Re-naturalization of an industrial area: Restoring dry sandy grassland – open oak forest steppe

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The project

- We had the possibility to restore the areas (ca. 16 ha) of a factory in the Nyírség region, Hungary (47° 57’ N, 21° 39’ E)
- The factory was previously an apple orchard with only scarce wet semi-natural vegetation within 3 km
- Hierarchical restoration prioritization was applied to select best target for habitat reconstruction
- Dry grasslands (Pulsatillo hungaricae-Festucetum ripicola, Potentillo arenariae – Festucetum pseudovinae, Festuco vaginatae-Corynephoretum) and steppe oak forest (Festuco ripicolaque – Quercetum roboris) endemic for the Pannonian region were selected as target

Restoration technologies

- 209 packages of hay of (200-250 kg each) were distributed to introduce seeds of grasses (early harvest) and forbs (late harvest) or to be used as mulch
- Festuca pseudovina (30 kg/ha) or Festuca ripicola (60 kg/ha) were seeded as matrix species in ca. 13 ha
- A mixture of 26 forb species originating from commercial sources were seeded (1.5 kg/ha) in ca. 8 ha
- 40 grass and forb species originating from seed collection were seeded (0.5 kg/ha) in ca. 4 ha
- 30 % of the area was planted with trees and shrubs to create forest patches of varying size (300-3000 m²) and shape

Results

- Average vegetation coverage was 60 % by the 2nd year
- 75 % of seeded species were detected
- Composition differed according to restoration technique applied

Hierarchical restoration prioritization

- Nature conservation value
- Possible vegetation type
- Search for local rarity
- Search for propagules
- Rapid green surface
- Nurse plant selection
- Social preference search
- Demonstration garden

Best practice

- Seed addition for matrix grass species
- Hay addition to introduce forbs
- Tree survival depends on climate