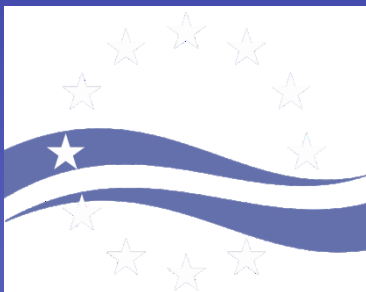


The Upper and Middle Elbe River Basin District Plan

Review of Significant Water Management Issues in The Upper and Middle Elbe River Basin District

...relevant to groundwater

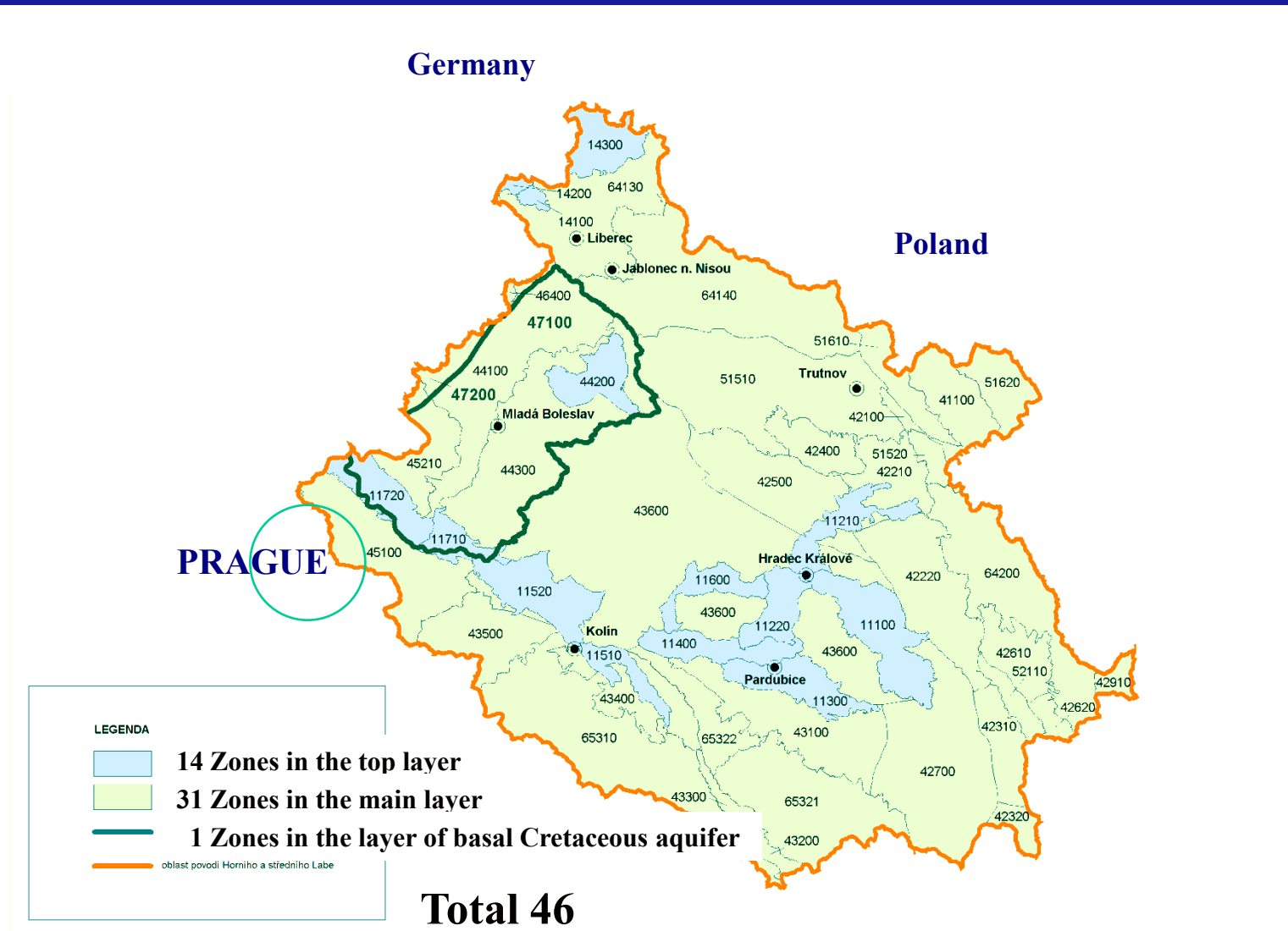


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Povodí Labe, státní podnik

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[illegible]

Bodies of Groundwater at The Upper and Middle Elbe River Basin District



What are the Water Management Issues? (definition)

Problem => Reason => Precaution
(Riskiness) (Impact on GWB) (Program of Measures)

„Water management issues“ (WM) means...

WM issue is such a problem its solution ensures achieving good water condition and not its deterioration, achieving protection aims against unfavoured extreme water effects (flood and drought) and aims relating with ensuring water-economy services specified by the Water Act. List of WM issues determines the way of water-resources management in future and introduces basics for program compilation of plan precaution of basin area. Compilation of preliminary synopsis of WM issues and its presentation to the public suggestions was done on the basics of the Water Act.

