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ASSESSMENT OF THE CURRENT STATE OF AGROPYRON DESERTORUM SCHULT, ONE OF THE WILD ANCESTORS OF CULTIVATED PLANTS GROWING IN EASTERN USTYURT

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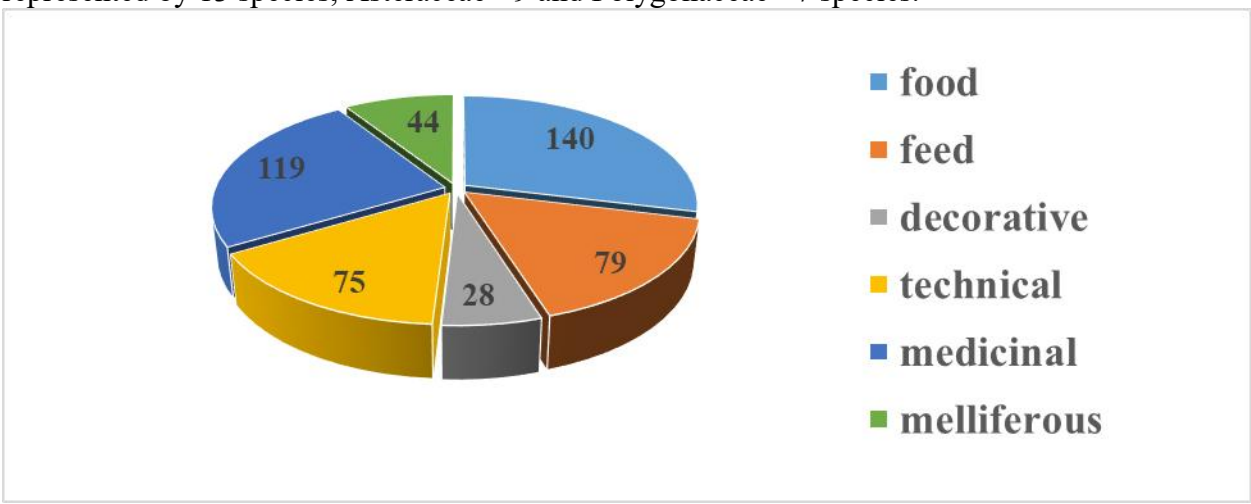
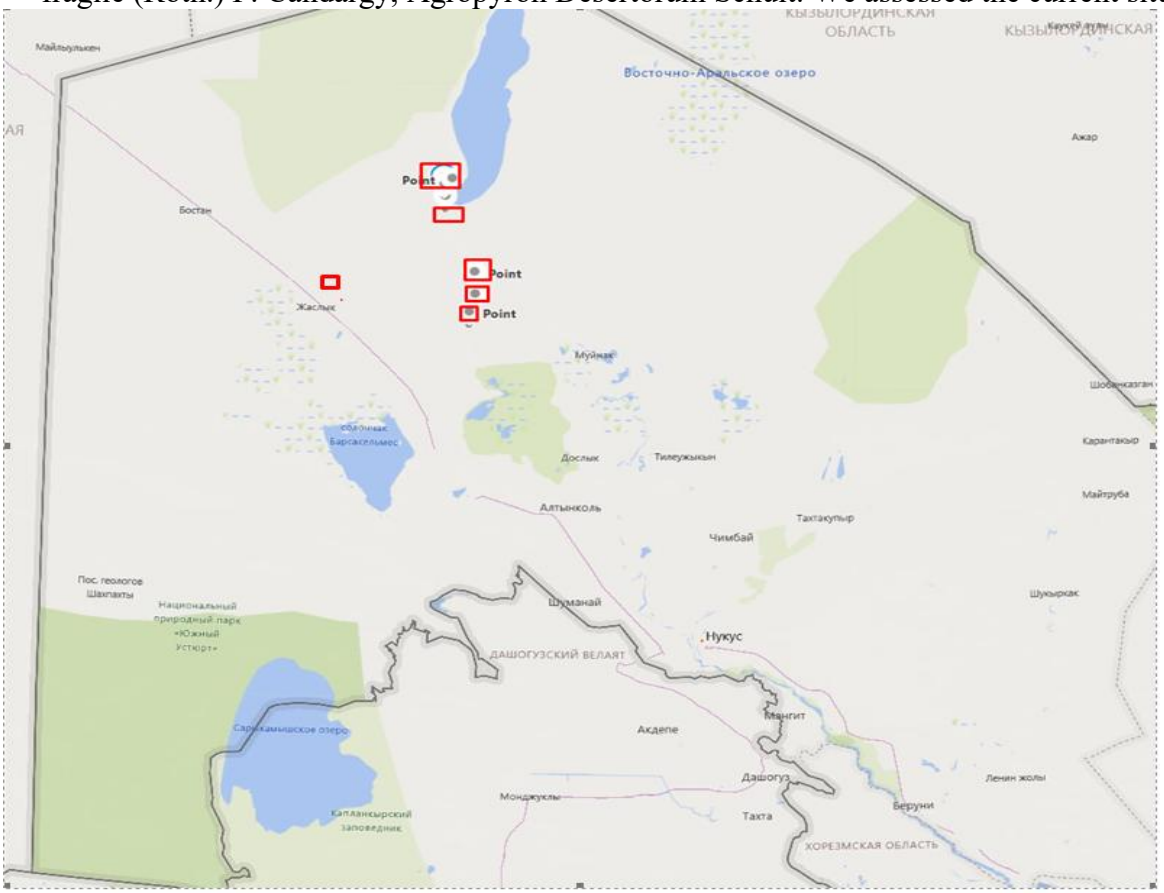
The Karakalpak region of Ustyurt is located in the west of the Republic of Uzbekistan, bordering on the east with the Aral Sea, most of which has turned into a desert. The total area of Ustyurt is 27.2 million hectares, of which 7.2 million hectares correspond to the territory of Karakalpakstan [4; 1-245 p. 6; 7-335]. Ustyurt mainly consists of a plateau with a height of 160-300 m (above sea level). In the east (Cape Aktumsuk, 219 m), in the center (207 m) and in the southwest (Qorabaur height, 275 m) there are several elevations. The main depressions are the Barsa-Kelmas Bay (50 m above sea level), the Asaka hunting basin (29 m above sea level) and Lake Sarikamish. [5; p. 5-188]. According to the botanical and geographical zoning of Central Asia and Kazakhstan, as well as Uzbekistan, the Ustyurt Plateau belongs to the Northwestern Turon sub province [2; 13.18b.]