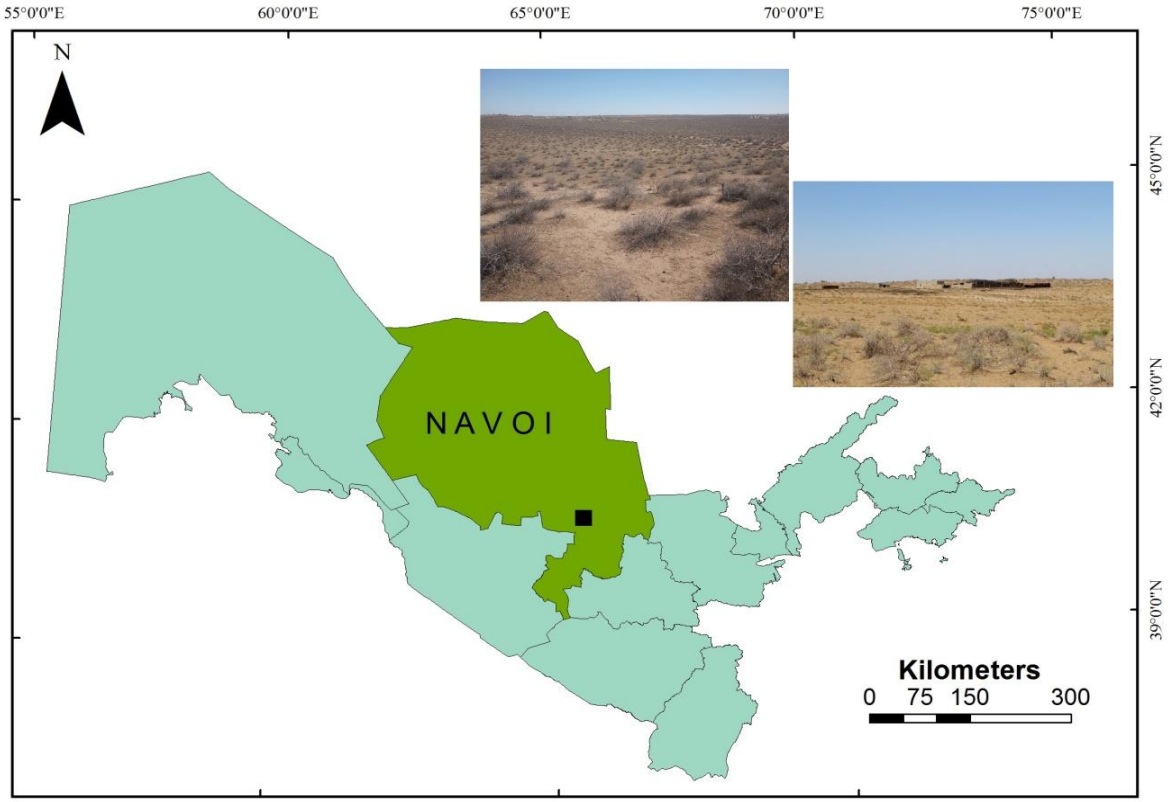


Photo 1. Location of the research area.

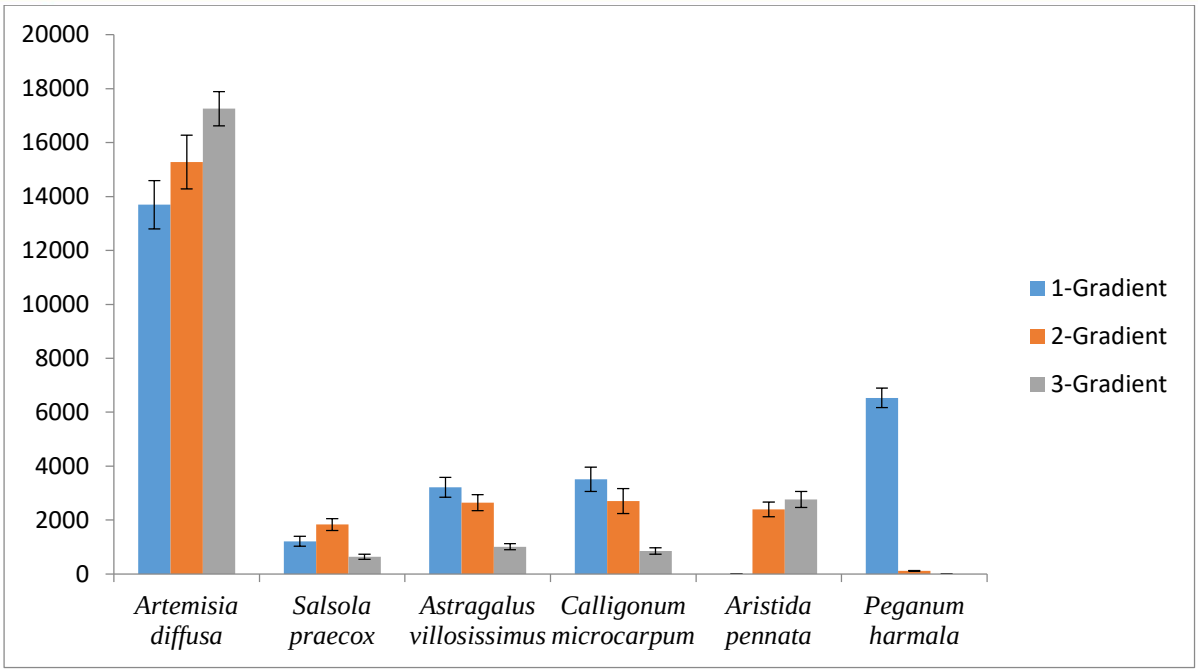
As mentioned above, in the vegetation cover of the sandy desert pastures, grasses are mainly included in the composition of species in the spring season. Taking this into account, we will provide information about the share of each plant in the species composition, as well as other indicators, separately for the spring season. According to the results of autumn research, the number of semi-shrub *A. diffusa* bushes was 9967 bushes per hectare on average due to the constant grazing of livestock around the well in the first experimental area. Therefore, first of all, we can see that *P.harmala* formed 4700 bushes in the 1st gradient, that is, around the well. In the next gradient along the livestock gradient, the number of semi-shrub *A.diffusa* bushes was on average 14 200 bushes per hectare (table).