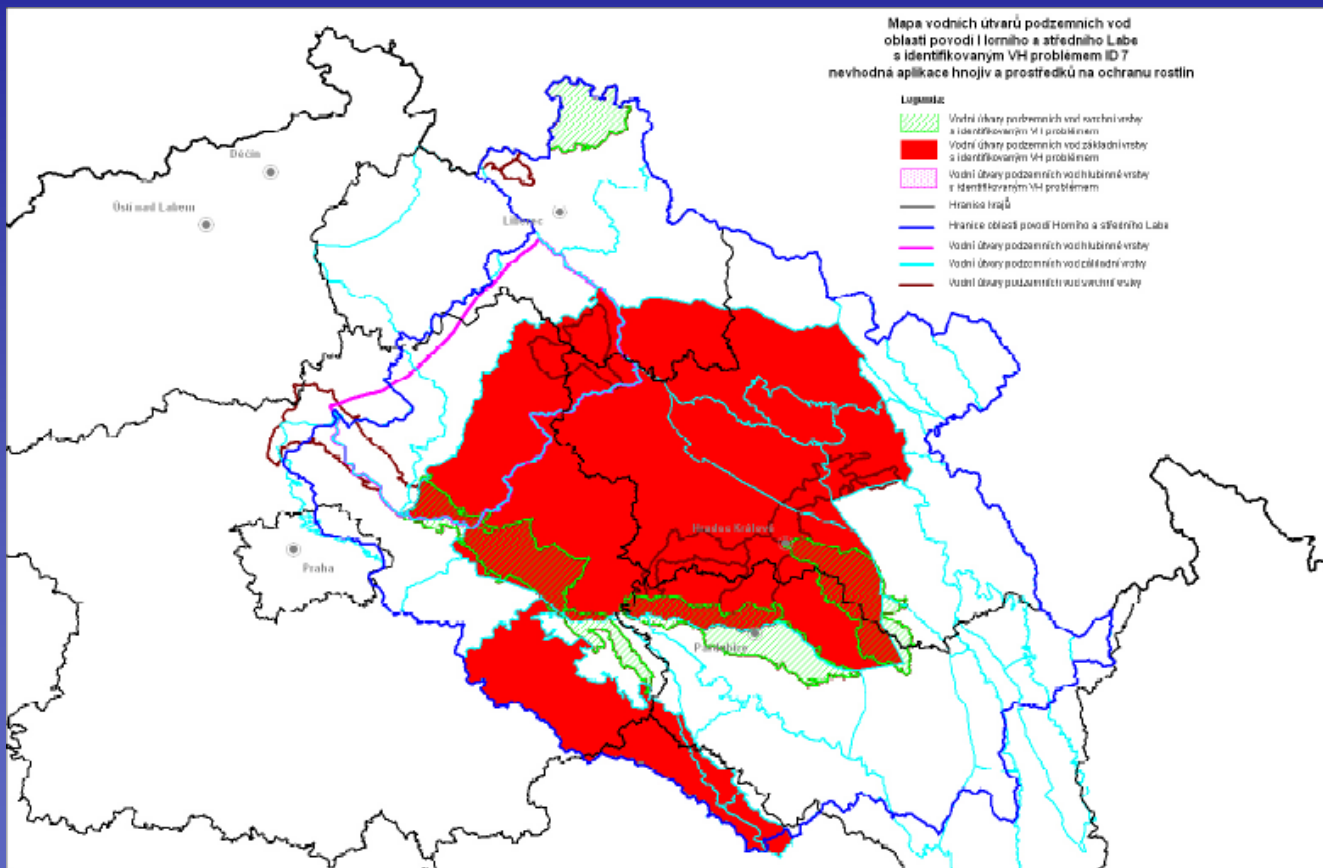
Categories of Significant Water Management Issues

- Protection of water quality
- Protection of water as a component of the environment
- Flood prevention
- Safeguarding water management services
- Water economics
- Target applied research and support of water management education

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Unsuitable application of fertilizers and pesticides

