

Some Issues of the Mapping the Oasis Landscape of Uzbekistan

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Abstract: *Landscape complexes exist in nature at various scales based on their size, i.e. taxonomic colouring. Landscapes of the oasis are commonly used in the modern landscapes of Uzbekistan and are rarely mentioned in the geographical atlases being produced. Therefore, the development of maps illustrating each oasis and its morphological configuration is of considerable significance from a theoretical and functional point of view when it comes to solving the problem of landscape-type mapping of oases.*

Keywords—Mapping; landscape; oasis; complexes; tract; terrain; Uzbekistan.

1. INTRODUCTION

Landscape complexes occur in nature at various scales depending on their large size, i.e. taxonomic coloration. They include geocomplexes, ranging from a system linked by a historical commonality of origin and formation, to the largest system. In the geographical literature, a system of taxonomic units of regional (mainland, region, territory, zone, region, district) and typological (landscape type, terrain type, tract type, fascia type) landscape complexes has been developed, which have found their full expression and are scientifically justified. This system of taxonomic units is widely used in landscape-typological mapping of territories and natural-geographical zoning. Identification, delineation and mapping of natural and anthropogenic oasis landscape complexes in the field remains one of the urgent problems not only at the present time, but also in the future. It is known that a large part of our republic is occupied by anthropogenic oasis landscapes. However, the study of oasis landscapes, their morphological structure, classification, and mapping are poorly covered in the geographical literature.

2. GEOGRAPHICAL ZONING SCENARIO

A map of the complex geographical zoning of Central Asia was compiled by V.M. Chetyrkin (1960) on a scale of 1:10,000,000. In the legend of the schematic map, the names of Fergana, Soh, Chotgol, upper-Surkhandarya, lower-Surkhandarya regional complexes are given and they are indicated on the map by numbers.

L.N. Babushkin and N.A. Kogay (1964) dealt with issues of landscape cartography and natural-geographical zoning of the territory of Uzbekistan, initially drawing up a landscape map with a small scale and on this basis drawing the boundaries of natural-geographical areas and districts. The authors divided the middle Zarafshan district into Kattakurgan, Samarkand, Nurata, Gallaorol and Sangzor natural and geographical regions. A typological map of a small-scale schematic landscape compiled by N.A.Gvozdesky (1965) for the purpose of natural and geographical zoning of the Samarkand region described 35 geocomplexes, of which 29 were natural and 6 were anthropogenic oases.

T.V. Zvonkova (1965), M.U. Umarov (1967) during the landscape-typological study of the Bukhara region and the territory of Lower Zarafshan, along with the study of desert geosystems, gave a brief description of the oasis landscapes developed in the deltas of Bukhara and Karakul of the Zarafshan river, sandy, shurhak desert landscapes adjacent to the Bukhara, Karakul and Karshi oases, agricultural landscapes irrigated from ancient times, and made a schematic map of them. Landscapes of the Kashkadarya valley were studied and mapped by S.A. Nishanov (1964), landscapes of the Ferghana swamp and their morphological structure by M. Kuziboev (1966). M. Kuziboev (1966) compiled a medium-scale colorful landscape reclamation map of the Ferghana swamp.

In the works of A.A. Abdulkosimov (1966, 1983), zonal and vertical differentiation of the oases of the Ferghana swamp, identification, differentiation, mapping and classification of typological units that make up their morphological structure are more common. The author first made colorful typological map of the landscape of the Fergana swamp scale 1:500 000, in which he described the types of lowland areas deserts, terraced deserts, eolian sandy deserts, foothills, semi-deserts, foothills, and foothills. In addition, the author compiled large-scale schematic typological maps of the landscapes of the Samarkand, Kattakurgan, Ferghana, Andijan, Kokand, Denau and Khorezm oases.

Y. Sultanov (1974) was engaged in large-scale landscape-typological mapping of the lower part of Isfayram river in the Fergana Basin, where erosion-free flat soils on the tops of hills, eroded erosion-degraded flat soils of hills, wide gentle slopes with erosion, dividing meadow-marsh slopes, mountain ridge streams and small sand dunes, and described their location on the map in the form of black and white stripes.

The issue of complex mapping of land and water resources of irrigated territories of the Republic of Uzbekistan and its use in land reclamation is covered in detail in the works of A.A. Rafikov and T.M. Mirzaliev (1976). A.A. Rafikov, I.A. Hasanov, V.A. Popov, B.A. Bakhriddinov (1981), V.A. Popov (1990) and others made a great contribution to the detailed study of the natural-territorial complexes of the South Aral Sea and their medium-scale mapping. The map compiled by these authors shows 17 types of automorphic, 14 types of semi-hydromorphic and 27 types of hydromorphic natural territorial complexes.

