Restoration prioritisation and opportunities in the Czech Republic

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Ecosystem management

Ecosystem management

- Outline of the presentation:

- Landscape development in what is now the Czech Republic
- Post-mining area restoration
- Former military training area restoration
- Water ecosystem restoration
- Forest ecosystem restoration
- Ecosystem restoration and climate change

Ecosystem management

- The Czech Republic covers 78,867 km^2
- The population is 10.5 million inhabitants (2014)
- EU Member State since 2014

Ecosystem management

- ✓1838 first protected area had been declared by a private owner
- ✓By the 1950s, a mosaic of extensively used farmland and forest habitats was developed

Ecosystem management

- In the 1950s, shift to farmer cooperatives (kolkhozs): large block of arable land
- Heavy industry had been developed

Ecosystem management

- In the 1970s, intensive mass agricultural production
- High level of contamination by pollutants (*e.g.*, the Black Triangle)

Ecosystem management

- A mere 17% of the Czech Republic´s territory is covered with natural or near-natural habitats

- Miko & Hošek (eds.): State of nature and the landscape in the Czech Republic (2009)

Ecosystem management

Ecosystem restoration aims at

- Post-mining and post-industrial sites
- Forests
- Wetlands incl. water streams
- Grasslands
- Abandoned military areas

Ecosystem management

Opinions:

- Technical reclamation
- Natural succession
- Combination of both the approaches

Ecosystem management

Post-mining areas

- Extensive open-cast brown coal mining spoil heaps in Northern Bohemia
- Black coal mining spoil heaps in Northern Moravia
- Uranium mining

Ecosystem management

Former military training areas

- Extreme local contamination by various chemicals
- Examples of the extensively used landscape with unique habitats

Ecosystem management

- Grasslands are threatened by natural succession of shrubs and trees
- Man-made management imitating periodical military training

Ecosystem management

- Spontaneous succession in abandoned karst quarries result in the same species richness as technical reclamation, but in there are more threatened species
- Tropek *et al.,* J. appl. Ecol., 47, 139-147, 2010

Ecosystem management

- The Water System Restoration Programme
- 1994 - 2010
- Subvention programme/subsidiary scheme
- Managed by the NAC CR

Ecosystem management

Forest ecosystem restoration

- Dead forests in areas affected by air pollution
- Native v. non-native species
- Troubles with some elements in soils

Ecosystem management

- Main policy documents:

➢ State Environmental Policy of the Czech Republic 2012 – 2020 (2012)

➢ State Nature Conservation and Landscape Protection Programme of the Czech Republic (updated 2009)

➢ National Biodiversity Strategy of the Czech Republic (updated 2009)