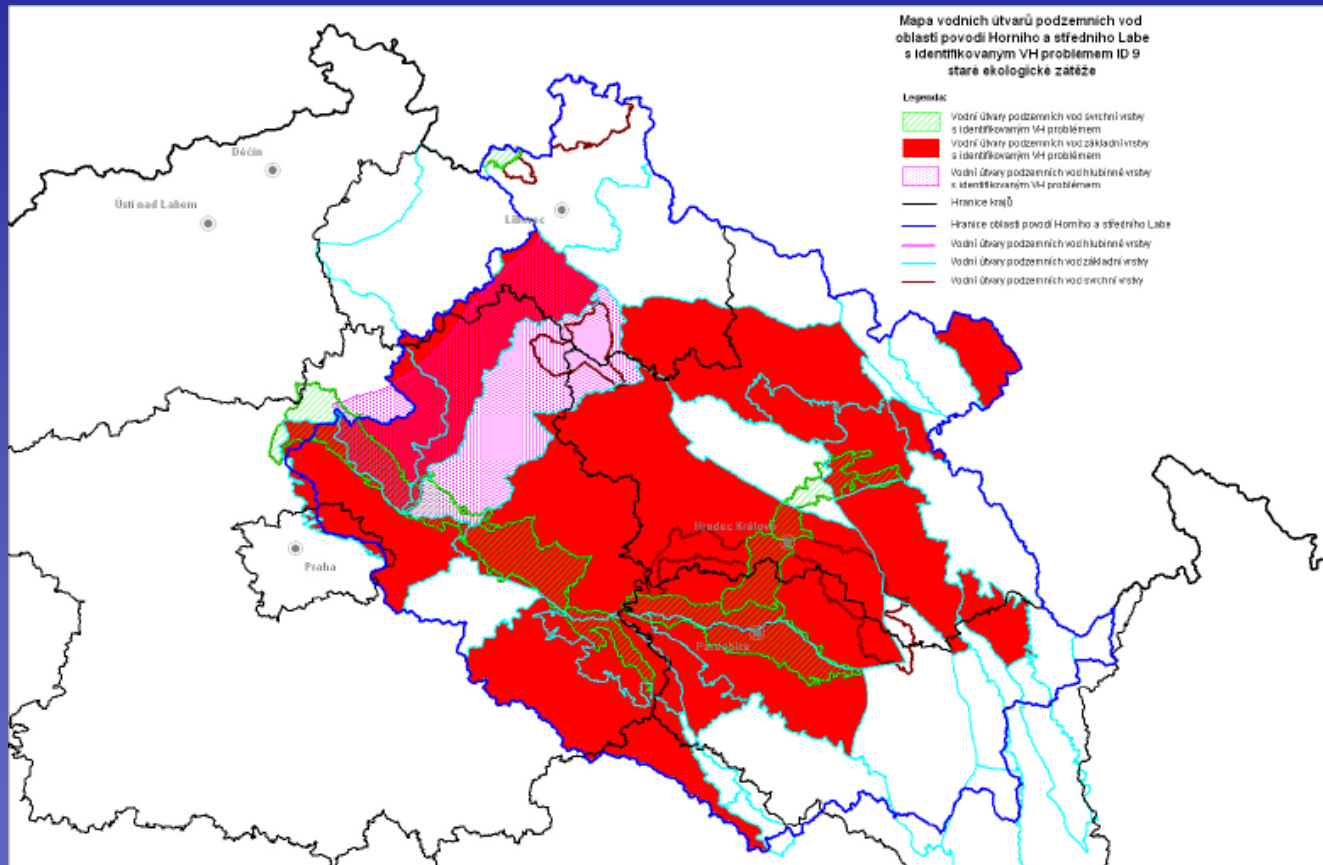


35% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Contaminated sites - old environmental damages

