

**CONCEPT AND METHODS OF
GEOECOLOGICAL EVALUATION
OF THE TERRITORY'S CLIMATE COMFORT
ON EXAMPLE OF THE SOUTH
FEDERAL DISTRICT**

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Comfort climatic conditions is an important environmental factor, that forms environmental, climatic and natural-resources potential of a region, which determines the life activities of its inhabitants and should be definitely taken into account.

Currently, almost all large-scale geographical studies focus on the already existing global and regional environmental problems, which became acute recently. Moreover, the majority of the researches study the anthropogenic effects on the environment, ignoring its natural processes and changes. Due to that fact, the existing concepts of environmental geographical researches are controversial, in other words, there are some contradictions between the content of the subject field in general and the outcoming information and its credibility.

Studies on the global environmental changes, which are based on a detailed analysis of the anthropogenic influence, without regarding the natural processes and specific regional conditions, especially when used to forecast long-term changes, are often unbalanced and, consequently, can lead to false conclusions. In order to solve the problem of the worsening environment, one should consider not only the anthropogenic effects, but also the whole range of interactions within the «environment – human – society» system.

Natural and anthropogenic geosystems should be regarded as natural-anthropogenic, where self-regulatory mechanisms are combined with the human

influence. This additional pressure causes transformations and disturbs the balance of the whole environmental climatic system on the Earth, also affecting other global ecosystems. Assessment of environmental developments and environmental geographical evaluation of a specific territory require the knowledge of development laws of the Earth's geographical sphere as a planet and its geographical space, which is connected with the solar activity and geomagnetic storms, as well as the main laws of the geographical zonality, involving solar radiation, humidity, temperatures, evaporation, rocks and tectonics.

Basing on the retrospective analysis and summary of scientific researches, and regarding the current status of the problem, terms and notions, related to the environmental geographical evaluation of the environmental natural component have been thoroughly selected. The chosen anthropocentric approach is determined by the aim of the study. Author's original concept emphasizes the determining role of the regional natural component, thus providing territorial fullness and integrity of the research and, as a result, higher objectiveness of the territorial analysis. Regional climate comfort is regarded as an integral characteristics of its climatic and bioclimatic conditions, which includes several bioclimatic indices and comprises an integral index of bioclimatic comfort (IIBC). Climatic comfort («comfort») is such a psycho-physiological condition, which is ideal for human life activities in areas of his constant or temporary inhabitancy. Sub-comfort climatic conditions («sub-comfort») mean slightly unpleasant environmental conditions, when a human adaptation mechanisms provide nearly optimal psycho-physiological state for a normal living. Discomfort climatic conditions («discomfort») mean rough environmental circumstances, when human adaptive mechanisms cannot provide an optimal psycho-physiological state and additional protective measures are required for a normal life activity.

Terms and notions of the concept	
Basic notions	Derived notions
Test territory	Geographical space Climatic comfort
Methods of climatic comfort evaluation	Comfort, sub-comfort, discomfort Bioclimatic indices Integral index of climatic comfort IICC
Medical bio-meteorological forecast	Neuro-network model, development and application methods

The concept of the environmental geographical research on a spatiotemporal structure of the climatic comfort, based on principles of geocentrism, anthropocentrism and chronological order, is shown on fig.1. Its unique character lies in the fact, that an objective environmental geographical evaluation requires a de-

tailed analysis of the environmental natural component and the effect of the bioclimatic component of the climate on a specific territory. The concept develops an idea and describes the stages of the research, covering the following aspects:

- Aim of the research;

- Current state analysis;
- Existing problems;
- Main and derived notions;
- Decision principles;
- Tasks;
- Criteria and indices;
- Research structure and methods.

