8 Restoration measures in the Porec catchment

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Introduction

The Porec creek is a small water course in the central part of the Borská Lowland, Western Slovakia.

It originates near Na lúčkach – a locality at an altitude of 186.6 m a.s.l. From this source area, the creek drops 36.6 m over 9.2 km, before it reaches the Morava River. The catchment area of the Porec stream is relatively large (ca 40 km²; Kováč & Valachovič 2003). In its lower course, the Porec flows through the Abrod reserve. The regulation of its stream bed in the 1960s has had negative impacts on the hydrology of this reserve. The extensive drainage activities in the whole catchment of the Porec have also added to the hydrological problems in Abrod.

In this chapter, we will discuss the changes in land use and water management that have occurred in the catchment, and then analyse possible restoration measures which can be taken to reduce the negative effects of hydrological changes carried out in the past. Following several years of studying and consultations with the stakeholders, some restoration measures have recently been implemented.

Description of study area

Geological setting

Wind blown (eolic) deposits are most common in the catchment, particularly in the upper and middle reaches of the catchment. These sediments consist of fine-grained non-calcareous sands. Fluvial deposits, originating from the Morava River, are more common in the lower reaches, and consist of medium and coarse-grained sands and gravels (Polesňák 2003). The Porec Creek itself has created its own floodplain with fine-grained, rather clayey sand deposits originating from the upper parts of its catchment.

Changes in water management

Most of the Porec has now been regulated, which means that the stream has been shortened considerably. Prior to its regulation, the original stream bed was shallow with a depth ranging from 0.4 to 0.6 m. In some places, the stream channel disappeared completely and water flowed over the surface; this contributed to the formation of adjacent wetlands (Kováč & Valachovič 2003).

The regulation of the Porec stream and drainage activities in its catchment area
**Calcareous mires of Slovakia; landscape setting, management and restoration prospects**

**Figure 1:** Location of the Porec catchment area and the main water courses feeding the Porec Creek. Digital ortophoto 2009 © EUROSENSE s.r.o., www.eurosense.sk. Site photo by Dušan Valachovič.