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State University of Land Use Planning - a driver of ecological development of small regions in the conditions of Covid-19

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Abstract. Responding to global global challenges and sustainable development goals, the State University of Land Use Planning (LUP) is trying to modernize its scientific, educational and economic activities and introduce the best available technologies in the field of rational nature management. The University pursues an environmental policy, which should become a guarantor of sustainable environmentally oriented development of small regions in accordance with the SDG.

Since 2018, LUP has been actively participating in events organized by the IU Green Metric community. The use of the "green" campus practices offered by IU Green Metric for an educational organization contributes to the dissemination of a culture of sustainable development in relation to all stakeholders. The significance of the project is connected with the need to strengthen the practical elements of training environmental specialists; assessment of the anthropogenic load on the unique campus territory under the influence of intensive development of the district's infrastructure; the need to improve the general ecological culture of the population, as well as to ensure the competitiveness of Russian universities.

The paper shows the features of the implementation of measures related to the environmentally sustainable development of small regions within the framework of educational field and production practices in the conditions of COVID-19, the experience of conducting a comprehensive geoecological assessment of the Osetr river basin in the period 2015-2021, agroecological assessment with subsequent analysis of the state of agroecosystems based on the results of systematic regular observations for the rational use and protection of landscapes on the territory of the SEB "Gornoye", the need for the development of ecological educational tourism is noted in connection with the active development of the tourism industry, which is accompanied by an increase in the anthropogenic load on the environment.

Keyword:
geoecology, sustainable ecological development, field practices, ecological tourism, recreation

1. Introduction

Responding to global global challenges and sustainable development goals, the State University of Land Use Planning (LUP) is trying to modernize its scientific, educational and economic activities and introduce the best available technologies in the field of rational nature management. The University pursues an environmental policy, which should become a guarantor of sustainable environmentally oriented development of small regions in accordance with the SDG.

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2. Features of the formation of geographical thinking and training of environmental specialists during field training practices at the NUB "Gornoye" in the conditions of a pandemic

Due to the restrictive measures aimed at reducing the incidence of COVID-19, activities related to the environmentally sustainable development of small regions within the field and production practices in 2020 were partially transferred to a online format. Some of the practices have been postponed to 2021, because the study of landscape components and the analysis of the disturbance of the natural environment caused by anthropogenic factors are virtually impossible.

This experience was noted in the work of A. S. Nekrich in the study of the peculiarities of the formation of geographical thinking in the framework of field training practices in the context of a pandemic and allowed us to identify a number of problems and advantages that arise when organizing field and industrial activities of students [2].

In accordance with the curriculum and schedule of educational and industrial practices for the 2021 academic year, on June 18, 2021, the Department of Soil Science, Ecology and Nature Management, despite difficult epidemiological conditions, opened a season of field practices in hydrology, landscape science and ecology at the SEB "Gornoye" in compliance with preventive measures to prevent the spread of COVID-19 among employees and students.

Due to the fact that the SEB "Gornoye" is a unique natural object that performs educational, scientific and applied, research and production functions and is designed to ensure the sustainable development of natural territories, in order to achieve the set goals

in 2020, repair and construction works were carried out on the territory of the SEB "Gornoye", a laboratory complex was equipped, living conditions for students and teachers were improved.

Field practices are an obligatory link of the educational process in the system of higher education of the natural science direction, aimed at expanding and deepening the knowledge of students obtained in the process of theoretical study of the material.

Field practice is logically, in terms of content and methodology, connected with the disciplines "Hydrology", "Landscape Science", "The Doctrine of the hydrosphere", "Ecology", "Mapping of nature management" and completes their study. The organization of educational practice is based on many years of experience in conducting practical classes in relevant disciplines, on information from various literary sources, geological, geomorphological and cartographic data of the territory of the Zaraisk and Lukhovitsky districts of the Moscow region, hydrological yearbooks, published workshops on the organization of field research. Traditionally, practices are held after the end of the lecture course in the relevant disciplines in the summer with a trip to the territory in the vicinity of Zaraisky and Lukhovitsky districts [1,2].