The number of plant bushes according to gradients (autumn, ha) (table)

Species	1-Gradient	2-Gradient	3-Gradient
Artemisia diffusa	9967±658	14200±934	16133±414
Salsola praecox	1400±223	3100±345	733±108
Astragalus villosissimus	2933±308	2200±259	533±101
Calligonum	3033±430	2500±422	600±108

microcarpum			
Aristida pennata	0	2100±268	0
Ammothamnus lehmannii	1667±374	0	0
Peganum harmala	4700±231	0	0

The average number of semi-shrub *A. diffusa* bushes in the areas where cattle were grazed along the gradient was 16133 bushes per hectare. We did not encounter *P. harmala* in the second and third gradients during the study. It can be seen that the number of *A. diffusa* increases and the number of *P. harmala* decreases along the grazing gradient as we move away from the well. According to the gradient analysis of moving away from the well, there were changes in the number of bushes in the rest of the plant communities in a unique way. While the number of bushes of plant species that are eaten unconsciously by livestock was low around the irrigation wells, we witnessed that the number of bushes increased along the gradient away from the well. This is due to the increased pressure on the plant species that are being consumed unconsciously around the irrigation wells, as a result of which there is no renewal and their seeds do not ripen and fall to the ground, and they are trampled under the feet due to the large number of livestock. As a result, it became known as a result of the observations that there are cases of giving way to inferior species. This condition is clearly seen in plants that contrast each other, that is, *A. diffusa* and *P. harmala*. Here, we can say without hesitation that the aboriginal plant species is A. diffusa, and the invasive species is *P. harmala*. On the contrary, we can see a decrease in invasive species along the gradient away from irrigation wells. The reason for this is characterized by the reduction of trampling under the feet of livestock and the possibility of seeds ripening as a result of eating in moderation. According to the results of the spring research, we encountered an increase in the number of *A. diffusa* bushes as we moved away from the well along the grazing gradient. In turn, in contrast to the results of the autumn research, each gradient was characterized by a large number of bushes in its own way (photo 2).



2 photo. The dynamics of the number of plant bushes on gradients, ha (Spring 2021).

As a result of our spring research, *P. harmala* was found to have 6532 plants per hectare in the area around the irrigation well. In the second gradient, unlike the results of our autumn research, it was found that there were 116 *P. harmala* bushes per hectare. In the third gradient, we did not encounter *P. harmala*.

According to the results of the autumn research, it was observed that the projective coverage indicators of the plant community of the research areas change in accordance with the level of grazing. In this case, it was found that the indicators of projective coverage are relatively high and reach up to 19% in the areas where the crisis is not observed along the grazing gradient. The number of semi-shrub bushes in the study area, where semi-shrub was preserved and the level of grazing was not too high, was 9967 bushes per hectare on average.

The above analyzes showed that the number of semi-shrub bushes decreased with the increase in the level of husbandry. The decrease in the number of bushes led to a corresponding decrease in the projective coverage. It was observed that the projective coverage indicator of semi-shrub decreased to 14% in the areas with an average level of crisis. The projective coverage index of incense is 9% around the irrigation well, and it was found that in the second and third gradient, incense does not occupy the projective coverage as it moves away from the irrigation well.

It was found that the number of bushes of *A. diffusa* in the area with a high level of crisis, that is, in the first gradient, the number of bushes of *A. diffusa* is small, and in the third gradient, which is not in crisis, the number of bushes of *A.*

diffusa is slightly more. In the critical area around the irrigation well, the number of perennial grass *P. harmala*, which is not eaten by livestock, was 4700 bushes per hectare. As the level of crisis moved to the third gradient, it was found that *A. diffusa*, which is loved by livestock, was completely dominant, and *P. harmala* was not found at all. Increasing stocking rates lead to a decrease in invasive species and an increase in species that are not eaten by livestock. Projective coverage was 31% in areas with a higher level of crisis, and 26% in areas with a low level of crisis. It can be seen that the level of crisis is related to the widespread distribution of *P. harmala* in areas with a high level of crisis.

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