. The climate of Ustyurt is sharply continental, characterized by dry hot summers and severe winters, strong winds, little precipitation (70-110 mm/year), unstable snow cover, high temperatures. seasons and days. The absolute maximum temperature is +45.50C (July), -370C (January). The date of transition of daily air temperature to +100C is the third day of April. In winter, the soil freezes to a depth of 5-15 cm. Total solar radiation reaches 130-140 kcal/cm2, [2 p. pp. 261-267] and the radiation balance is 45-50 kcal/cm2 per year. The total temperature below 100C reaches 3000-34000C. The growth period lasts 200-210 days. [The duration of the cold-free period is 175-187 days in the northern part, 187-215 days in the southern part. The average long-term precipitation in the southern part is 80-120 mm. Evaporation reaches very high values (1500-2000M). With the deterioration of environmental conditions, long harsh winters and hot dry weather are observed. Compared with the 1970-1980s, the volume of the atmosphere has decreased by 20-30 mm, and groundwater has decreased to a depth of 20-30 mm. 3-12 m. The salinity of Tupor increases by 1.2-1.5 times [1; pp. 78-79]. According to A. Ajiev (2023), based on the analysis of the composition of wild ancestors of higher plants found in the Republic of Karakalpakstan, there are 39 families, 117 genera and 171 species, as well as the existence of at least 6 different groups of economically valuable species, including 140 forage, 79 food, 44 honey. Of these, 119 are medicinal plants, 75 are industrial plants (Fig. 1). The most numerous forage group numbered 140

