LIFE-Nature project in Nagykőrös sandy steppic oak stands 2006-2011

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

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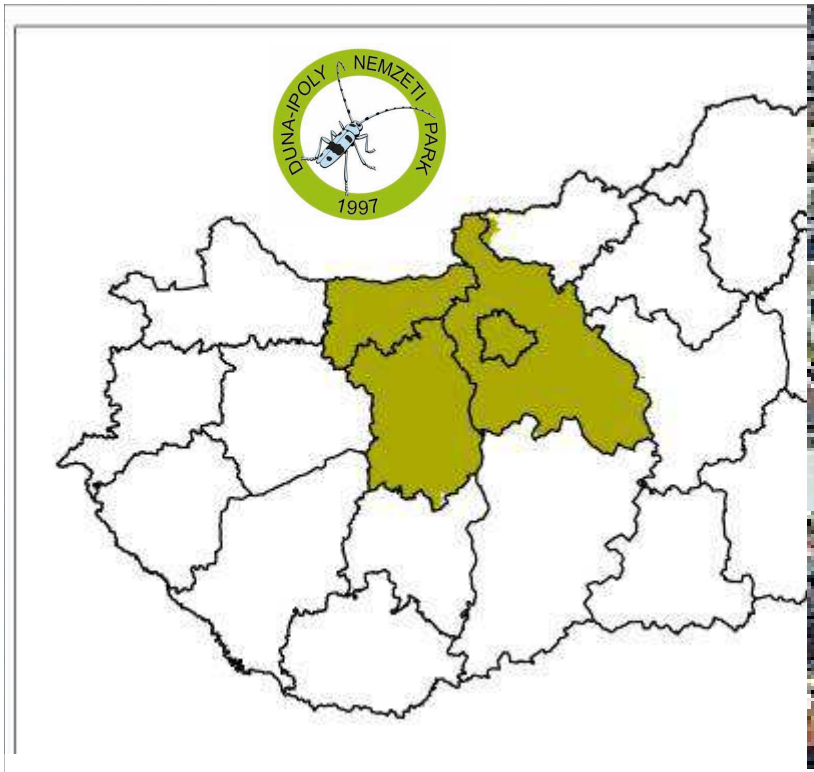
- ONE OF THE MOST ENDANGERED HABITAT IN HUNGARY
- Nearly no legal protection up to Natura 2000 designation (2004)
- Natura 2000 =

Basic project data

- Duration: 2006-2011
- Budget: 1 863 236 €
- EU contribution: 75%
- Project target area: 418 ha
- Benficiary: DINPD
- Partners: Local Government of Nagykőrös and WWF Hungary
- Co-financer: Ministry of Envoronment and Water / Ministry of Rural Development



