

### 3.1 Description of investigated localities

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We investigated biological soil crusts at four ore and ash sedimentation basin localities in Czech Republic (see Colour plates, Figs. 3.1.1, 3.1.2):

- 1) *Měděnec* ore sedimentation basin (50°26'9.657"N, 13°5'59.46"E, altitude 805 m a.s.l., Figs. 3.1.1 a–c) is situated close to the former lodestone mine that was erected in 1967. In 1997 this mine was closed and since then, the sedimentation basin with 12 ha area was abandoned and nowadays it consists of large exposed areas without significant vascular plant cover. The sampling site experiences repeated periods of water saturation and overflow related to snow melting in sub-mountainous altitude.
- 2) *Radvanice* ore sedimentation basin (49°48'56.232"N, 18°22'51.736"E, altitude 280 m a.s.l., Figs. 3.1.1 d–f) was abandoned in the 1970's after the local copper-ore mine closed. In past the 30 years, reforestation by *Pinus sylvestris* was several times unsuccessfully attempted. The area now includes about 4 ha of exposed tree-less habitat with biological soil crust covering most of the surface.
- 3) *Dvůr Králové I* ash sedimentation basin (50°25'7.242"N, 15°48'52.404"E, altitude 288 m a.s.l., Figs. 3.1.2 a–c) represent the active locality close to the brown coal heating plant. The abandoned parts of the locality include about 2 ha of exposed tree-less areas with the biological soil crust cover. For our investigation, we chose a site on the margin of the locality that was not recently flooded by waste-water from a heating plant. However, short-term overflows related to elevation of water level in periods with high precipitation cannot be excluded.
- 4) *Ostrov II* ash sedimentation basin (50°17'43.116"N, 12°56'58.985"E; altitude 400 m a.s.l., Figs. 3.1.2 d–f) was founded in 1987 and it represents a highly active ash sedimentation basin of a brown coal heating plant. The ash wastewater regularly overflows most parts of the 7.5 ha basin area. However, the marginal parts of this locality are now largely un-flooded and they consist of exposed surfaces without any vascular plants.