3. ANALYSIS OF LANDSCAPE MAPPING OF UZBEKISTAN

An analysis of the work done on mapping the landscapes of Uzbekistan shows that most of them are devoted to mapping natural landscapes, and little attention is paid to mapping oasis landscapes. However, in the composition of modern landscapes of Uzbekistan, the landscapes of the oasis are widely represented and are rarely described in the created geographical atlases. Therefore, when solving the problem of landscape typological mapping of oases, the creation of maps describing each oasis and its morphological structure is of great importance from a scientific and practical point of view.

4. METHODS OF CREATING LANDSCAPE MAPS

Since the 1950s, the principles and methods of landscape mapping have been developed. Large-scale (1: 10000 - 1: 100000) experimental mapping was carried out over large areas. All of these maps were created using field imagery, and some parts were created using aerospace imagery. The object of description is, first of all, the morphological units of the landscape: morphological parts, such as a place, tract, facies.

A.G. Isachenko (1963, 1991) created a series of landscape maps of various scales. Large-scale maps created by the author were compiled on the basis of aerospace and field images, medium-scale maps were created on the basis of an analysis of field routes and various special, general geographic maps, literature and other materials. Fascia and tracts are plotted on large-scale maps, and tracts and types of locations are plotted on medium-scale maps.

The similarity method is also widely used in the creation of landscape maps. O.N. Kazakova (1955) used a special method of describing morphological units when building maps of medium and small scale. The essence of this method is that the map shows the outlines of large territorial units - landscape, region, province, and the tracts that make up their main morphological units are depicted with special symbols. However, this map does not show the contours of the types of natural boundaries or their regional distribution.

Special directions of landscape mapping were developed by F.N. Milkov, who, according to the author, took the type of landscape, type of terrain and type of tract as taxonomic units of landscape mapping. F.N. Milkov (1954, 1959) was one of the first to investigate, describe and map typological landscape complexes within the forest-steppe and steppe zones of the East European Plain.

N.A. Solntsev (2001) expressed the idea of integral and incomplete natural complexes, and integral complexes consist of five main components: the earth's crust, air, water, plants and animals. Incomplete complexes consist of one to four components, while phytocenoses and zoocenoses are divided into one-component natural complexes, biocenoses into two-component, biogeocenoses into three-component, hydrobiogeocenoses into four-component natural complexes. To distinguish complete complexes from incomplete ones, N.A. Solntsev suggests calling them natural territorial complexes (NTC), which are objects of study of natural geography.

The taxonomic and morphological separation of landscapes benefited from criteria developed by scientists at Moscow State University N.A. Solntsev (2001), G.N. Annenskaya, I.I. Mamay, V.K. Juchkova, V.R. Kalinina, V.A. Nizovtsey, M. A. Khrustaleva, Y.N. Tselchuk, I.I. Mamay, and others, based on A. Rakhmatullayev's work.

K.I. Gerenchuk (1957) believes that, given the regional specifics of the system of "location types", a separate map should be created for each zone and province. Larger-scale maps were compiled by K.I. Gerenchuk for the western regions of Ukraine, but these maps often revealed units that did not correspond to it under the name "types of places". For example, on some maps, the type of woman does not differ in content from the type of hope, or the type of house corresponds to the types on the terrace on F.N. Milkov, on the terrace at the back, and in the landscapes on M.M. Koynov. K.G. Raman, who developed the system and methodology for the taxonomic units of landscape mapping, also mapped landscapes. The main object of the maps created by the author was the natural boundaries.

Significant advances have been made in landscape mapping in recent years, and structured landscape maps have gained more acceptance. But there are many shortcomings in this important area of geography. Such disadvantages can be overcome through the correct conduct of comprehensive research, sustainable development of scientific directions and their improvement. Based on the above considerations, it is possible to single out very important stages in the detailed coverage of the main problems

of landscape mapping. For example, there are still various uncertainties when looking at current landscape maps and making maps and their legends. In our opinion, the main reason for this is the different understanding of the principles of classification of landscape complexes and their morphological units, which are the object of mapping.