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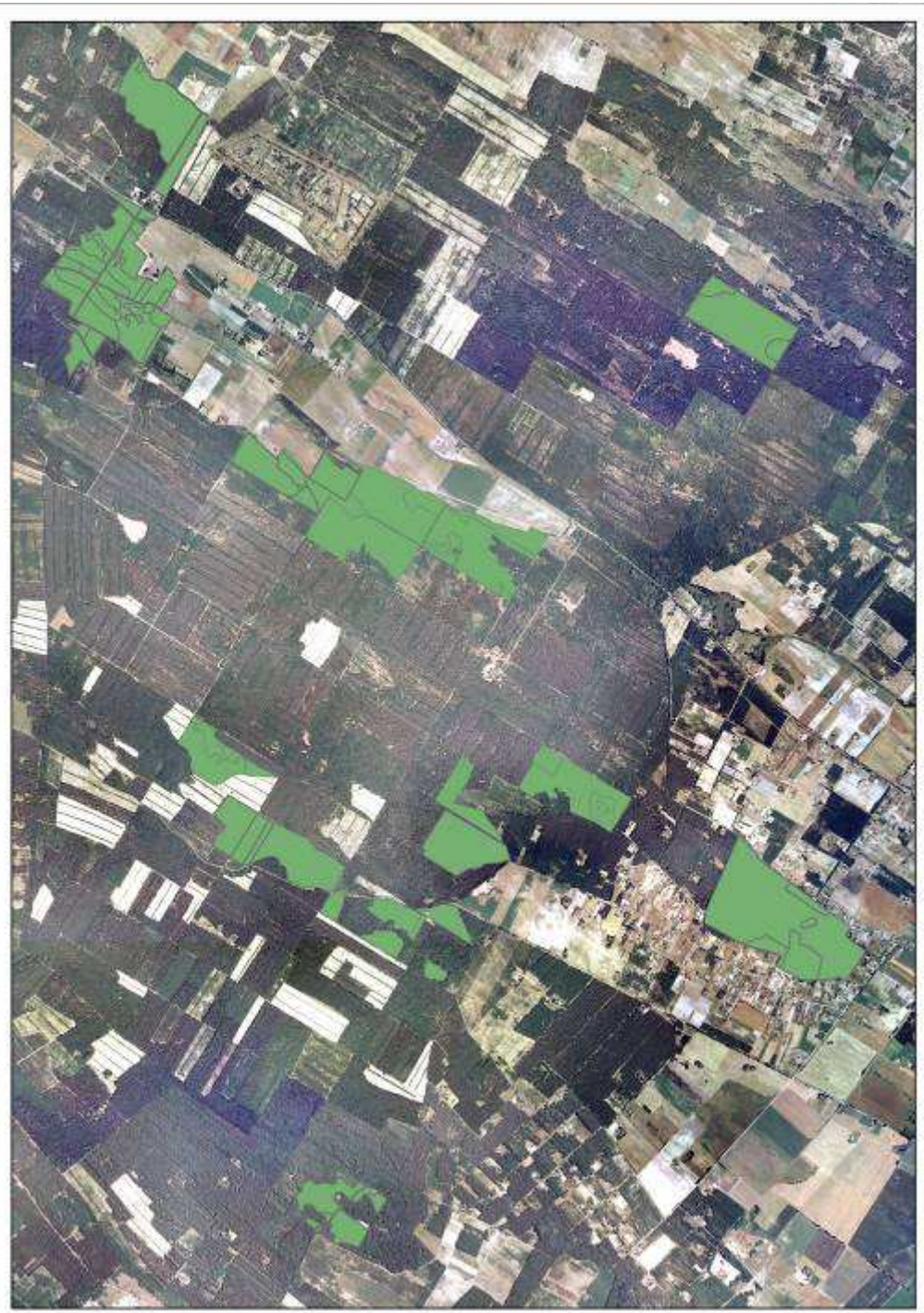
Threatening factors - overview

- spread of invasive plant species: *Robinia pseudoacacia, Prunus serotina*
- Problems of natural forest regeneration (big game overstock, lack of water)
- Forest management activities (total soil prreparation, non-native species)
- Fragmentation
- Ignorance of society, lack of information