species, and the largest number belonged to the Chenopodiaceae family, represented by 27 species. The Poaceae family is represented by 25 species, Fabaceae - 15 species. Then the Brassicaceae family was represented by 13 species, Asteraceae - 9 and Polygonaceae - 7 species.



1. pic. Distribution of wild ancestors of cultivated plants of the Republic of Karakalpakstan into economically valuable groups. [According to A. Ajiev (2023)]

According to B. Sariboev (1987), the flora of Ustyurt includes 60 genera, 295 genera and 724 species. The family spectrum is dominated by perennials Chenopodiaceae, Asteraceae, Brassicaceae, Poaceae and Fabaceae, followed by annuals, biennials, shrubs and trees. Objects of study: integration of principles for preserving the biological diversity of the flora of Karakalpak Ustyurt during expeditions organized in 2024, cenotic populations of plants, including wild ancestors of cultivated plants Agropyron fragile (Roth.) P. Candargy, Agropyron Desertorum Schult. We assessed the current situation.



2. pic Agropyron desertorum Schult. location of the cenopopulation

Agropyron fragile (Roth.) P. Candargy (Siberian wheatgrass or brittle wheatgrass) grows naturally in the sandy steppes of Western Siberia, the Lower Volga region, Kazakhstan, Turkmenistan and Uzbekistan. It is

also found in southern Ukraine and the Caucasus. It is used in agriculture in the southeastern regions of Russia.

Agropyron desertorum Shult. (Desert wheatgrass) It is found in the Caspian lowland and in desert steppes. The most drought-resistant species.

Wild wheat is a perennial plant that grows throughout North America. Because a desertorum can be grown repeatedly over many years, it has become a useful crop in agriculture. This plant species is a variety of wheatgrass used as a common pasture crop. Flowers: small, green to purple, collected in ears.

It is especially used for beef cattle raised for food production [7]. Inflorescences: prickly, prickly (dense), prickly.

Fruit: caryopsis of a grain or variety.

Seeds: small, hard, shiny.

Stem: erect, height reaches 90 cm.

Leaves: flat, edges of sheaths touch.

Having taken root, it contributes to drought resistance.

It has high frost resistance and winter hardiness, in these characteristics surpasses alfalfa. It has high drought resistance, can withstand long periods of drought and grows well after rain. Grows on neutral and slightly saline soils. Does not impose high demands on the soil due to a powerful, deeply penetrating root system, significantly exceeding the mass of the above-ground part. Withstands the shading of cover crops, if there is sufficient moisture during early spring planting. A common xerophyte, but young shoots can die from hot sunlight. It surpasses other types of couch grass in productivity and produces a small amount of waste.

In grass mixtures, it develops slowly in the first two years, especially with insufficient moisture, by autumn it forms only 1-2 stems, occupying only 10-15% of plantings. Bushes in the first year of life have 20-30 stems per plant.

In the second year of life, it also produces few shoots, weakly suppresses weeds and produces a small hay yield. It reaches full development by the third year of life. In the 3-5 year of life, it occupies the main place in the coenopopulation and begins to displace other species. In the third year of life, couch grass produces the highest yield of hay and seeds. From the age of 5-6 years, fertility begins to gradually decrease, but it can persist in the coenopopulation for decades. Type of development: spring-winter.

During the expeditions of A. Desertorum Schult., we discovered 5 coenopopulations of the species. To assess the state of cenopopulations in their habitats, we studied the ontogenetic structure of five cenopopulations.

Below is a brief ecological and phytostenotic characteristics of these five cenopopulations. We designated areas with xenopopulations as GP.

GP1 (44°26'49.0" N 58°11'34.2" E). Salsola orientalis S.G. was formed around a field road in Eastern Ustyurt. Studied in the Gmail team. The relief of the study area is located in an uneven shallow ravine. The soil is gypsum-limestone, sandy with an admixture of large stones.

The level of coverage of the soil surface by communities does not exceed 40%. The floristic composition of the community is represented by a small number (12 species) of species. The organizer of the community Salsola orientalis provides 33% of the cover, A.desertorum Schult. the share is higher than that of other GP2 and GP3 and is 22% .

GP2 (44°25'24.7" N 58°11'46.5" E). It is found in the northeast of Ustyurt. This is GP Malacocarpus crithmifolius (Retz.) C.A. Maybe. was allocated to the team. The site is located around the road of type GP1, it is considered free from negative environmental factors compared to other WOPs. Rainwater collection creates conditions for long-term moisture retention in the soil and protection from strong winds, for the emergence of young plants. The level of soil surface coverage of the community is 35% A.desertorum Schult. the share is 9%. . The number of floristic species of the community is 19.

GP3 (44°28'38.7" N 58°11'17.2" E). There are also gypsum-limestone soils with uneven relief, gypsum soils with an admixture of large stones and the Shorhok deposit. In some places, layers of parent rocks are visible. The GP is located on a 10-15-meter cliff. The territory is free from the influence of anthropogenic factors. In particular, this is a chasm formed as a result of the erosion of limestone columns containing gypsum. The main factors affecting plants are washing away and undermining gullies with rainwater. At the

same time, it can be included in the list of factors negatively affecting the excessive activity of cartilages. The level of coverage of the soil surface by communities does not exceed 35-38%. Floristic composition It includes 14 species. The dominant species are Medicago sativa L. and Artemisia diffusa Krasch. ex Poljakov can be shown.

