Experiences in the management of 91I0 habitat type in Hungary

Katalin Sipos

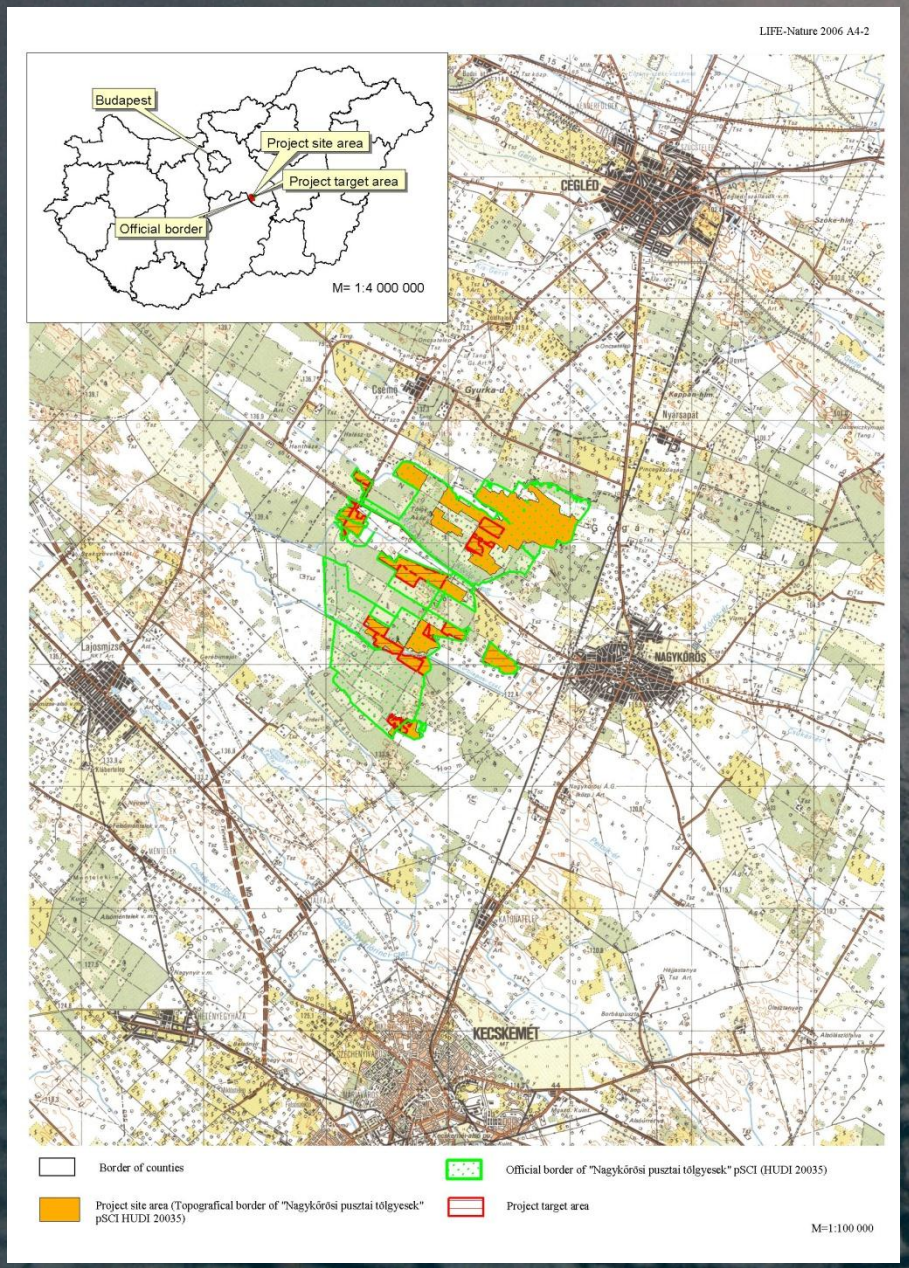
Duna-Ipoly National Park Directorate

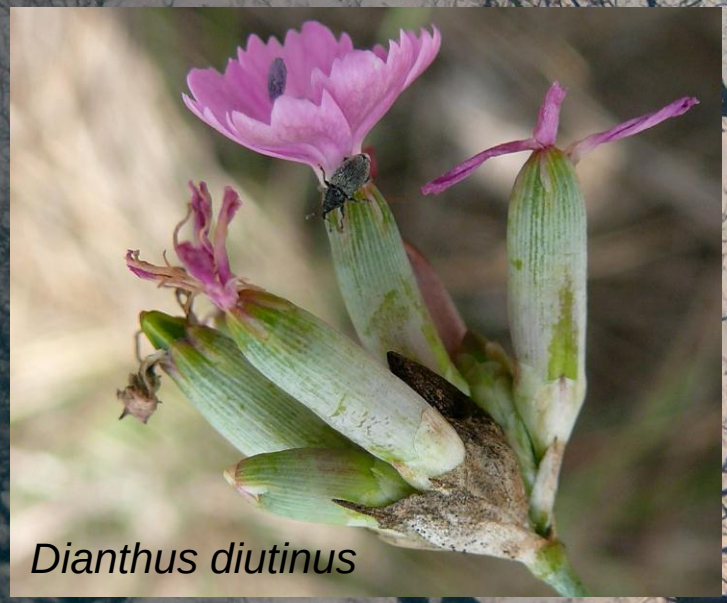
www.dunaipoly.hu





Case study: „Nagykőrösi pusztai tölgyesek” N2000 site





’Conservation of Euro-Siberian steppic woods and Pannonic sand steppes in ’Nagykőrösi pusztai tölgyesek’ pSCI’ - LIFE06 NAT/H/000098

Duration: **01.09.2006. – 31.08.2011.** (5 years)
Project area: **942 ha**

Budget: **1 863 236 EUR**
EU contribution: **1 397 427 EUR (75%)**

Threats and constrains

- spread of invasive plant species: *Robinia pseudoacacia, Prunus serotina, Asclepias syriaca, Ailanthus altissima*
- problems with natural forest regeneration (big game overstock, lack of water, climate change)

Threats and constrains

- strict legal obligations on reforestration
- unsufficient subsidy/compensation system
- inappropriate forest management activities (total soil preparation, modification of species composition)
- strong fragmentation, lack of functioning buffer zone

Measures

- taking over the restricted right of disposal on 175 ha of private land
- elimination of invasive tree species on more than 400 ha
- artificial forest regeneration with native species on cca. 65 ha
- exclusion of big game species on cca. 260 ha
- monitoring actions
- establishment of an educational centre and nature trail
- widespread communication on the habitat and the accomplished actions