Threa rview



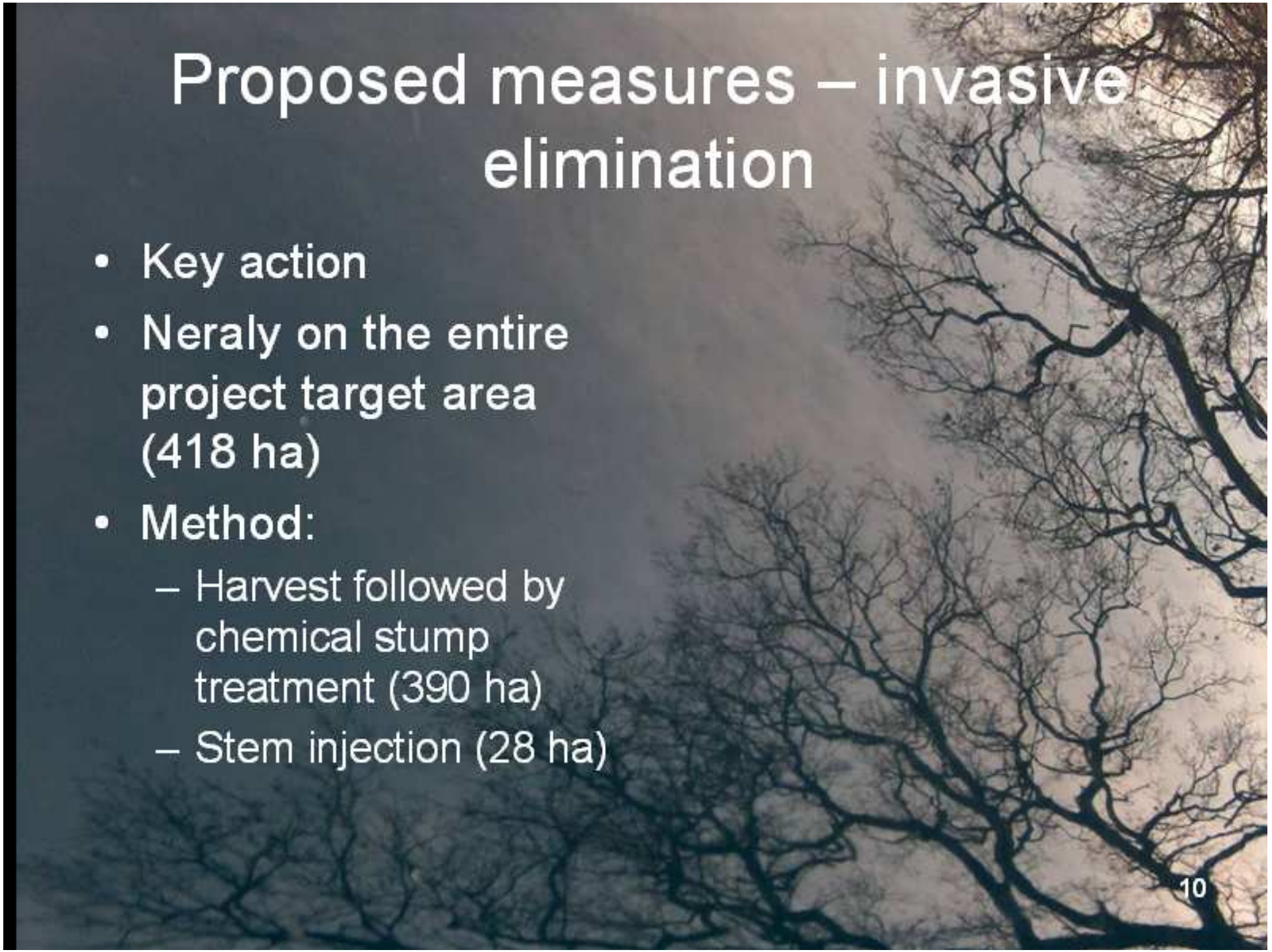
- spread *Robinia pseudo*
- Proble ration (big ga)
- Forest al soil prrepar
- Fragme
- Ignoran nation

Proposed measures - overview

- 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

Proposed measures – invasive elimination

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



s – invasive

- Harvest followed by chemical stump treatment (390 ha)
- Stem injection (28 ha

Proposed measures – artificial forest regeneration

- 65 ha
- Native species, mainly native *Populus spp.* and *Quercus robur*
- Partial (55 ha) and total (10 ha) soil preparation

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 patterned

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:

optimal season of treatment is longer

short term feedback

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

disadvantages:

higher cost of initial set of treatments

timber harvest must be delayed

Experiences – artificial forest regeneration

- Invasion control should preceed the artificial forest regeneration
- The potential native vegetation of the site in small scale should be considered
- 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

Outlook - open issues

- 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?