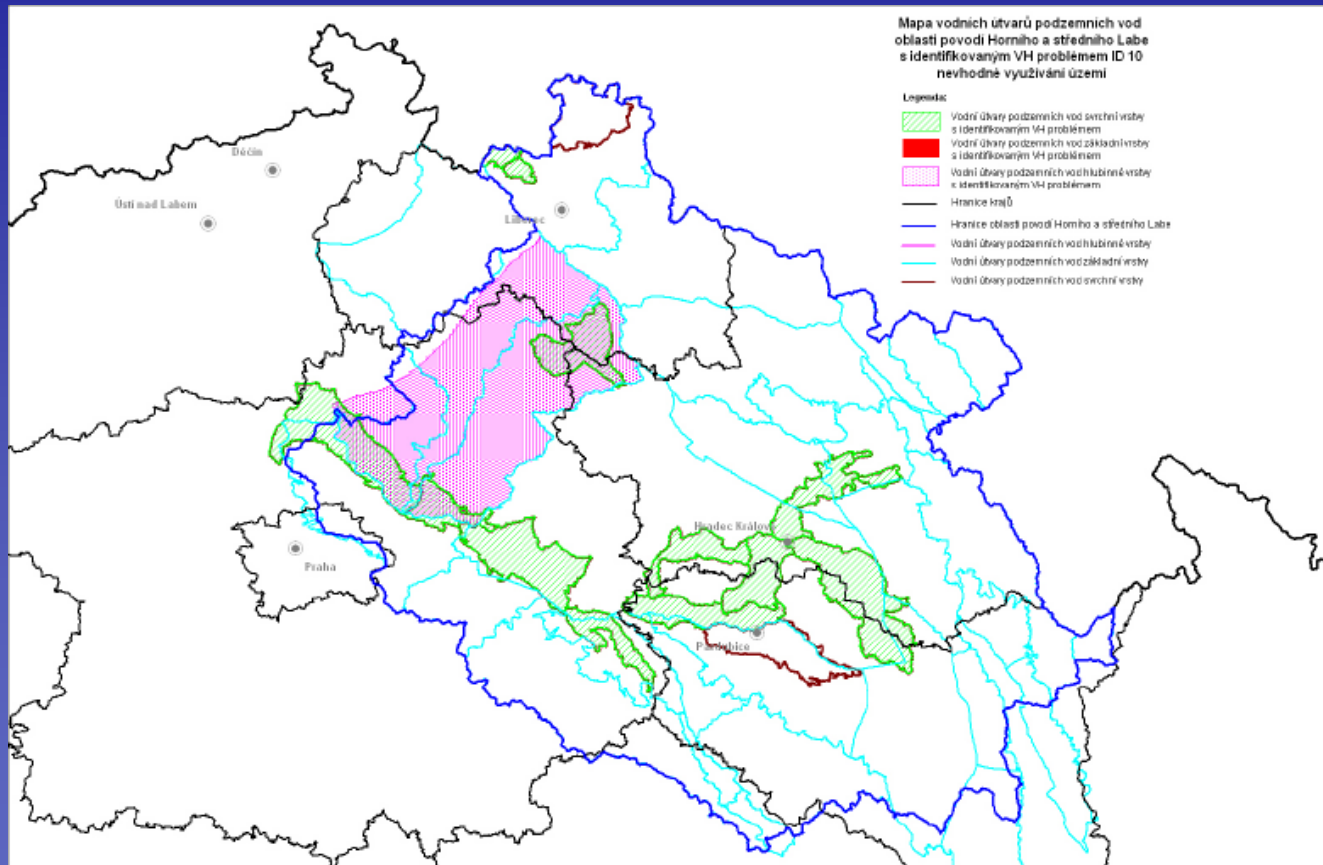


54% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Unsuitable land use

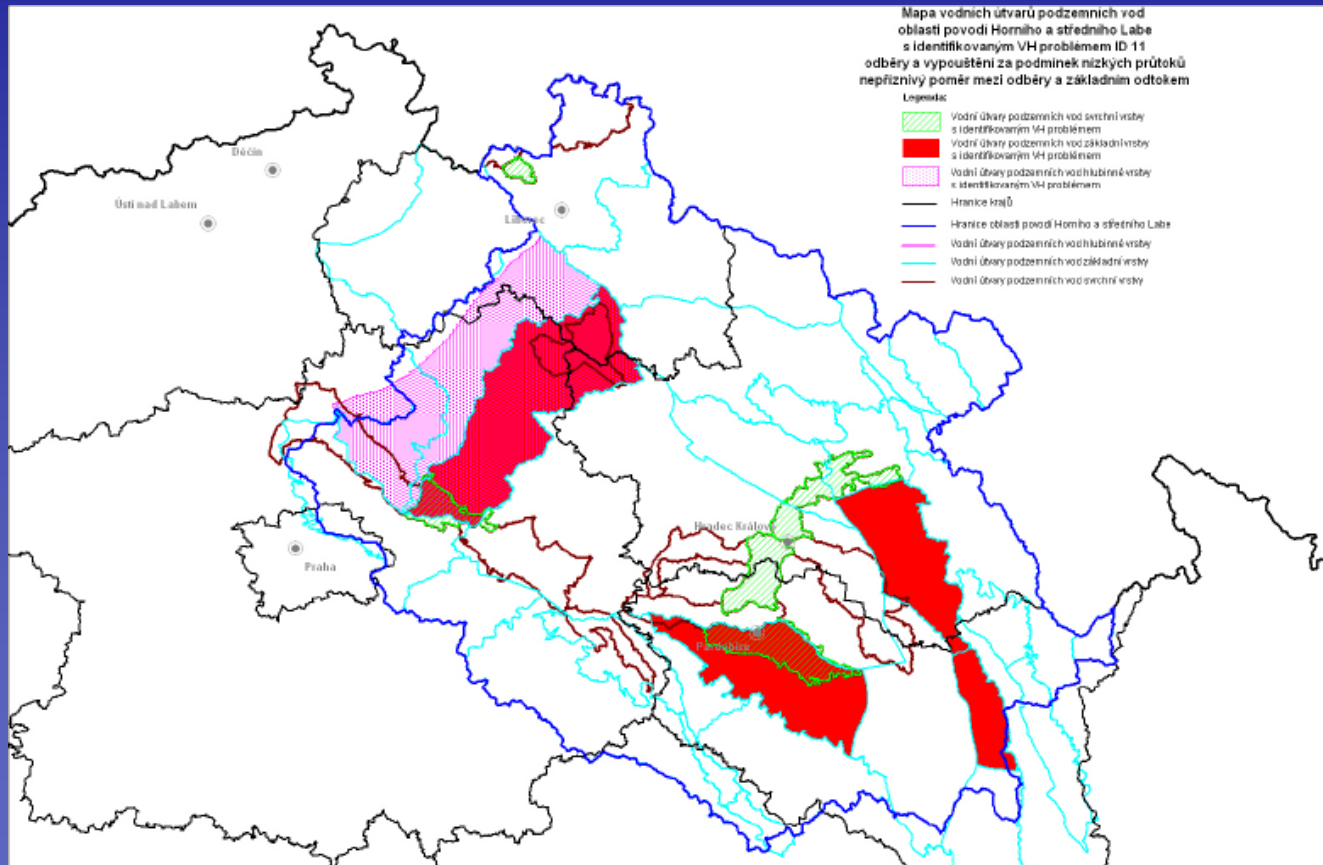


28% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Adverse ratio between groundwater abstraction and resources

