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Sand Distribution In Central Fergana

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ABSTRACT

Sands have a high heat capacity and rapid heat transfer - properties that sharply distinguish them from all other soils and determine the characteristic climatic conditions of sand massifs.

KEYWORDS

Sand, valley, horizon, soil fertility, sea bay, sand moisture, aeolian sands.

INTRODUCTION

The sands of the Fergana Valley, occupying an area of about 80 thousand hectares, stretch almost as a continuous, sometimes expanding, sometimes narrowing strip of separate sections, which starts from Khojent (Leninabad region of the Republic of Tajikistan), and ends between Balykchi and the Shakhrikhan fog of the Andijan viloyat. The general main direction of this strip of sandy areas goes from W, SW to

E, NE, coinciding, as we will see below, with the direction of the southwestern strong winds prevailing here. Starting in the west at Khujand, the southern border of the sands goes further past the villages: Katagan is currently located under the Kairakum reservoir, then they continue north of Mahram, Sheid-Mazar, Sharvord, Kara-Kuyli, Kiali, Dultali, Dehkan-tuto, Yon, Kalamysh, Polvan-Tash, Turt-Aigir,

Targava, Dauchar, Alty-Kush, Kashgar, Kara-Kurpa, Chankent, Bayvacha, Sultan-Bayazit and Begovat; then to the east of the villages of Khanovat, Karim-Baba, Karaul-Tepa and Baghdad (North of the Karakalpak steppe), and from here partly along a broken line, partly along a curved line past the wintering grounds of Takkali; at northern Takkali, the border turns to Yazyavan, and from here, describing an incorrectly curved arc, it goes to Mingbulak, and then past Gurtepe, Damkul, Mazgil, Gauzak, Kush-Tepe, Kunduk, Abu-Samad goes to Chil-Makhram; here the border of the sands passes to the right bank of the river and goes first to Kamysh-Kurgan, Mount Supa-Tau and Mazar, Khoja-Yagan, and then almost in a straight line, along the foot of Ak-Bel to the intersection with Daria slightly east of the Katagan village meridian.

These boundaries do not include:

- a) Sands lying between the villages: Rapkan, Akhta, Ala-Tai, Dagestan, Kara-Yantak and Yar;
- b) A strip of sandy dunes, going from Abdu-Samat to Ak-Dzhar and abutting on the left bank of the Darya a little to the east of the last village;
- c) Those individual sand dunes that are visible among the cultural area on both sides of the road, between Besh-Aryk and Kokand, in the vicinity of the villages of Tamasha and Yangi-chek, Katta Turk;
- d) And finally a small sandy area near the village of Zilkha.

The origin of these sands is associated with the alluvium of the r. Syr Darya, Isfara, Sekh, Shakhimardan, Isfayram and Ak-Bura, to this we can add eolian accumulative materials in the irrigated zone. Intra-asis planned sands,

depending on the depth of the water-resistant horizon (a horizon with a heavy texture, with a shock and arzyk), is divided into four groups: deep sands, their thickness is more than 1.5 m; sands underlain on an impermeable horizon at a depth of 1.0-1.5 m; sands underlain on an impervious horizon at a depth of 0.5-1.0 m and sands underlain on an impervious horizon at a depth of less than 0.5 m. The natural screen depends on these impervious horizons and the thickness of the sands, as described below.

THE MAIN FINDINGS AND RESULTS

The consistent development of scientifically grounded farming systems, the expansion of the use of soil-protective methods of land cultivation and the implementation of anti-erosion measures will provide a significant increase in the productivity and sustainability of agriculture, the implementation for these purposes of a set of measures to increase soil fertility, the introduction of intensive technologies for the cultivation of agricultural crops.

