

# *About The Vertical And Horizontal Boundaries Of Landscapes*

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**Abstract** – The author analyzes the features of the vertical and horizontal boundaries of landscapes, highlights the zonal and azonal factors of this phenomenon.

**Keywords** – Vertical And Horizontal Boundaries, Landscape Boundaries, Contrast, Vertical Structure, Elementary Landscape, Differentiation, Natural-Territorial Complexes

## I. INTRODUCTION

In scientific landscape science, the most urgent are the issues of determining the vertical and horizontal boundaries of natural-territorial complexes.

The questions related to the determination of vertical and horizontal boundaries of landscapes are highlighted in the scientific works of D.A. Armanda [1964], F.N. Milkov [1966], M.A. Likhoman [1970-1982], V.B. Sochava [1978], V.A. Bokov [1983], A.M. Trofimova [1979], N.L. Beruchashvili [1990], A.G. Isachenko [1991] and others. The horizontal boundaries of landscapes have been studied in most detail; there is some information about the vertical boundaries of landscapes in the scientific works of A.G. Isachenko [1965], A.D. Reteyuma [1966], K.E. Dyakonova [1971], V.B. Sochov [1978], I.I. Mamay [1978], N.L. Beruchashvili [1990].

## II. MAIN PART

Since the landscape itself is formed by the interrelationships of zonal and azonal factors, when determining their vertical and horizontal boundaries, it is necessary to take into account the differentiation of natural-territorial complexes according to the leading characteristics.

According to A.G. Isachenko [1-134] vertical and horizontal differentiation of landscapes is due to zonal factors, the same factors in a ring-line determine the boundaries of landscapes. Spatial boundaries of landscapes are the most dynamic and changeable in time if they coincide with the boundaries of the most dynamic components (climate, vegetation). More stable components (morpholithogenic basis) determine the vertical boundaries of landscapes, since it is related by contrast in positional location.

According to the definition of A. G. Isachenko [1. 14] vertical and horizontal differentiation of landscapes is conditioned by zonal and azonal factors, these same factors ultimately determine the boundaries of landscapes. Spatial boundaries of landscapes are the most dynamic and changeable in time if they coincide with the boundaries of the most dynamic components (climate,

vegetation). More stable components (morpholithogenic basis) determine the vertical boundaries of landscapes, since it is related by contrast in positional location.

By definition F.N. Milkova [2] in the geographic envelope, two types of contrast are characteristic: vertical and horizontal. When separating the vertical and horizontal boundaries of landscapes, the presence of many contrast boundaries on it is most pronounced. Orographic contrasts are especially pronounced in which, with the participation of the main types of relief, a vertical border of landscapes appears in positional location.

According to A.G. Isachenko [1, p. 164], the constituent parts of the vertical structure of the landscape are usually considered to be separate geographical components - solid foundation, soil, biota, etc., the horizontal boundaries of the landscape are determined by the positional arrangement of neighboring landscapes and material - energy processes that cause further differentiation.

Accordingly, the vertical structure of geosystems, formed by natural components and inter-component, vertical connections, and the horizontal structure of complex landscape geosystems, formed by their morphological elements and horizontal connections between them, are distinguished. The horizontal structure is a discrete and continuous border of landscapes of different scales and their morphological units.

According to N.A. Solntsev [3] drawing the vertical boundaries of the landscape is the most difficult and it is associated with the features of the relief. When determining the horizontal boundaries of landscapes, both zonal and azonal components are involved. The upper boundaries of landscapes along the vertical are determined by the boundaries of atmospheric flows, since it is changeable with abrupt changes in geothermal gradients. In this case, it is necessary to take into account the turbulent state of the active layer of the atmosphere.

V.A. Bokov [4] believes that the horizontal boundaries of landscapes are clearly fixed by the above-ground components of the landscape and at the same time the boundaries of the vertical boundaries are reduced.