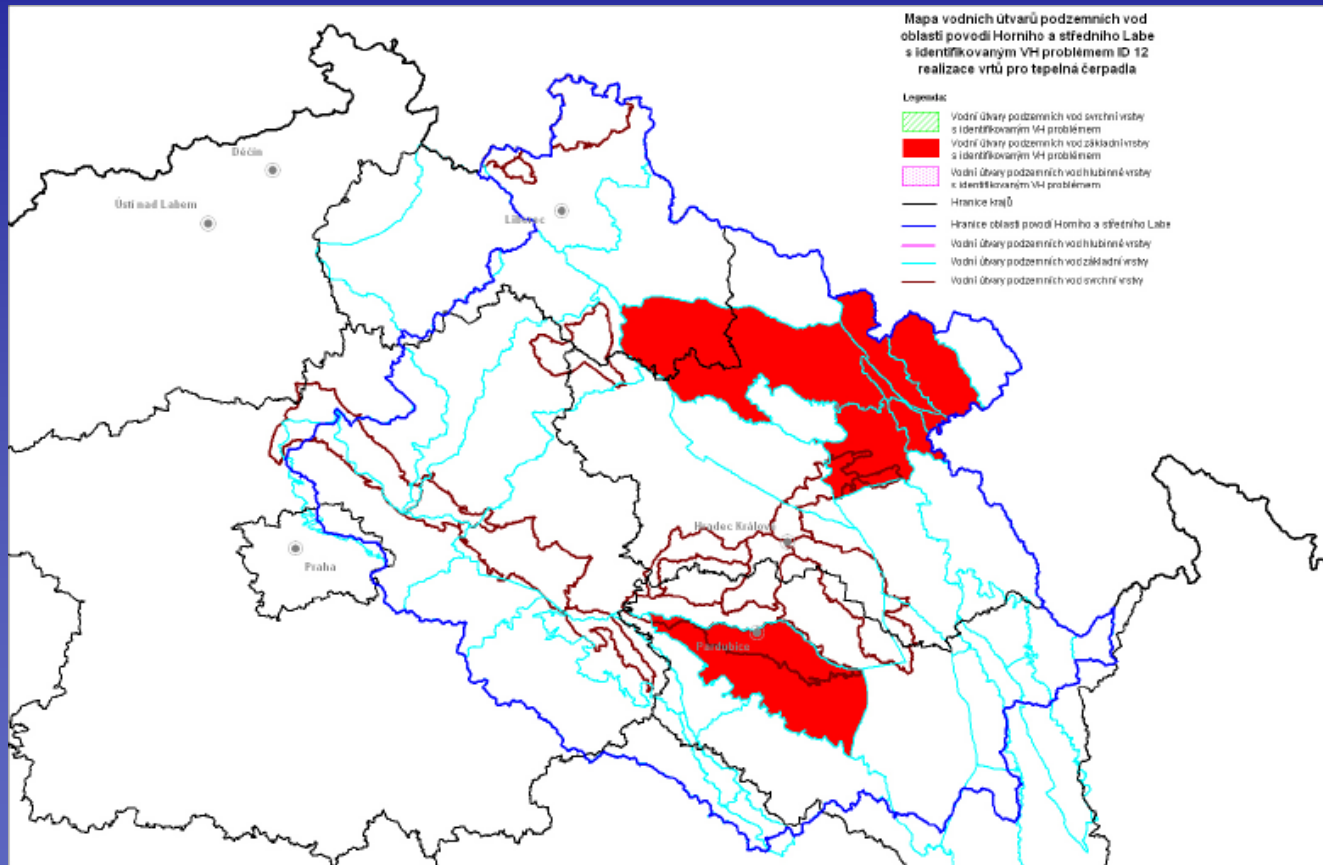


22% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Bore holes for heat pumps