3.pic Salsola orientalis S.G. Gmail. team (GP1) GP4 (44°30'39.6"N 58°11'10.1"E). It is located on the Chink road in Eastern Ustyurt. GP4 is under threat of cliff collapse, and if this happens, it is unknown how it will affect the plant coenopopulation, and like GP5, it has a large stony-gypsum soil exposed to strong winds. Under the influence of these environmental factors, the environment becomes unfavorable for the emergence of young plants, the percentage of young species such as juveniles and immatures is very low. However, due to the large number of bushes in the community, as well as strong winds, the height of the plants is lower than that of other GP plants. The level of community coverage of the soil surface is 35-40%. A. Desertorum Schult the share does not exceed 11%. The floristic composition is not very rich - it has 12 species.

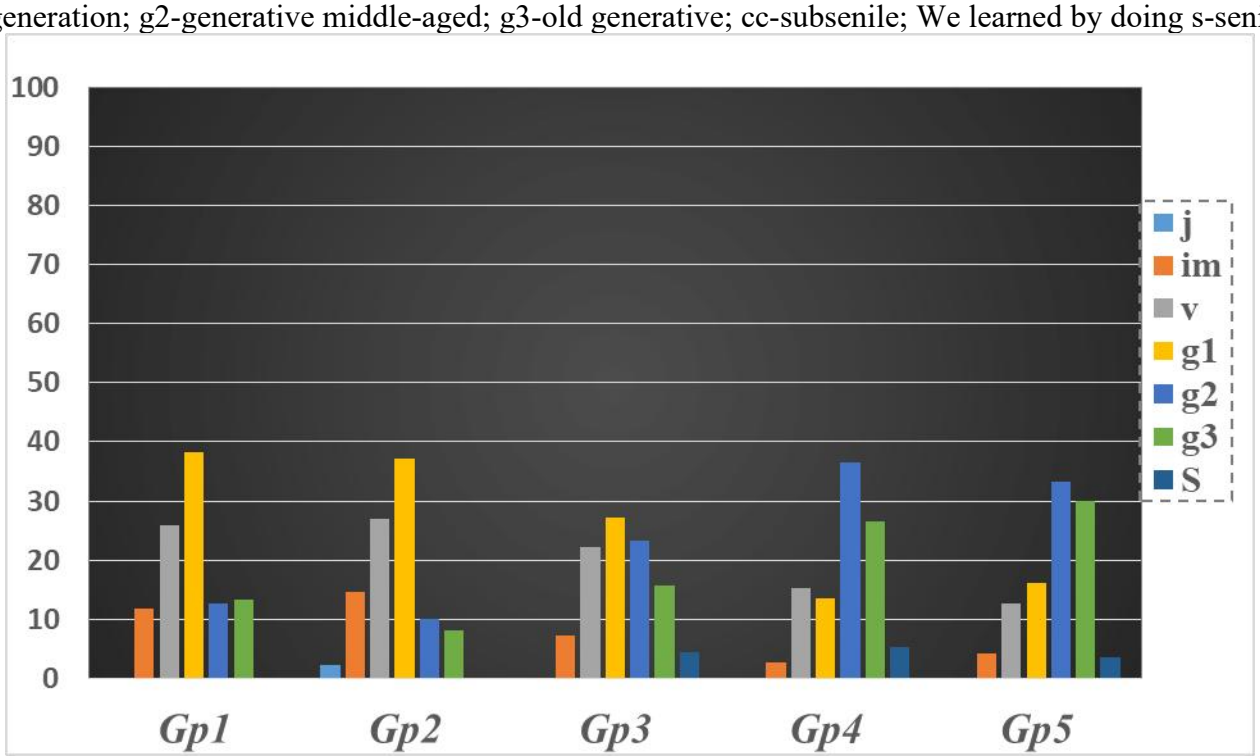
3. Pic A. desertorum Schult. displayed as dominant and codominant types (GP5)

GP5 (44°30'35.0"N 58°11'18.9"E). It is located on the eastern slope of Chink. The territory is uneven, has coarse stony-gypsum soil. There is no strong negative impact of anthropogenic and other environmental factors. The area suffers from soil erosion due to regular strong winds.

The floristic composition is not very rich - it consists of 9 species, the coverage is 40%. Artemisia terrae-albae Krasch (28%) and A. Desertorum (Schult) (25%) can be attributed to dominant and codominant species. A. Desertorum Schult. share is 25% higher than that of other general practitioners.

Studying the ontogenesis of species, T.A. Rabotnov [26; 7-204 p.] proposed A.A. Uranov [33; 3-8 p. 31; pp. 7-33] and the concept of discrete description of ontogenesis was adopted, which was later improved and developed by his students. In the literature cited above, the life cycle of plants is divided into four periods: latent (hidden), virginal, generative and senile.

