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Title of Abstract
Hydrological and hydro-geological elements for protection of drinking water sources of the Ljublja
area

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Text of Abstract

The Ljubljana Moor extends from the southern part of Ljubljana city to Krim-Mokrc mountains. It's area, where the mosaic of meadows, fields, ditches and cops of alders spread out on 160 km2. In two Centuries extensive irrigation and river regulation projects were implemented to develop agricultu Biodiversity of the area is high due to large zones of wet meadows, some flood forest patches, bog ar open water courses habitats. The Ljubljana Moor is therefore protected as Natura 2000 site.

The sedimentation basin of Ljubljana Moor is filled up in the central part with lacustrine and marshy se and on the borders of the basin are the gravel fans. In the basin there are layers, different thicknesses gravel, clay, sand, silt, lacustrine chalk, peat and humus. The sediments reach up to 150 m and repre of the biggest in very important aquifer in Slovenia. In 1975 the water field Brest was projected. In phase eleven wells with common efficacious of 150 l/s were drilled and catch the groundwater from un Holocene gravel aquifer. In the second phase two deep wells, up to 100 m, were drilled and they c groundwater from confine upper and lower Pleistocene gravel aquifer. In the third phase the deep w drilled that catch the groundwater only from the confine lower Pleistocene aquifer.

The water field Brest has been designed as important future drinking water source for Ljubljana City never been intensively exploited. But nowadays villages on the Ljubljana Moor and along the botton mountain area are being intensively urbanised and the number of inhabitants increased a lot. As a conse the drinking water pumping station Brest and the Ljubljana Moor aquifer are under high pressure. Both vulnerable due to intensive use of land and water.

It has been shown that the water recharge of Ljubljana Moor aquifer does not refill pumped water and t is recognisable subsidance of the whole area of aquifer. The highest subsidances are noticed in the cer eastern part of the aquifer. Those two phenomena pose high risk to stable drinking water supply and habitats that are protected as Nutura 2000 sites.

There has just been a drinking water protection legal act fot the Ljubljana Moor prepared and will be a by authorities in 2008. Public environment protection services are developing another legal act, that i tect the area as a landscape park (to protect natural and cultural heritage of the Ljubljana Moor. Both l are in conflict with existing agricultural practices, land development plans and further urbanisation p (including new and larger roads, flood areas disconnections and destruction). No attention is given ye grated water management and there is hardly any consideration of long term hydrological and hydroge processes.

We present the most important elements of existing plans and legal acts from water resources man perspective. Water management community should develop proposals for acceptable water managemen that do not neglect the fact of a negative aquifer water recharging, subsidance of the area and ecological Natura 2000 wet habitats. At the same time these options should take into consideration sectoral deve plans. Since local authorities, public and civil organisations will play very important rule in decision processes, knowledge of land-water interactions and hydro(geo)logical problems should be dissemi a most simple way. There are hardly any human and financial resources available for that purpose management scientific community.