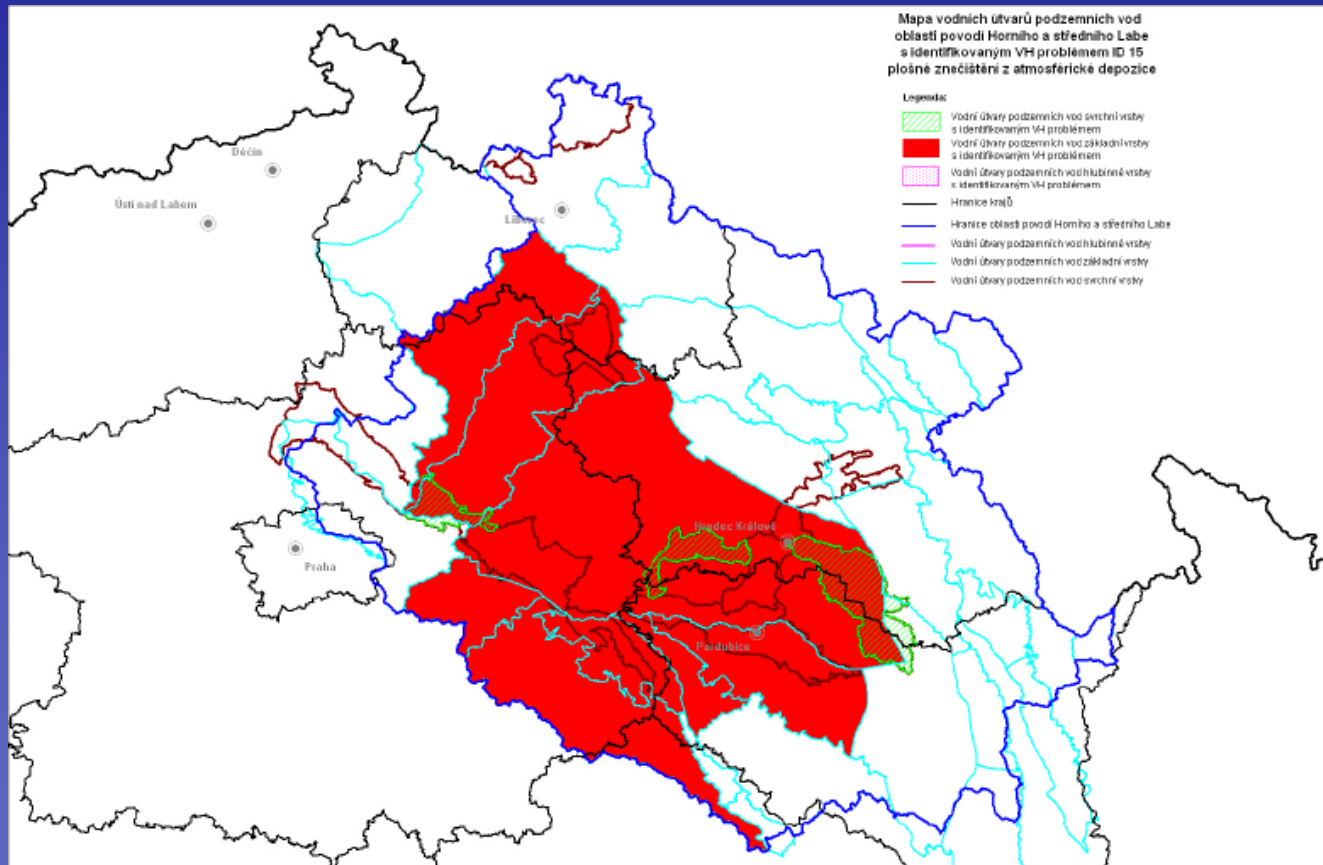


15% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Diffuse pollution originating from atmospheric deposition

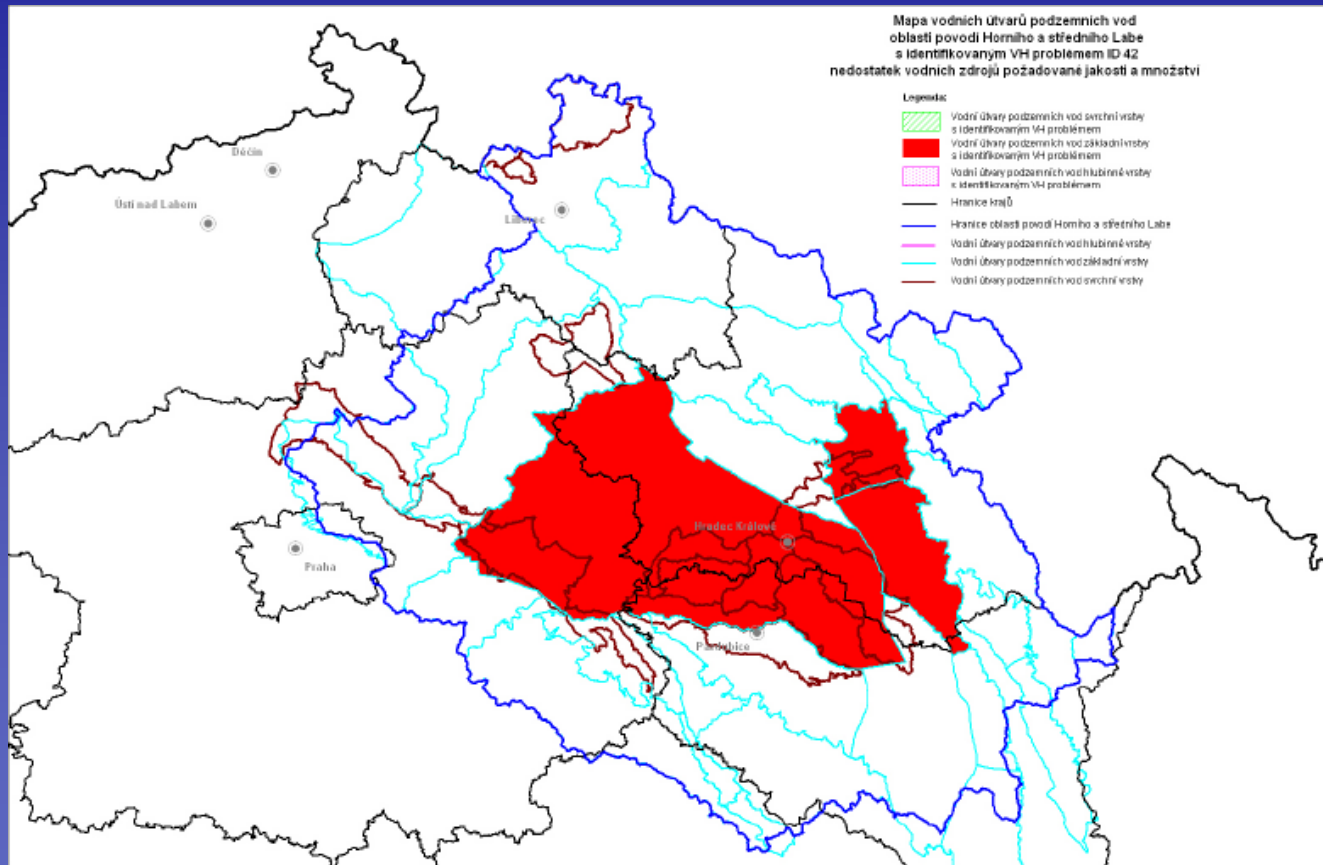


24% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Shortage of water resources in demanded quality and quantity

