

**LIFE Project Number
LIFE05 NAT/LT/000094**

2nd Progress Report

Annex 9

**Action C1. Independent engineer opinion for
dam construction.....1 page**

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Opinion about improvement of water table in the habitat of Emys orbicularis
Piska Forest

According to the initial concept of a small retainer aimed at the improvement of water table in the habitat of *Emys orbicularis* the erection of 3000 meters of banking up devices (thresholds streams, oak-valves and dams) was planned. Already at the time of construction it was apparent that the topography of a terrain (height differences and the quality of the soil) requires that changes were made in the original planning. It has to be stressed that the area of Piska Forest is specific because of a large scale water retention work that was done at the beginning XX century. There is no technical documentation available for this system of pipes and network of ditches draining water from the area therefore the reconstruction of the system was impossible to achieve. In time of construction it was agreed that in many places installation of banking up valves in place of restoring of ditches and drain pipes would be a better option. Because of that a large scale analysis of retention potential was completed and the project was thoroughly redesigned.

On a given area the designers of a complex program for small retention took under consideration the manner and direction of a water flow, creation of areas of potential flooding and level of the ground water. The goal was to obtain the maximum hydration of the area and to maximize connection of all structures to facilitate undisturbed flow of a water table. In many cases construction of threshold banking up by itself would not help with the accumulation and maintenance of the water at the desired level because draining ditches would still collect water from adjacent grounds. The function of ditches and banking up is not comparable. Banking up halts water at certain level and in chosen places it might create congregation of open water. The back filling of ditches is supposed to increase subterranean water retention and facilitate its even redistribution as well as to aid to the function of the dam.

The analysis showed that by completion of 315 meters of dams, 569 meters of stream thresholds and oak-valves and by back filling up of 4245 meters of ditches we would achieve the same optimum retention goals at the same costs as with construction of 3000 meters of banking up of the drainage systems according to the original plan.


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