The Rare and Endemic Plants in Mountain and Foothill Territories of Kashkadarya Basin

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Abstract- This article involves the information on the level of degradation of vegetation communities spread in the upper parts of mountain and foothill territories of Kashkadarya basin. So, the list of rare and endemic species is also reflected in the article.

Index Terms- plant community, degradation, relief, endemic, rare, soil cover, ecological factor, edificatory, transformation, district.

I. Introduction

The Kashkadarya region includes of Karshi depression in southern Uzbekistan, bordered in the north by the mountains of Koratepa, Zirabulok, Ziyevuddin, in the east - by the foot of the southwestern part of the Gisar ridge [2]. As a result of the study, we analyzed a plant of mountain pastures and determined the current state of pastures in the Kashkadarya basin. The territory belongs to the temperate climatic zone. The climate is dry continental with long, hot and dry summer season; the winter season is short with mild frosts and little snow. The average annual temperature is 13˚ C - 14˚ C, the average temperature of January is 0˚ C - 2˚ C, average temperature of the July is 26˚ C - 28˚ C, the annual precipitation is 400 - 600 mm [12]. Restoration of the semi-arid shrub-steppe ecosystem has gained increasing attention over the last 20 years. This is the result of growing recognition of the values intact shrub-steppe ecosystems provide to communities. Soil stabilization may be the highest value of intact shrub steppe [9]. Intact shrub-steppe ecosystems also moderate wildfire spread, while disturbed shrub-steppe ecosystems dominated by invasive cheat grass (*Bromus tectorum*) cause increased fire frequency and intensity. In addition to increasing risk to lives and property, increased fire causes further loss of big sagebrush (*Artemisia tridentata*), the dominant plant in this ecosystem [11]. Intact shrub-steppe with sagebrush is needed as habitat for a number of birds [10], such as the sage grouse [1], which is now rare. Highly diverse communities dominated by native plant species are likely to be more productive [7] and thus support more diverse wildlife.

II. RESULTS AND THEIR DISCUSSION

One of the urgent tasks is to determine the level of change in anthropodynamic varieties (vegetation, degradation) of vegetative communities, which spreading in mountain and foothills areas of the Kashkadarya basin at a time when environmental tensions continue, including global warming. Because every plant in the nature has its own place, and it participates as a link in a food chain. Especially the age of endemic plants is divided into periods and stages, that is, the age and type of species should be subdivided. By the way information will be formed about their reserve potential. Mountain and foothills pastures' levels of degradation can be determined by drawing up a map for this region.

The map of the pastures is a scientific document, consisting of a geobotanical content of the district pastures, a combination of the distribution law, the area, the ecological status, the degree of distribution, the availability of the season. This map can be used to plan pastures, use plant raw materials, and protect nature conservation[6]. The relative importance of particular environmental variables for a species may vary according to the geographic and biotic contexts [8]. So there we can see the ecological niche. In our research area the level of ecological niche is declining due to there is no information about vegetation periods of plants in some people where they can pick vegetable bulb of plants.

It is important to analyze the distribution of endemic plants in the regions where we conduct scientific research. There are about 70 endemic, rare and relict species in the flora of Kashkadarya basin. Looking at the world's flora, endemic plants in Hawaiian Islands are 82-90%, New Zealand's – 72% and Madagascar – 60-65%. The decline in endemic plants is primarily due to the effects of environmental factors, on the other factor, because of non-observance of the protection measures. The list of rare and endemic species, spread in mountain and foothills of Kashkadarya basin is discussed.

Endemic plants with restricted and/or fragmented range often grow in stressful conditions. Their populations usually are characterized by unique internal organization, structure, morphology, and other biological features. Any anthropogenic impact (pollution, grazing, farming, recreation, etc.) exerts extremely negative influence on these populations, and can lead to their reduction or even extinction. For example, S. lilacinocoerulea is a perennial herbaceous plant 10 - 40 cm high growing on red beds, stony slopes and eroded clay soils among sparse juniper forests in the middle mountain belt (Figure 1) [13]. Considering these data, we conducted the research analyzes in Dehkanabad and Chirakchi district mountain ranges, including of Kashkadarya basin. According to research materials we defined the following plant species in the territories of mountain and

foothills in Table-1.

Figure 1. Typical habitat of *S. lilacinocoerulea*.Western spurs of the Hissar ridge, surroundings of the pass Tally. Photograph by N.Yu. Beshko.

