BIOLOGICAL SCIENCES

NON-TIDAL MARSHES' DIFFERENTIATION OF SMALL AND MEDIUM STEPPE RIVERS IN DIFFERENT LEVELS OF FLOODING

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Modern marsh phytocomplexes of small and medium rivers in the Black Sea steppe zone are intrazonal relict-type structures, which, in contrast to the transformed primary-steppe and semi-desert coastal phytocomplexes, have preserved the primary species core. At the same time, their floodplain ecocomplexes fell into a critical state in the conditions of growing aridity of the region at the end of the last century, and currently they are local, biotically depleted areas of alluvial plains [4].

The marshes of small and medium rivers of the Black Sea coast are non-tidal marshes located along the banks of rivers and lakes that are not affected by the sea tides. They are quite dynamic structures, which according to the season have different aspects and corresponding phytodiversity. Thus, during a period of significant flooding, all marsh biotopes are filled with water and quickly restore the typical marsh vegetation of a wetland and amphiphyte type. These areas in periods of stable high level of flowage correspond to the features of typical floodplains with thickets of reeds, bulrushes, cattails and other helophytes [2; 3; 8].

In the low-water period, non-tidal marshes are differentiated into riverine, palustrine and meadow (Figure 1). Riverine marshes are represented by habitats of permanent flowage and are inhabited by aquatic vegetation on the basis of hornwort, duckweed, pondweed, frogbit, and water lily cenoses. Palustrine marshes are represented by habitats of partial flowage and excess humidification with thickets of high-grass helophytes, which on the island hills are combined with various wetland grasses. In these habitats, multi-species highly productive phytocenoses of the «classic» marsh type with the dominance of reeds, cattails, bulrushes, and bulbrushes function. The areas of sufficient humidification are represented by marsh and wet meadows with the predominance of grasses and sedges. These phytocenoses are formed by species of wide ecological amplitude, which are able to exist both in

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conditions of excess humidification (flood period, high water) and periodic drying of the edaphotope (low water in the middle of summer). Accordingly, the grasslands of habitats with insufficient humidification are formed by steppe-meadow species on the basis of low-growing mesoxerophytic grasses with a significant proportion of weeds (up to 50%). Therefore, the non-tidal marshes of small and medium steppe rivers have different aspects according to the season due to the seasonally variable vegetation cover.

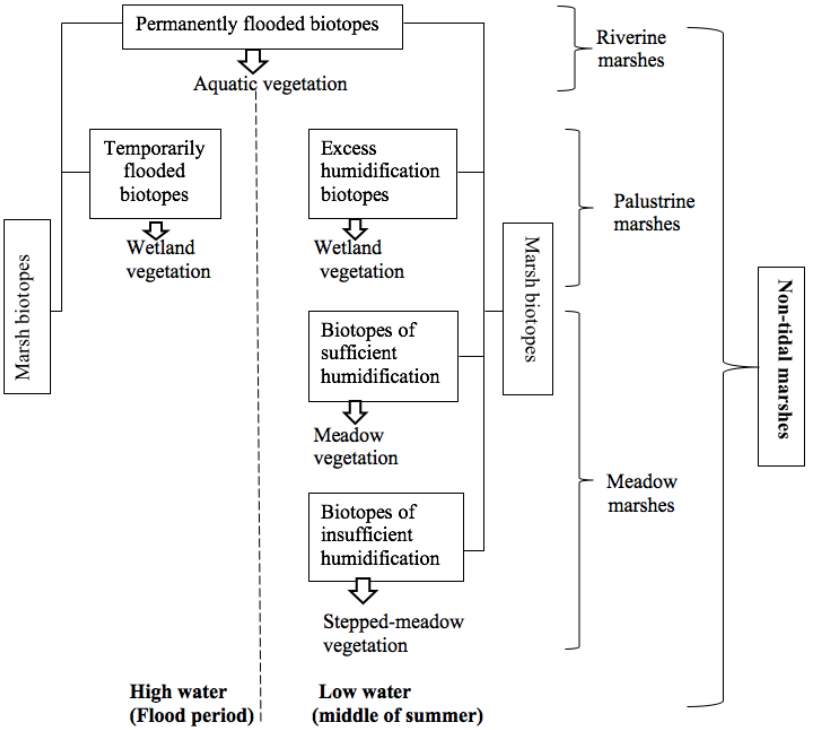

Figure 1. Non-tidal marshes' differentiation of small and medium steppe rivers in different levels of flooding

A detailed analysis of these phenomena clearly indicates the main limiting factor of their condition – the hydrological regime of the floodplain. Thus, the higher aquatic plant species richness of small and medium rivers' marsh habitats of permanent flowage on the Northern Black Sea coast is clearly limited (3-8% of the total number of plant species), which is associated with

sharp and long-term decrease in water levels and consistently high level of anthropogenic influence. On this background, only the floodplain of the large rivers (the Dnieper, the Southern Buh, the Dniester, the Danube) is characterized by a more or less stable hydrological regime, which provides support for a high degree of floodplain phytodiversity and its specificity.

Similar results have been achieved by cartographic and recent investigations of floodplains of small rivers of the Northern Black Sea coast for the last 100 years [1; 4; 5–7; 9]. Evaluation of these data reveals the increase in the area of biotopes of sufficient humidification (by 30-40%) covered with eurybiont marsh and meadow phytocenoses due to the reduction of permanently and temporarily flooded biotopes with the corresponding water and wetland plant communities. In addition, as a result of long-term drying of floodplains in the conditions of aridization in the region and excessive anthropopression in the river valleys, they are being transformed into steppes, and the appearance of new atypical for floodplains cenoses – steppe-meadows with a significant proportion of ruderals – is detected.

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THE B-LG GENE POLYMORPHISM LEVEL OF ASCANIAN KARAKUL AND ASCANIAN FINE-FLEECED SHEEP BREEDS

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A comprehensive study of the farm animals' genome has been and remains the subject of numerous studies. These studies are aimed at identifying the features of the genetic structure, studying the genes expression, which, in turn, play a key role in the formation or regulation the biochemical and physiological processes, and then directly affect to the manifestation of economically useful traits in animals. The beta-lactoglobulin gene is considered as a marker of sheep productivity and is one of the promising candidate genes. The β-LG locus is the most researched of all the specific genes that can influence various sheep economic characteristics. This gene has an increased polymorphism for most sheep breeds [1, p. 45; 2, p. 479–480; 3, p. 8]. Many studies of various sheep breeds indicate that the β-LG gene is promising in terms of influencing the quantity and quality of milk [1, p. 46; 4, p. 256; 5, p. 383; 6, p. 5124].

At the same time, this gene polymorphism in sheep of the Ascanian selection has not been studied before. To establish the peculiarities of the β-LG gene genetic structure in the Ascanian Fine-Fleeced breed of Tavrian Type and the Ascanian Prolific Karakul Breed Type sheep was the main aim of our scientific work.

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