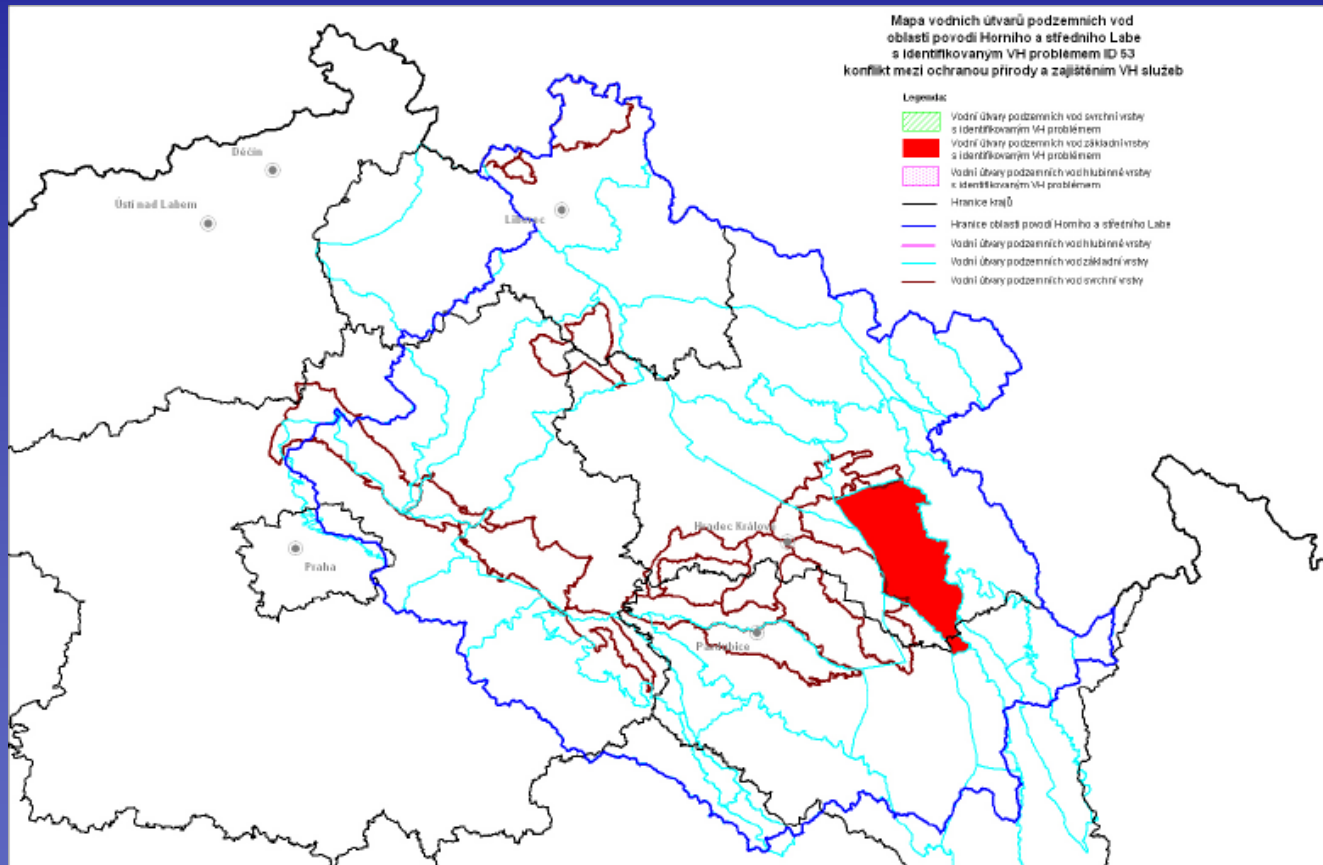


35% bodies of groundwater identified

Significant water management issues – groundwater

The Upper and Middle Elbe River Basin District

Conflict between nature protection and safeguard a water services

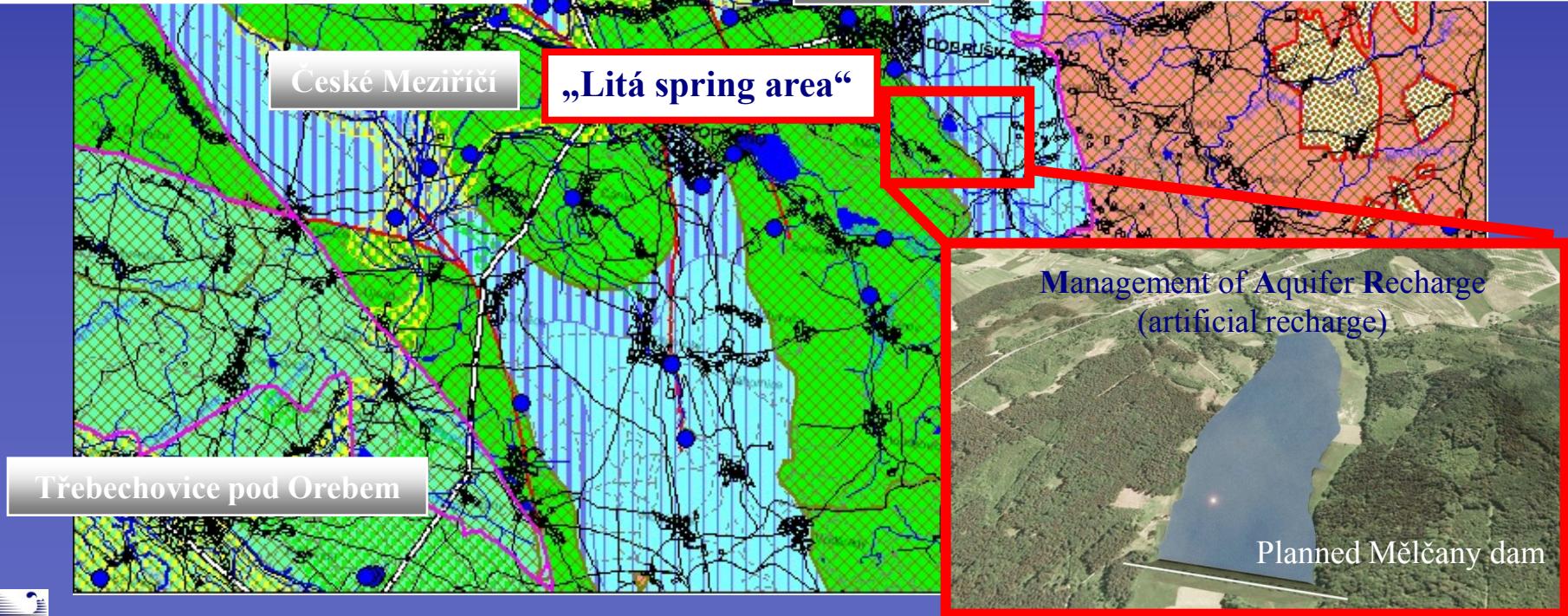


1 body of groundwater identified (ID 42220)