In our opinion, when determining the vertical and horizontal boundaries of landscapes, it is most important to fix their lower boundaries. This is a very complex process that requires taking into account the patterns of territorial differentiation. Currently, there are such opinions that the less violent the landscape, the more concretely the vertical and horizontal boundaries of the geocomplexes appear.

O.N. Solntsev [3] and V.B. Sochava [5] believes that the boundaries of biocenoses coincide with the boundary of the facies. However, there is also some opinion on the definition of the lower boundaries of the morphological parts of the landscape, for example, M.A. Glazovskaya believes that the lower boundaries of the facies coincide with the soil horizons (B, C) [6].

According to N.L. Beruchashvili [7. C, 20]:

1. The facies boundary follows the boundary of two different bedrocks (eg sandstones and limestones);
2. The facies boundary follows the boundary of the bedrock (limestone, sandstone, granite, etc.);
3. The facies boundary runs along the water table. This refers to the deepest level during the year, not seasonal fluctuations.

Since the landscape components are the most dynamic, the definition of the lower boundaries of the tracts and facies is most complicated and depends on local conditions. For example, in monolithic mountain landscapes, rocks of the same age can have thicknesses from 2000 to 5000 m and more. In other cases, in heterolithic landscapes, genetically varied rocks may have a thickness of more than several tens of meters or less.

If the boundaries of facies and tracts are determined by the thickness of the same type of rocks in the mountains, then the vertical boundary of the facies is much greater than the horizontal boundary. At the same time, the determination of the lower boundary of facies by contact zones is unthinkable. In other cases, when the facies are located in different morpholithogenic bases, the lower boundaries of elementary landscapes are much more complicated.

Currently, there are opinions that with an increase in the scale of taxonomic units of landscapes, the vertical and horizontal boundaries simultaneously increase.

These ideas are clearly substantiated by V.B. Sochova [5] who graphically showed (the idea of) "nesting" of smaller complexes into larger ones. Thus, according to V.B. Sochova vertical border for planetary geosystems - 7 km, for regional - 4 km, for typological geosystems within 2 km.

R.Y. Khalikov (the author of this article) expresses the opinion that the vertical and horizontal boundaries of landscapes do not coincide, vertical boundaries are distinguished by azonal, horizontal boundaries by zonal and azonal features. The vertical and horizontal boundaries of landscapes are becoming complex, which unite many private boundaries [s, 154-155].

### III. CONCLUSION

Analyzing the above, we draw some conclusions:

1. Landscapes as a spatio-temporal system, which have specific physical quantities that are in close relationship and are the object and phenomenon itself;
2. Landscapes of any scale and level are outlined by its vertical and horizontal boundaries;
3. When isolating the vertical and horizontal boundaries of landscapes, it is necessary to take into account the leading factors and the positional location of the zonal and azonal components.

### REFERENCES

- [1] Isachenko A.G. Landscape studies and physical geographers zoning. Moskva. «Vysshaya shkola», 1991 - p. 366.
- [2] Milkov F.N. Paragenetic landscape complexes // Scientific notes of the Voronezh department of the Geographic Society of the USSR. Voronej, P.19-66, 24-32.
- [3] Solntsev N.A. Systemic organization of landscapes.- M. : Mysl, 1981. p. 239.
- [4] Bokov V.A. Prostranstvenno – Temporary organization of the geosystem. – Simferopol: publishing house SGU, 1983
- [5] Sochava V.B. Introduction to the doctrine of the geosystem.- Novosibirsk: Nauka, 1978. p.319.
- [6] Glazovskaya M.A. Typology and methodology of geochemical bases. –M. publishing house MGU, 1964 year.
- [7] Beruchashvili N.L. Landscape Geophysics: A Study Guide for Geographers. VUZov. – M.: vysshaya shkola, 1990, - p. 287.
- [8] Xalikov R.Y. Fergana Valley. Monografiya T., «Navruz» , 2020, p. 168.