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Valley-river landscape-technical systems: Southern Buh ecocorridor

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INTRODUCTION

Due to the considerable anthropogenic load on the river landscape, it is now difficult for geographers to identify areas of streams and floodplains that can still be considered natural. Any modern river has been transformed more or less due to its economic development. Current rivers are cascades of ponds or water reservoirs, between the upper and lower levels of which it is difficult to draw a clear boundary; former natural canals with unique meanders have been transformed into straight channels; coastal shafts have been replaced withs anti-flood dams; the bottoms of canals serve as a foundation for bridge supports, etc. The logical question arises: *can modern rivers be called "rivers"*? In the stream bed of each river, the reach alternates with the crossovers, which are now silted by sediments of ponds and water reservoirs. Each river flows in the waterway produced by the canal, but now it is a linear deepening reinforced with concrete slabs, where there is no deep erosion. In the places of the output of solid rock in the course rapids are formed, which are now either flooded with water reservoirs, or destroyed as a result of the development of canal quarries. In the hydrological regime of most rivers periods of low water, flood, freeze up, drift ice are distinguished, but spring floods practically do not occur now and water thaws hardly flood a flood plain. Each river tries to achieve its basis of erosion, which is now impossible due to the flood control of river flow. As a rule, the river does not flood the floodplain terraces, however, their large areas are under water reservoirs. River systems are separated from each other by watershed divides, however, laying of transport and water supply channels (the Great Chinese Canal, the Dnipro-Buh Canal, the Rhine-Main-Danube Canal, the Moscow Canal, the Volga-Don Canal, the Dnipro-Kryvyi Rih Canal) unites them into complex aggregates, where the environmental problems of one river basin become a threat to another. As a result, the modern river network of Ukraine has long been transformed into anthropogenic network of surface waters, and modern rivers are nothing more than a complex combination of natural river landscapes with river landscape-technical systems (RLTS).

For thousands of years, civilizations appeared, developed and died within river valleys. Activities of people led to the transformation of landscape structure of stream beds and floodplains. However, these

changes should not be compared with anthropogenic impact on river landscapes, which took place in the twentieth century. Historical and geographical analysis of numerous literary materials and our own field studies prove that river landscape-technical systems are the result of global development of water resources of the planet. Modern achievements in science and technology allow man to change the hydrological regime, direction and velocity of the flow, relief of the stream bed, and so on. In order to improve living conditions, humanity destroys that primary beauty given by nature. *How did the transformation process take place? What did it cause? How do natural river landscapes and river landscape-technical systems interact with each other and with adjacent landscapes? What is the forecast of the development of river landscapes for the future? Is it possible to optimize endangered river landscapes?* This monograph is dedicated to these and many other questions.

The decision of the problem of formation and functioning of river landscape-technical systems is based on the principles of the doctrine of F.M. Milkov on anthropogenic landscapes. In addition to this, theoretical and methodological basis of work is the developments and ideas of foreign and national geographers – V. Vyshnevskyi, L. Voropai, M. Hrodzynskyi, V. Hutsuliak, H. Denysyk, K. Diakonov, V. Zaletaieva, I. Kovalchuk, V. Kozina, M. Makkavieiev, O. Marynych, V. Pashchenko, V. Preobrazhenskyi, O. Reteium, V. Samoilenko, Yu. Siletskyi, L. Stefankov, Yu. Tiutiunnyk, V. Fedotov, H. Khaietskyi, R. Chalov, O. Chernov, H. Shvebs, P. Shyshchenko and Yu. Yatsentiuk.

River landscape-technical systems are considered in the structure of valleys of plain rivers, whose basins occupy 95% of the territory of Ukraine. Landscape analysis of the structure and functioning of river landscape systems was carried out by means of deduction – from general to concrete. Explaining theoretical and methodological issues and characterizing the historical and geographical progress of the transformation of river landscapes of the world and Ukraine in particular, the author detailed the review of the structure of the RLTS on an example of a typical plain river and suggested possible ways of optimizing them.

Study of river landscape-technical systems was performed at the touch of several sciences: anthropogenic landscape studies, hydrology and hydrotechnics. This complicated the work to a certain extent, because it

required the author to work simultaneously at three levels of knowledge: landscape science, geography and geotechnics. Therefore, the vast majority of issues covered in this work are new, problematic and can cause a scientific discussion, since there is hardly similar research in modern geographic and landscape science literature.

The monograph explored river landscapes and river landscape-technical systems, carried out the classification of river landscape-technical systems and carried out a historical-geographic and etymological analysis of the formation of river landscape-technical systems of the Southern Buh eco corridor (Sovhira S.), characterized natural river landscapes as a paleolandscape basis of the formation of modern river landscape-technical systems, cleared up approaches, principles and methods of the research of river landscape and technical systems that underlie the formation of river landscape-technical systems of Ukraine, analysis of landscape structure of stream beds and natural landscapes of floodplains, highlighted regional structures of river landscape-technical systems of Southern-Buh eco corridor, analyzed the structure and features of the formation of river landscape engineering systems and actual river anthropogenic landscapes (Lavryk O.), revealed interrelations in river landscapes and river landscape-technical systems through paragenetic bonds in river systems, interactions between between river landscape-technical systems and adjacent landscapes and aquatic-coastal geoecoton in river landscapes and river landscape-technical systems, forecast development of directions of the optimization of river landscape-technical systems, made anthropogenic-landscape forecast and emergence of river landscape-technical systems, regional analysis of the current state of protected areas within river landsacapes, showed a unified system of protected objects as the main direction of optimization of river landscapes (Tsymbaliuk V.).

The main attention of the authors is directed to the landscape-technical systems, which are concentrated within canal and flood types of areas. Without a complex analysis of the structure and interaction of all the landscapes of the river valleys the study would be incomplete.

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