RIVER "MODLA" REVITALIZATION (REGENERATION)

BACKGROUND

The purpose of the Water Framework Directive (WFD) is " to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems" [1]. River revitalization (regeneration) is very important due to the aims of WFD. Improvement of the environment has a basic role in basin revitalization. In the Litomerice region (north of Prague) revitalization of the River „Modla" began in the year 1996. In the past this stream straightened to form a canal. The new river bed has a natural character with many trees and bushes on the bank.

Fig 1 Modla River canalized channel

BASIC DATA OF MODLA RIVER

- Length of revitalized part: 1436 m
- Old channel lining stayed there as second river bed
- The new revitalized (natural) river bed was constructed on the original river bed position (before amelioration changes).
- 7674 trees and bushes were planted in the wire netting (willow, alder, birch, red ash, poplar tree, Norway maple, hornbeam, sycamore, lime tree, forest oak, canary-grass, dogwood, chokecherry, honeysuckle, spindle-wood, viburnum, Cornelian cherry)
- 14 diversion wooden weirs were constructed (height 0,4 m; width of river bed 2 m; depth of river bed 1m)
- Manager of the project: Agricultural Water Management Authority, region River Ohre Basin, Usti nad Labem
- Project funded by CIFA – Ing. Jaroslav Zuna
- Contractor: Narcis Novosedlice company, a. s.
- Total costs were paid mainly by Czech state from the Program of River systems Revitalization (Ministry of Environment).

SOLUTIONS

- Amelioration arrangements were realized in the past.
- The River Modla was straightened with a deep prismatic channel to form a canal (Fig 1). This was to permit the construction of areal (alluvial plain) drainage system.
- The arrangements were not optimal.
- The new river bed is shallow and meanders over a longer distance (Fig. 2, 3).
- Groundwater level is increased and helps wetland development.

Fig 2, 3 Modla River revitalization

BENEFITS

- Slower surface water runoffs.
- Small runoff capacity of the new river bed enables flow of floods to the flood plain.
- Small pools make important biotope for plants and animals.
- Trees and bushes stabilize the area.
- Water reservoir retains water in the locality.
- Water reservoir helps during flooding.
- Water reservoir makes biotopes (shallow water, banks).

REFERENCES

[1] WATER FRAMEWORK DIRECTIVE 2000/60/EC

[2] Data and project information of Agricultural Water Managemnet Authority, region River Ohre Basin, Usti nad Labem

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