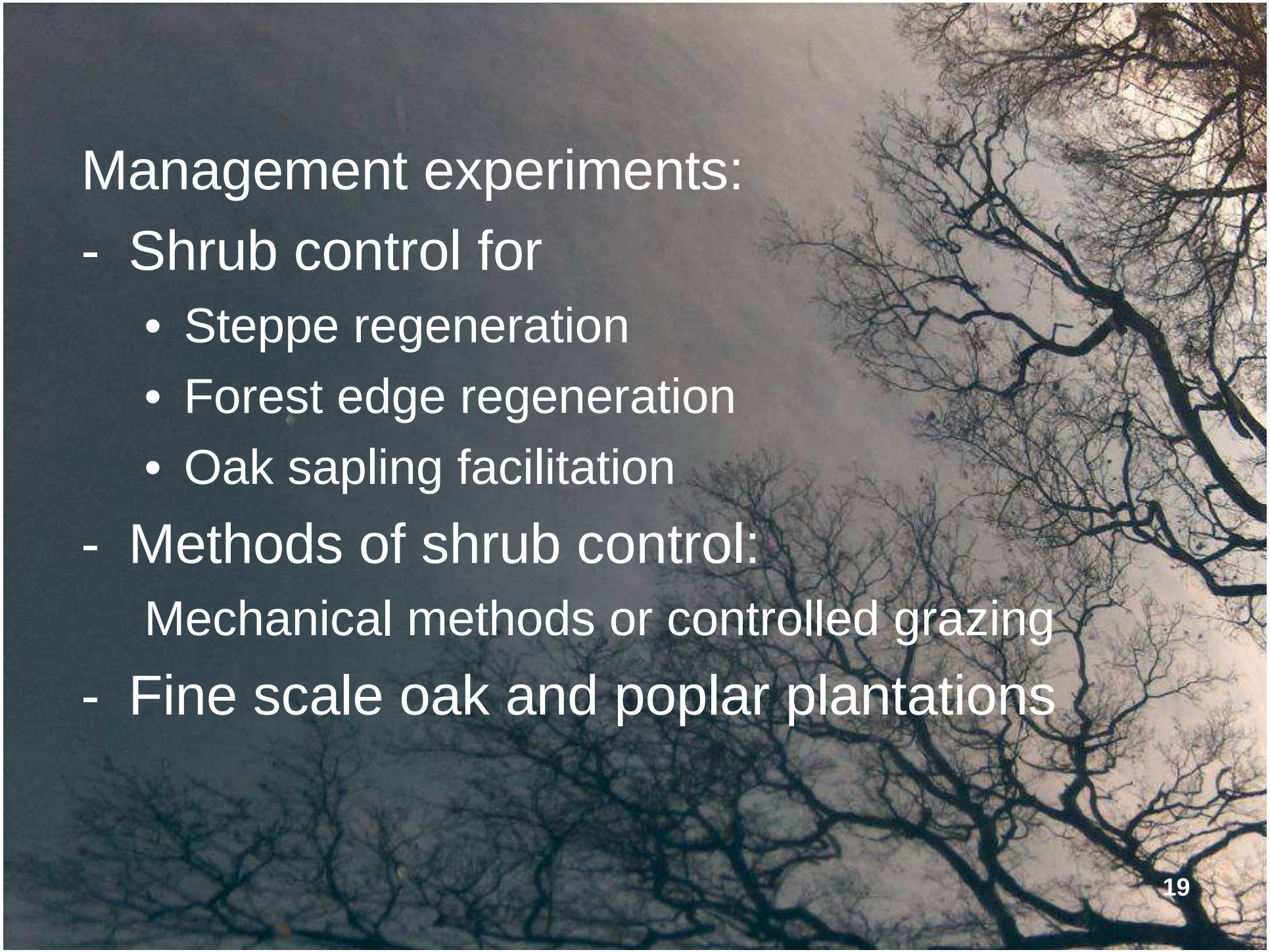
„THE” open issue

What is the target state to achieve by any further management?

Even to answer this basic question thorough research is necessary.

Dynamics:

- what happens to the dense shrub stands without management on the long run?
- What are the abiotic and biotic factors behind oak sapling mortality/survival?
- What is the pattern of native Populus spp. and their regeneration?



Management experiments:

- Shrub control for
  - Steppe regeneration
  - Forest edge regeneration
  - Oak sapling facilitation
- Methods of shrub control:

  Mechanical methods or controlled grazing
- Fine scale oak and poplar plantations


Thank you for your attention