A. Desertorum Schult. ontogenetic spectra of the cenopopulation: j-juvenile; immature; b-virginil; g1 - young generation; g2-generative middle-aged; g3-old generative; cc-subsenile; We learned by doing s-senil.



4. Pic A. desertorum Schult. ontogenetic structure of cenopopulations.

A. Desertorum Schult. It has been established that the coenopopulations in their ontogenetic structure have the following ontogenetic spectra.

Left temporal ontogenetic spectrum. The left ontogenetic spectrum of species coenopopulations is characteristic of GP1 and GP2, and these coenopopulations were assessed as dynamic populations in accordance with the spectrum order.

It should be noted that the age groups in GP1 and GP2 are divided into equal shares. According to him, the shares of individuals of g1 are close to each other (GP1 - 38.24%, GP2 - 37.21%). The share of generative predecessors in GP1 is 35.74%. This coenopopulation is characterized by dispersal along the roadsides of type GP5. Due to the fact that it is located on the edge of a ravine, which is washed away by rainwater and regular strong winds, the bushes are planted densely, and the branches are not very deep. GP2 is very close to GP1 with the prevalence of partially virgin (v) (27.01%) and mostly mature generative bushes (g1) (37.21%) in the cenopopulation. This cenopopulation represents A. Desertorum Schult. (k) can also be considered as the only cenopopulation where bushes are found. In our opinion, A. Desertorum Schult. The immature stage (im) of its ontogenesis is very short. And the main stage of the pregenerative period corresponds to (v). On the other hand, in GP2 plants with a slightly different location have sufficient water content and, due to the fact that they are located in a ravine, moisture is retained for a long time. Centered ontogenetic spectrum. The predominance of generative individuals (g2) registered in the cenopopulations was observed in GP4 and Gp5. Subsenile bushes are also found (5.25%). (g3) the proportion of generative individuals (v) and other (29.92%) cenopopulations (GP4, Gp5). If we look at the composition of the spectra (Fig. 4), we can see that GP3 and other GPs have a relatively close composition of individuals. As we have already mentioned above, the soils of GP3 are gypsum-limestone, there are also gypsum soils with an admixture of large stones, and there are Chorkhok fields. In our opinion, the ontogenetic spectrum of GP3 has a relatively left-sided spectrum due to the influence of factors.

A.desertorum Schult in Eastern Ustyurt. Cenopopulations with the largest number of shrubs and, accordingly, average density are GP5, GP4 and GP1, located on the edge of the road. During expeditions Agropyron fragile (Roth.) P. Candargy (Siberian wheatgrass or brittle) is very rarely found in natural conditions, only 3 bushy plants were collected (44°25'52.8" N 58°11'42.9" E). Life form: perennial herb, found in the valley and delta of the Amu Darya, on Ustyurt and Kyzylkum, on sandy loam and loamy soils and sands. One of the most important factors of ecological significance is the strengthening of sand, and its economic significance is food and medicinal value. Height 60-65 cm, leaf length 30-40 cm, root length 11-13 cm, ears length 9-11 cm, width 0.8 cm. The land on which the plant is located is located along the road, in a place free from the influence of strong winds, where a small number of floristic communities are formed and rainwater collects. The plant produced long-lasting and high-quality fruits. It is less drought-resistant and more demanding of soil moisture than other wheatgrasses, but does not tolerate even short-term flooding.

All the evidence presented suggests that the most real threat to the survival of rare species is the disruption of the habitat to which they have adapted during their evolution.

It should be noted that the conservation of endangered and rare species and the study of the current state of their populations - distribution, abundance, density, especially the composition of juveniles - allows not only to assess their current state, but also to draw unambiguous conclusions about these species in the future.

A. desertorum Schult in Eastern Ustyurt. natural and especially anthropogenic factors that directly affect the state of xenopopulations are not noticeable. As noted by Johari, factors that partially negatively affect the state of cenopopulations include water and soil erosion in the habitats of the species, rodent activity.

Under the influence of these factors and based on the biological characteristics of the species A. Desertorum Schult. It has been established that xenopopulations form a unique structure. If we analyze A. desertorum Schult in Eastern Ustyurt. cenopopulations are normal, but incomplete. In particular, it is characteristic that in the cenopopulations GP1 and GP3, GP5, juvinyl bushes (k) are not found, and in the cenopopulations GP1, GP2, senile (v) bushes are not found (Fig. 4).

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