5. PRINCIPLES OF OASIS LANDSCAPE MAPPING

We set ourselves the goal of creating landscape maps of oases and managed to create landscape maps of oases in several regions of Uzbekistan. When creating these maps, we proceeded from the following principles:

1. Select a horizontal mapping object and determine at what scale to implement it. To solve this problem, we first need to know the range of the geographic complex depicted on the map. Secondly, it is necessary to take into account the scale of the created map and for what purposes it will be used. Thirdly, attention should be paid to the nature of the landscapes of the selected geographical object and the degree of their study. Following these criteria, the first version of the landscape typological map is created.
2. Identification, demarcation and demarcation of the geographical complexes depicted on the map through practical field research. When identifying and delineating geographic complexes, it is advisable to use the types of soil cover, landforms, lithological composition of parent rocks, and other indicators.
3. Carefully develop a scheme for typing and classifying the geographical complexes depicted on the landscape map, according to the degree of morphological similarity. To create typological landscape maps, it is first necessary to typologically systematize facies, tracts, places and landscapes identified in the field or laboratory conditions, and then to classify them. Typed and classified geographic complexes serve as the basis for developing map legend. The essence and content of landscape maps should be reflected and expressed in the legend. Only then will the scientific and practical significance of the card increase.
4. Creation of a legend that clearly expresses the content and essence of landscape typological maps and the geographical complexes depicted on them. The principle of creating a legend for landscape maps is somewhat more complicated and problematic than other principles. The legend should reflect the name of certain geographic complexes, their characteristics, similarities and differences in structural structure, systematization according to certain types, relief elements, soil types, zonal and azonal plant species, etc. Landscape maps of various scales and their legends should be easily understood and read not only by landscape geographers, but also by specialists in other fields. Because landscape-typological maps and their legends can serve as a basis for creating such maps as landscape-ecological, anthropogenic changes in the landscape, landscape desertification, landscape cadastre, anthropogenic landscape forecasting, as well as the development of various activities.

T.M. Mirzaliev (1992) noted that when creating maps and displaying geographic objects, events and events on them, it is advisable to use special cartographic methods - such as dashed lines, equal lines, high-quality colors, areas. We also used various cartographic methods to depict anthropogenic geocomplexes of oases on landscape typological maps, including methods for depicting land types and types of tracts with a colored background and black and white background using bar codes.

We used the methodology of F.N. Milkov (1973), A.A. Abdulkasimov (1983, 1989) and others to create maps of anthropogenic landscapes at different scales with the identification of morphological units that are part of anthropogenic geosystems in selected areas of the oasis and display them on a landscape typological map.

6. CONCLUSION

In conclusion, the complex morphological structure of oasis landscapes should be noted. They were studied according to the type of tract, the type of terrain and the scale of the landscape class. The anthropogenic oasis landscapes of Uzbekistan are subdivided into such classes as agro landscape, residential landscape, industrial landscape, Madfun ancient residential landscape. Based on the identification of morphological units of oasis landscapes, large-scale landscape-typological maps of the Samarkand, Kattakurgan, Kokand, Fergana, Denau, and Khorezm oases were created. The inclusion of maps of the created landscapes of oases in the geographic atlas of Uzbekistan can help enrich the content of the atlas.

7. REFERENCES

1. Abdulkasimov A.A. Problems of studying the intermountain-hollow landscapes of Central Asia (monograph). - T.: Science, 1983. -- 126 p.
2. Babushkin L.N., Kogay N.A. Physical and geographical zoning of the Uzbek SSR. // Proceedings of Tashkent State University, vol. 231. - T., 1964. - p. 5-247.
3. Gvozdetsky N.A. Physical and geographical zoning of South-West Uzbekistan for agricultural purposes. // Natural conditions and resources of South-West Uzbekistan. - T.: Science, 1965. -- p.337-370.

4. Zvonkova T.V. Applied Geomorphology. - M.: Higher. School, 1970. -- 272 p.
5. Kazakova O.N. From the experience of field landscape research. // Izv. VGO, v. 87, no. 2, 1955. –S.12-21.
6. Isachenko A.G. Landscape studies and physical and geographical zoning. - M.: Higher school, 1991. -- 366 p.
7. Rafikov A.A., Zokirov Sh.S., Popov V.A. Landscape map. Geographic Atlas of Uzbekistan. -Tashkent, 1999.
8. Solntsev N.A. On the morphology of the natural geographic landscape. // The doctrine of the landscape (selected works). –M.: Publishing house of Moscow State University, 2001. –S. 45-73.
9. Chetyrkin V.M. Middle Asia. Experience in complex geographic characterization and regionalization. - T., 1960. -- 240 p.
10. Yarashev K., Meliyev B. Problems of studying and mapping paragenetic landscape complexes in Surkhandarya region // European Sciences review. Scientific journal. № 3–4. –Vienna, 2015. –p. 7-9.