The mobility of sand affects both when it moves in an aquatic environment in a suspended and secular state in rivers, seas and lakes, and when it is saturated with water in quantities exceeding its porosity, fine-grained sands, swelling of sea bays and sands-quicksands, abundant in ground waters, saturated with water. Water in quantities of less porosity of sands, due to the force of surface tension, makes the sands compacted. However, sands completely devoid of film water are easily mobile in another medium - in air. Easy floatability and flowability of sands inextricably linked by high porosity, fluctuating in clean sands from 26% to 87%, on average in bulk sands equal to 40.4%. The high porosity of

the sand gives rise to its high moisture content, the ability to greedily absorb and retain the maximum amount of moisture (depending on the texture of the sand). The height of the capillary rise of water in fine-grained alluvial and aeolian sands ranges from 0.7 to 1.5 m, in coarse-grained sands it decreases to 0.3 m. Sands have a high heat capacity and rapid heat transfer - properties that sharply distinguish them from all other soils and determine the characteristic climatic conditions of sand massifs.

The material composition of sands is extremely diverse and depends on the nature of the processes that form sand from rocks; the predominance of chemical or mechanical weathering, factors and conditions of transportation; the environment in which the strata was deposited; on the geographic environment and factors of secondary redeposition of the strata and its transformation and the stage of development of this redeposition.

Coming to the study of individual massifs of sands, they find out the meaning of their local names, since they usually very aptly reflect the most characteristic features of the massif and each tract. At the same time, the distorted interpretation of the name distorts the idea of the very nature of the massif and its economic significance. The final solution to the questions of the origin of the sands requires a thorough paleogeographic analysis based on their mineralogical study.

Elucidation of the connection with undisturbed strata can give an answer about the origin of the winding sands in cases of their similarity with these strata. But sands can sometimes migrate thousands of kilometers from their

power sources when transported by rivers and hundreds of kilometers when carried by the wind. In these cases, microscopic examination of the sands is necessary to clarify the genetic links.

Elucidation of these properties of sands is necessary to determine their industrial suitability and also makes it possible to establish the factors of sand transfer. Alluvial river sands are the least sorted and contain sharply fluctuating amounts of silty and clayey fractions, sometimes with a gradual transition into sandy clays. Eolian sands are the best sorted: in them up to 99% of the volume falls on a fraction of 0.25 - 0.05 mm, and smaller and coarse fractions are found only in fractions of a percent.

Desert sands are the most diverse in their mineralogical composition, because, being formed as a result of mechanical weathering, they often consist of such minerals that in more humid conditions could not be preserved in the form of grains of sand. Such are the feldspar sands prevailing in the foothill deserts, as well as sands of limestone from fragments of clay and gypsum.

For judging the fertility of sands, data on the total composition of sands and chemical analyzes of water-soluble salts, which are most easily and quickly assimilated by plants, are important. The sands of countries of northern and temperate and humid climates, where chemical weathering and leaching prevail, are usually poorer and less fertile and require enrichment. The sands of dry countries, where mechanical weathering and sweating of solutions from the surface prevail, are more fertile if they do not contain excessive amounts of salts harmful to plants. Sampling for

chemical analysis of sands should be carried out either according to a method common for minerals, or according to the method of soil research. Sands in a dry state are easily moved by winds, even at a speed of 3 m / s.

The widespread idea that only man is to blame for the mobility of sands, even deserts, is incorrect and leads in some cases to an underestimation of the complex and varied natural conditions, and in others - to unjustified fears of using sandy pastures.

The tasks of fixing the sands, enriching their vegetation cover and their correct use (viticulture, horticulture, forest planting, grass planting, grazing) require a thorough clarification of the conditions for the movement of sands by the wind, in relation to the specific circumstances of not only a given area or land, but also each element of their relief separately (depressions, slopes, ridges).

CONCLUSION

The intensity of the transfer of loose sand depends not only on the strength of the wind, air temperature and the size of the sand grains, but also on their shape, specific gravity, the presence of substances binding the grains of sand, moisture and the degree of roughness or polishing of the grains of sand, as well as on the nature of the mass undergoing development, and its relief. The very structure of the wind is so heterogeneous that the wind-sand flow cannot have the same degree of saturation with sand over its entire area.

The sands of our deserts, semi-fixed by a thin sod cover, intertwine extremely slowly, but nevertheless they never stop moving. But the final result of the development of the relief of sod sands does not at all indicate the extreme

slowness of the transfer of sand to them. This transfer is also uneven in space (since the density of the sod cover is also uneven), but it is quite intensive. Forms of sand relief and their dependence on the wind regime.

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