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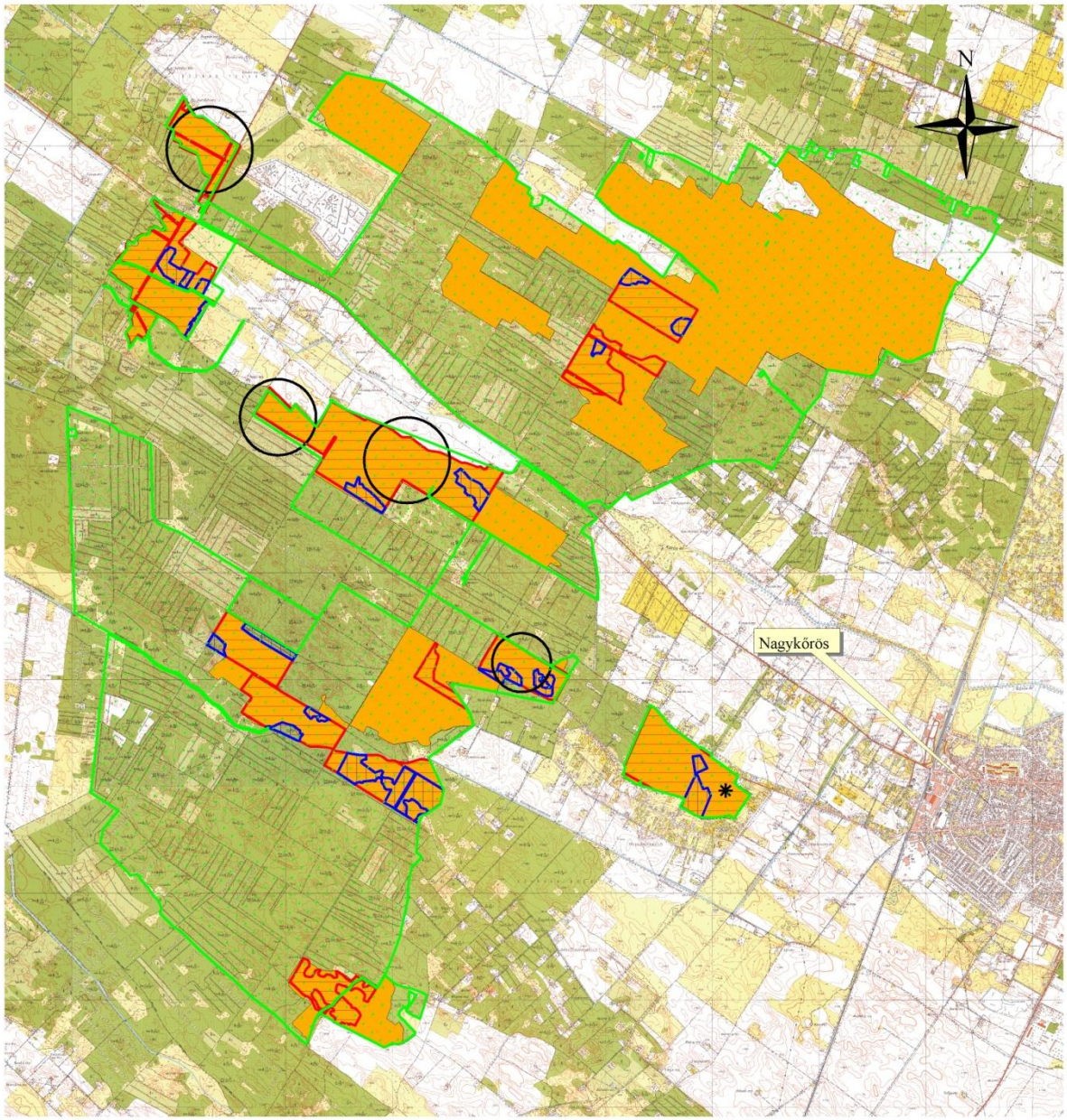

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Official border of "Nagykőrösi pusztai tölgyesek" pSCI (HUDI 20035)

Project site area (Topografical border of "Nagykőrösi pusztai tölgyesek" pSCI HUDI 20035)

Project target area

✱ Building reconstruction (C.4.)

Areas subject to artificial forest regeneration with native species (C.2.)

Areas subject to natural forest regeneration with game exclusion (C.3.)

Removal of invasive species using mechanical and chemical methods

- Key action
- Nearly on the entire project target area (418 ha)
- Method:
  - Harvest followed by chemical stump treatment (390 ha)
  - Stem injection (28 ha)
  - Post treatment: spraying of sprouts

Removal of invasive species using mechanical and chemical methods

Stump treatment

Sprout spraying

Removal of invasive species using mechanical and chemical methods

Removal of invasive species using mechanical and chemical methods

Serious need for human capacity

Volunteers

Contracted forestry workers

Experiences – arboreal invasion control

stump treatment

advantages:

lower costs of the first stump treatment compared to that of stem injection.

opportunity of immediate timber harvest

disadvatages:

optimal season of treatment seems to be short and hard to determine

time of treatment coincides with the time of timber harvest which is a sprout-inducing mechanical disturbance of the shoot system

lack of short term feedback on the effect of the treatment

spraying of sprouts is the only way of re-treatment in case of insufficient effect of stump treatment