Table-1
Rare and endemic species, spread in mountain and foothill areas of Kashkadarya basin

T/p	Endemic species	Status
1		
2	Astragalus komarovii	Rare
3	Astragalus massagetovii B. Fedtsch.	Rare, endemic
4	Astragalus leptophysus Vved.	Relict, endemic
5	Astragalus terrae-rubrae Butkov	Endemic
6	Astragalus butkovii	Rare, endemic
7	Calophaca reticulata Sumnev.	Endemic
8	Cicer incanum Korotkova	Endemic
9	Oxytropis tyttantha	Endemic
10	Hedysarum bucharicum	Rare
11	Hedysarum amankutanicum	Endemic
12	Hedysarum magnificum Kudr.	Endemic
13	Eversmannia botschantzevii Sarkisova	Endemic
14	Heliotropium bucharicum B. Fedtsch.	Endemic
15	Gladiolus italicus Mill.	Rare
16	Iris magnifica	Endemic

17	Iris svetlanae (Vved.) F. O. Khass.	Endemic
18	Ferula sumbul	Endemic
19	Ferula pratovii F.O.Khass. et I. I. Malzev	Rare, endemic
20	Ferula fedtschenkoana Koso-Pol.	Rare, endemic
21	Oenanthe heterococca	Endemic
22	Komarovia anisosperma	Rare, relict
23	Zeravschania regeliana Korovin	Endemic
24	Crambe gordjaginii Sprygin et Popov	Endemic
25	Spryginia winklerii (Regel) Popov	Endemic
26	Tulipa micheliana T. M. Hoog	Endemic
27	Tulipa korolkowii	Endemic
28	Tulipa affinis Botschantz.	Rare, endemic
29	Tulipa fosteriana Irving	Endemic
30	Tulipa orithyioides Vved.	Endemic
31	Tulipa ingens T. M. Hoog	Endemic
32	Tulipa uzbekistanica Botschantz. et Sharipov	Endemic
33	Colchicum kesselringii	Endemic
34	Spirostegia bucharica (B. Fedtsch.) Ivanina	Endemic
35	Pedicularis grandis Popov ex Vved.	Endemic
36	Euphorbia kudrjaschevii (Pazij) Prokh.	Endemic
37	Haplophyllum bucharicum	Rare, endemic
38	Allochruza gypsophiloides	Endemic
39	Silene popovii	Endemic
40	Silene oreina	Endemic
41	Dianthus uzbekistanicus Lincz.	Endemic
42	Allium botschantzevii Kamelin	Endemic
43	Allium majus	Endemic
44	Eremurus baissunensis O. Fedtsch.	Endemic
45	Eremurus robustus	Endemic
46	Eremurus luteus	Rare
47	Eremurus aitchisonii	Rare
48	Climocoptera pjataevae	Rare, endemic
49	Lagochilus inebrians	Endemic
50	Dracocephalum formosum	Endemic
51	Scutellaria fedtschenkoi Bornm.	Endemic
52	Scutellaria colpodea Nevski	Endemic
53	Phlomoides gypsacea	Endemic
54	Leonurus kudrjaschevii	Endemic
55	Ribes malvifolium Pojark.	Endemic
56	Cousinia allolepis	Endemic
57	Cousinia adenophora	Endemic
58	Cousinia butkovii	Rare
59	Cousinia campyloraphis	Rare, endemic
60	Cousinia spryginii	Endemic
61	Cousinia praestans Tscherneva et Vved.	Endemic
62	Lepidolopha nuratavica Krasch.	Endemic
63	Serratula lancifolia Zakirov	Endemic
64	Tanacetopsis botschantzevii	Endemic
65	Jurinea gracilis	Endemic
66	Jurinea asperifolia Iljin	Endemic
67	Jurinea sangardensis	Endemic
68	Koelpinia leiocarpa	Endemic
69	Aconitum talassicum	Endemic
70	Anemone bucharica	Endemic

We can see on the list of the table - 1, studying of the cenopopulation of these species and their preservation for the variety of flora of the region is one of the main criteria for environmental sustainability and sustainable development. In addition, anthropodynamic rows were also analyzed.

The level of the average degraded area (25-27%), a high degree of degraded area (60-72%), was defined. Population size was determined in each of them [3,5].

As a result of research which we conducted in Chirakchy district, 5 species of plants were identified on the area of $1m^2$. Poa and Carex, which is considered a good forage, are 10.2 grams, the remaining plants are 31.6 grams and they are plants which livestock badly eat the plants [4].

III. CONCLUSION

In conclusion, it can be said that in many pastured pastures, it was determined that the edificator species (Agropyron, Poa) were in the senile period, and regressive states were studied. When their yields were studied, the reproduction of the seeds is almost impossible. These vegetation communities were more transformed and these were observed in the districts of Chirakchy and Dehkanabad. Hence, the degree of degradation depends on the number of seeds in the soil, productivity and cenopopulation times and stages.

In order to prevent and minimize the process of degradation, there not to exceed the number of livestock and there is a need to change pasture lands. For this reason, it is necessary to develop methodological guidelines on the vegetative process of plants. For this purpose, it is necessary to introduce ecological science at schools, lyceums and colleges as the science, as well as to learn ecological concepts, use ecological projects for the pupils and organize the ecological pathways are today's main issues.

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