Field research is a unique opportunity to combine theoretical knowledge with practical skills and abilities. Comprehensive geoecological monitoring and geoecological assessment, namely, measures to assess the state of atmospheric air, radiation survey of the work site, measurement of noise and electromagnetic radiation (EMR), ecochemical and microbiological testing of soil from surface horizons and soils from geological wells for the presence of heavy metals and organic pollutants, environmental expertise of drinking water of the local population (wells, springs, wells) within the framework of studies of the quality of surface and groundwater, which will allow us to track not only the change in the quality of the components of geosystems, but also to draw up a picture of the anthropogenic impact as a whole, as well as an agroecological assessment, including an analysis of the state of agroecosystems, the use of agricultural land, an assessment of the greening of land use and the methodology of monitoring systematic regular monitoring for rational use and protection are carried out on the territory of the SEB "Gornoye" of the State University of Land Use Planning in the Zaraysk district of the Moscow Region in the period from 2015 to the present [4,5,8-11].

The difficulties of implementing educational field and industrial practices in the conditions of a pandemic are reflected in the prospects and correctness of the research conducted by students. The ability of students to independently perform work, set tasks, get relevant conclusions and offer effective recommendations in the field of improving the environmental situation of the studied territories does not always become feasible. Of particular importance is the role of the head of the practice, who is able to coordinate the actions of each student in an operational mode, as well as help formulate the goals and objectives of the study and bring it to an understanding of cause-and-effect relationships and the results obtained [3].

This problem has affected most universities around the world, including LUP. For example, in 2020, a "network learning model" was used to conduct training field practices for students of the 1st and 2nd courses, "implying a connection between teachers and students, a connection that is established through communication technologies and

electronic dialogue with the creation of the effect of "full presence", and implies joint research activities of autonomous participants, sharing areas of responsibility among themselves". In the work of Zh. F. Tenkebayeva, Zh. S. Yerzhanova "Organization of field work of students of the specialty "6B05209-Geography" of the L. N. Gumilyov ENU in the conditions of distance learning" describes in detail the experience of using distance educational technologies during quarantine measures in the Republic of Kazakhstan, reflects the algorithm of this system [3].

If earlier the object of research was the natural and territorial complexes of the Zaraysk and Lukhovitsky districts, including the SEB "Gornoye", now these are the geoecological components of the regions where students live. Changes were made to individual tasks reflecting the changed object of research, taking into account the emphasis on their independent implementation by students. All further events, namely: safety instructions (taking into account the epidemiological situation), setting tasks, presenting the practice program, receiving assignments, familiarization with the documentary form of reporting - were held strictly in an online format.

For example, within the framework of conducting a field practice in soil science, it was successfully possible to explain and implement the method of laying a soil pit, to determine the granulometric composition of soils. The direct field work was recorded by photo and video shooting, and the drawing up of the drawing of the soil section was carried out by teams based on data obtained from field research. The results of the practice during the period of restrictive measures can be found on the official website of the Department of Soil Science, Ecology and Nature Management (https://soil-eco.ru/2020/07/10/pocv2020/).

3. Ecological tourism as one of the factors of environmentally sustainable development of small regions

One of the important results of the environmentally sustainable development of small regions is the development of ecological educational tourism within the framework of training field and production practices in 2020. Tourism has a positive impact on the economy of the region and the presence of favorable conditions, natural parks, nature reserves, specially protected natural areas contributes to the development of tourism in Russia and in a particular region. However, the active development of the tourism industry is accompanied by an increase in the anthropogenic load on the environment, because the organization of tourist activities attracts more and more recreational resources, which leads to the transformation of unique natural and historical and cultural landscapes and the loss of their pristine beauty. That is why a detailed study of this area is required to minimize damage to the environment from recreational activities, which is possible only with the correct organization of recreational areas.

Natural resources are the basis for the successful development of the tourist and recreational sphere, which should be carefully studied and evaluated. There are several methods for assessing recreational resources. The most common recreational assessment of the components of nature is based on the degree of favorability of certain parameters in accordance with the developed assessment scale. When studying natural geosystems for ecotourism and recreation, they assess the degree of comfort and identify only those that have the most favorable features for recreation.

I.V. Rozhkov (2020,2021) based on the methods of water balance by L.D. Armand (1975), the assessment of the tourist potential of E.Yu. Kolbovsky (2006) and the calculation of the tourist and recreational potential of M.V. Gudkovskikh (2017), the results of assessing the anthropogenic impact on recreational zones (Shirokova, Shirokov, Khutorova et al., 2018) and the ecological state of water bodies for recreation (Golovatyuk, Shirokova, 2019) in the period 2015-2020 considered the most important geoecological approaches to the study of the tourist and recreational potential of the territory using the example of the Osetr river basin with the subsequent development of a methodology for a comprehensive assessment of the recreational zones of the Osetr river basin, the allocation of recreational areas and the assessment of the recreational load and capacity of the natural-tourist complex and the creation of an interactive schematic map of the recreational potential of the Osetr river basin [4-11].