spraying of sprouts has high costs for years

spraying implies a higher risk of chemical dispersion

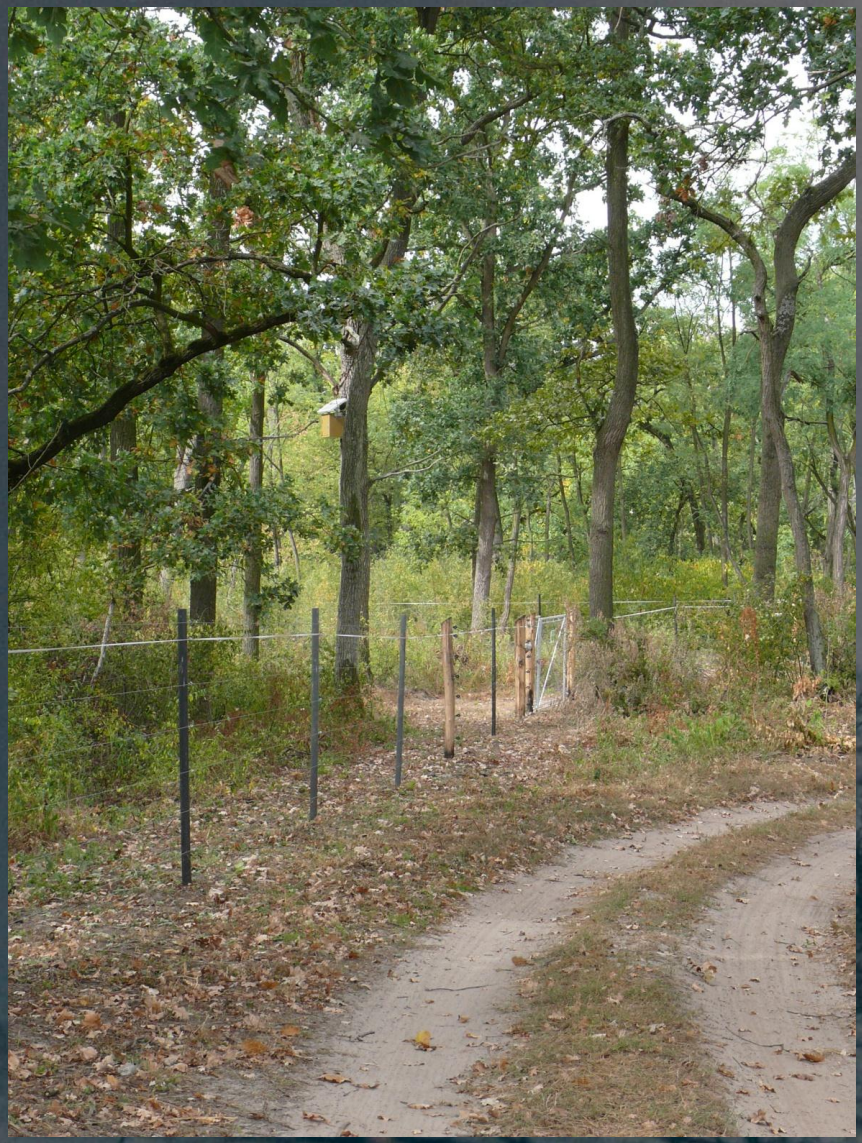
root sprouts occur in a more dispersed pattern

the commonly used herbicide (triklopyr - Garlon 4E) for stump treatment is no longer available in Hungary

Experiences – arboreal invasion control

stem injection (two seasons)	
advantages:	**disadvantages:**
optimal season of treatment is longer	higher cost of initial set of treatments
short term feedback	timber harvest must be delayed
opportunity of multiple re-treatment in case of insufficient effect of the first treatment	
there is not any mechanical disturbance of the shoot system as long as the tree is not perished	
harvest is not inevitable, but winter harvest is possible	
as sprouting is not significant, this method is cheaper on the long run	
risk of dispersion of chemicals is much lower than in case of stump treatment and spraying	

Natural forest regeneration with the exclusion of game



Cover of native shrub species increases in all components of the forest steppe

Opening oak patches develop into shrubs and not steppes

Will the natural forest regeneration start?

Artificial forest regeneration with indigenous species

Soil preparation is a key issue.

„traditional” total soil preparation

partial soil preparation

Experiences – artificial forest regeneration

- Invasion control should precede the artificial forest regeneration
- The fine-scale pattern of potential native vegetation should be taken into consideration
- Minimum soil preparation is a 50 cm deep 60 cm wide seedbed
- More intensive post-treatment is necessary compared to total soil preparation
- Sapling mortality rate is higher than in total soil preparation

„THE” open issue

What is the future perspective of this habitat type?

- How the spatial relation of forest/grassland will develop?
- What is the biotic answer to macro-environmental changes?
- How large area is needed to maintain all species and vegetation pattern?
- How invasive species can be controlled on long-term?

This presentation was created by Mr. György Verő,
Mrs. Annamária Csóka and Mrs. Katalin Sipos.

Thank you for your attention