Ecosystem management

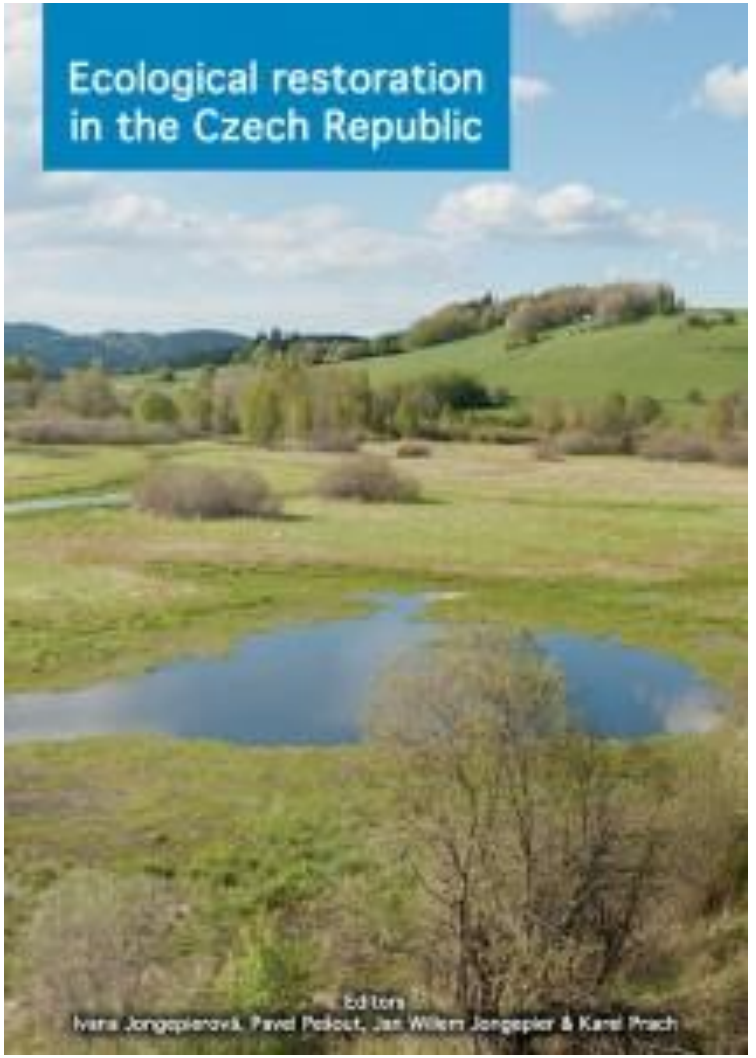
- Near-natural restoration vs. technical reclamation of mining sites in the Czech Republic

- Řehounková, Řehounek & Prach eds. (2011)

Ecosystem management

- Ecosystem restoration in the Czech Republic

- Jongepierová, Jongepier & Prach eds. (2012)



Ecosystem management

- I am interested in my future because that is where I am going to spend the rest of my life.

- Charles Spencer Chaplin

Ecosystem management

- Species respond to climate change in three ways:

❖Adaptation

❖Following their climate zones either towards the poles or to higher elevations

❖Becoming extinct

Ecosystem management

- Novel ecosystems
- Restoration of biological corridors
- Restoration of a mosaic of many mesoclimatically and microclimatically different habitat patches

Ecosystem management

- Climate change mitigation measures
- Peat-bog restoration funded by the NCA CR and by a big electricity company in northern Bohemia

Ecosystem management

- In July 1997 the three last greater floodplain forest complexes in Moravia kept three times more water than all dams in the watershed of Morava and Odra Rivers combined

Ecosystem management

Natural processes should be employed as much as possible

- Carbon cycle
- Water cycle
- Flood protection
- Soil protection

Ecosystem management

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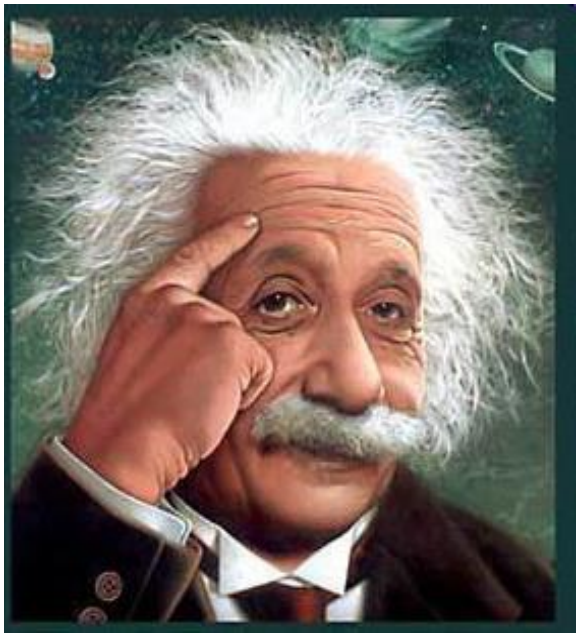
Ecosystem management

- Synergies between climate change protection and nature conservation and landscape protection
- The Landscape Natural Function Restoration Programme since 2009

Ecosystem management



- Look deep into nature, and than you will understand everything better

- Albert Einstein

Ecosystem management

Thank you very much for your attention

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