Program of Measures

- **are the main devices to achieve the aims** (26 Water Act) given by **The Plan of Main River Basins of the Czech Republic** and **The River Basin District Plans**.
- **set time schedule** of their realisation
- **strategy of their financing**

Conflict between nature protection and safeguard a water services (argument: environmentalists vs. water-supply engineering)



42220 Podorlická cretaceous at Orlice River basin area

Program of Measures (issue: nature protection vs. safeguard...)

Proposal of measures

Groundwater controlled grant was introduced for finding the consensus and also to solve the tense water balance between abstraction of groundwater and nature water resources (source of groundwater). This precaution should help to increase the available sources of groundwater, the state will not be risky and water-bearing of alkaline wetland in Zbytka nature reserve will increase.

Time harmonogram (timetable)

I. phase – hydrogeologic survey, setting-up and testing of pilot facility could be realized in four years.

II. phase – finishing the building and establishing the facility in full power could be realizes in two years.

Spending on realization

First phase expenditures are c. 5 mil. Kč (about 200 000 EURO)

Passive attitude

Decreasing the limits of groundwater taking-off, using the institute of minimum level of groundwater.

Active attitude

Increasing the size of groundwater sources through controlled dotation of groundwater (MAR - Management of Aquifer Recharge, artificial recharge)

Bore holes for heat pump

Technology and systems of heat pump (geothermal energy, abstraction of heat)

- air - air



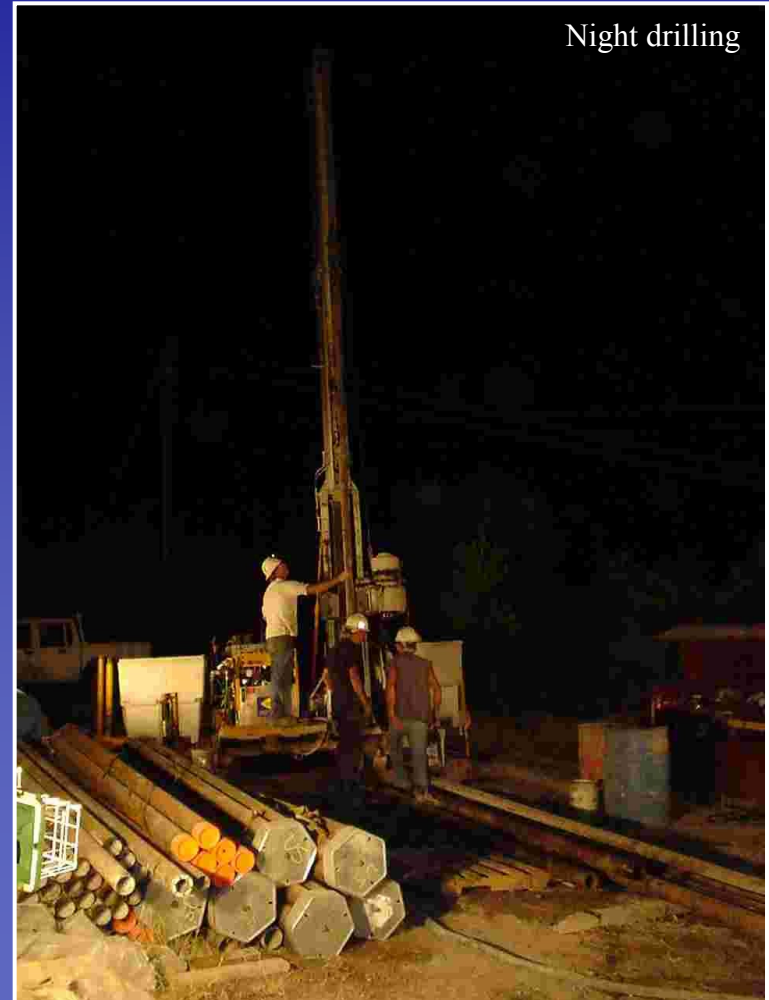
- land - land



- land - water



- water - water



Program of Measures (issue: bore hole for heat pump)

Proposal of measures (only legislative frame)

Tightening of all bore excavation conditions in chalk basin structures where any bore is in fact a piece of water-resources work which always opens and fills the groundwater tank

Time harmonogram (timetable)

Could be done immediately

Spending on realization

Without expenditures

Conclusion:

Significant water management issues relevant to bodies of groundwater in The Upper and Middle Elbe River Basin District are:

Contaminated sites - old environmental damages

Unsuitable application of fertilizers and pesticides

Diffuse pollution originating from atmospheric deposition

Shortage of water resources in demanded quality and quantity

Thank you for your attention...



The best-known well in CZ

Source of Elbe River in Krkonoše Mountains