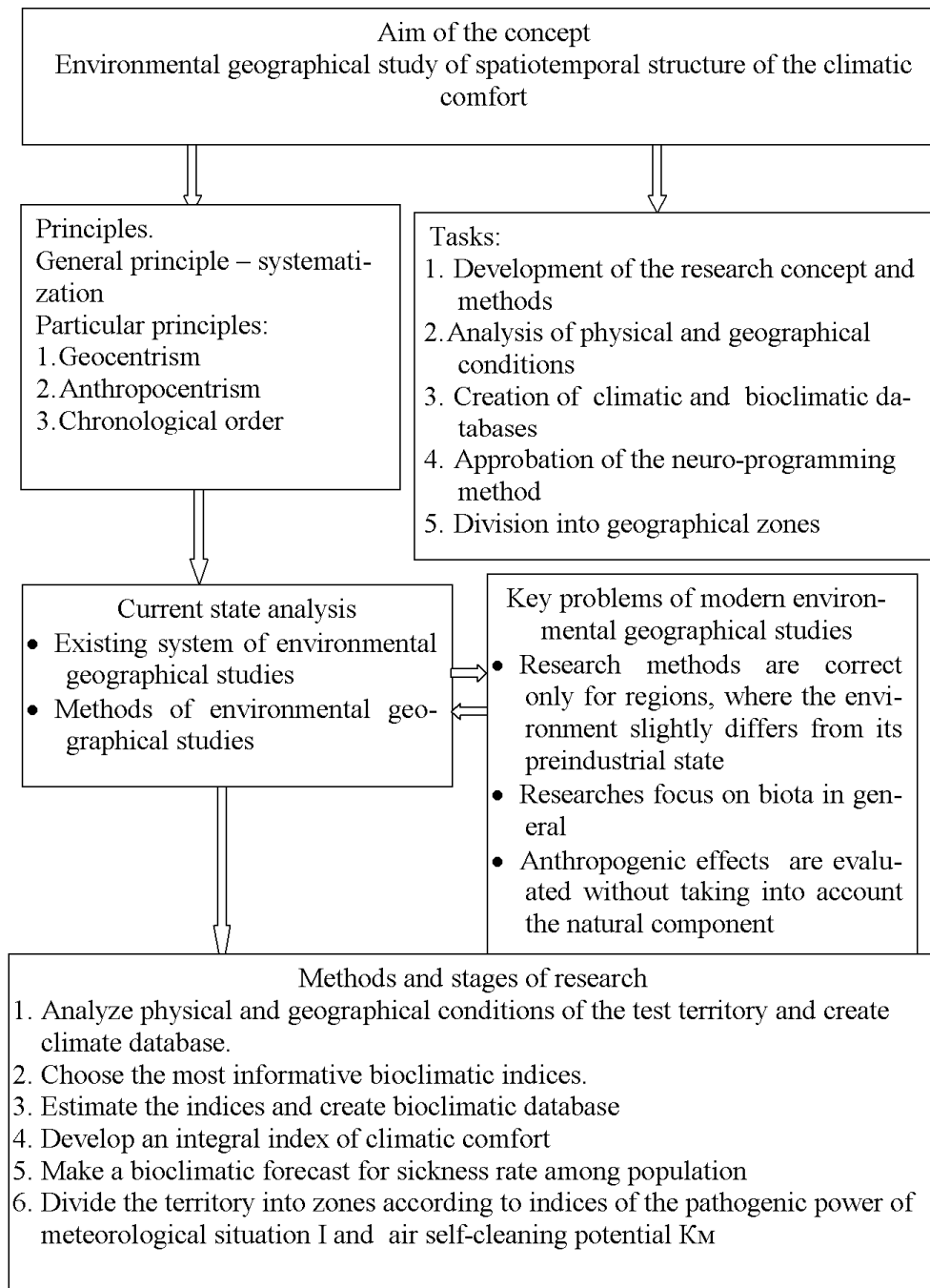


Figure 1. Concept structure

Every person has his individual ideal conditions, limited by stress zones and survival limits, which are determined by every single environmental factor (though environment is rarely influenced by only one factor). In most cases the environment experiences an influence of numerous factors, and their

influence cannot be measured by their simple summation. One should also consider the limiting factor law (Liebig's Law of the Minimum and Shelford's rule), which says, that even if one factor exceeds its optimum, it causes stress for an organism; its considerable excess can be fatal. Anthropogenic influences happen

on the natural background. Moreover, it is well known, that the nature can to some extent neutralize some contaminating elements, which, in their turn, interacting with each other and natural factors, are able to create new secondary, often even more harmful reactions, increasing their negative effects on the environment and living organisms (synergetic effect).

The proposed concept let receive maximally objective information about the region's favorability for human life activities, as well as provides for a better control over the anthropogenic influence.

References

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