The author notes that small and medium-sized rivers are most vulnerable to anthropogenic activity, and therefore, strict control over their condition and human activity in river basins that have a high anthropogenic load is required. In accordance with the main provisions of the developed methodology, the recreational suitability of the catchment of the Osetr River was assessed in five blocks according to the criteria of the method of E. Yu. Kolbovsky (2006) and M.V. Gudkovskikh (2017) - natural, cultural, historical, socio-economic, tourist and the block of unfavorable factors: monitoring of historical sights in the Osetr river basin and analysis of the compliance of recreational sites with environmental protection requirements was carried out; the unique climatic features of the Osetr river basin are noted; an inventory of infrastructure facilities was carried out for the implementation of an active lifestyle and medical and recreational activities; possible unfavorable geoecological factors were taken into account [7,8].

The calculation of the integral assessment of the identified recreational zones of the Osetr river basin was carried out on the basis of the methodology for assessing the tourist potential of E. Yu. Kolbovsky (2006). According to this methodology, in the study area, when assessing the tourist and recreational potential, cultural, historical sights, natural resources, attractive landscape unique natural objects (lakes, reservoirs, as well as valleys, sacred springs, springs), active and abandoned hydraulic structures, historical waterways were taken into account., watermills, unique architectural ensembles, etc.; recreational and tourist zones - picturesque banks of river valleys and basin systems, tourist towns, lakes, ponds, bays and other reservoirs; river systems - for kayaking, rafting; forest and wetlands - for the implementation of the traditional form of nature management - gathering; ecological tourism objects - ecological paths [7].

When assessing the recreational potential of the Osetr river basin, in accordance with the proposed methods and a scale for assessing the compliance of the points under consideration for 5 allocated blocks for further comprehensive assessment of the recreational zones of the Osetr river basin, I.V. Rozhkov assessed the recreational load and capacity of the natural-territorial complex and summed up the results for 10 recreational zones: the holy spring "White Well" - 192 points; Venev-Nikolsky monastery - 172 points; Boat station "Elling" - 165 points; dam in the city of Zaraysk - 163.5 points; Guryev quarries - 161.5 points; tourist center "Saturn" - 159 points; spring "12 keys" - 158 points; broad-leaved forest in the bend of the Osetr river - 155.5 points; dam in the urban-type settlement Serebryanye Prudy - 146 points; Livadiyskaya HPP - 145.5 points.

When assessing tourist and recreational activities in the Osetr river basin, the strengths and weaknesses were noted: strengths - natural and climatic factors, historical and

cultural factors, ecological situation; weaknesses - socio-economic characteristics and underdeveloped tourist infrastructure. As a result of the study, the tourist and recreational potential of the Osetr river basin is assessed as "average" and is 1617 points [4,5,10].

Based on the main provisions of the proposed methodology, a comprehensive assessment of the recreational zones of the Osetr river basin gives a general idea ofthe tourist and recreational potential of the studied territories and possible ways of organizing forms of ecotourism in these territories.

4. Summary/ Concluding Remarks

The paper shows the features of the implementation of measures related to the environmentally sustainable development of small regions within the framework of educational field and industrial practices in the conditions of COVID-19, the experience of conducting a comprehensive geoecological assessment of the Osetr river basin in the period 2015-2021, agroecological assessment with subsequent analysis of the state agroecosystems based on the results of systematic regular observations for the rational use and protection of landscapes on the territory of the SEB "Gornoe", the need for the development of ecological educational tourism was noted in connection with the active development of the tourism industry, which is accompanied by an increase in anthropogenic pressure on the environment [1].

It is noted that one of the important results of the environmentally sustainable development of small regions is the development of ecological educational tourism as part of educational field and industrial practices in 2020. Based on the main provisions of the developed methodology presented in the work, a comprehensive assessment of the recreational zones of the Osetr river basin gives a general idea of the tourist and recreational potential of the studied territories and possible ways of organizing forms of ecotourism in these territories. The results of assessing the tourist and recreational potential for the development of ecological tourism on the basis of the methods and approaches proposed in the work for processing and analyzing the data obtained will form the basis for creating a geoecological passport for the catchment area of the Osetr river basin [5,11].

The developments of the Department of Soil Science, Ecology and Nature Management, materials of field observations and research of students and postgraduates, individual stories from published sources will be included in research papers, diplomas, master's theses, articles, textbooks, teaching aids, monographs in the direction of "Ecology and Nature Management" and "Geoecology".

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