Selective (yet labour-intensive) methods for controlling invasive plant species

Sustainable land-use at the Peszéradacs meadows

Dr. Csaba Vadász
Kiskunsági National Park Directorate

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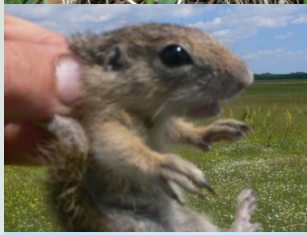
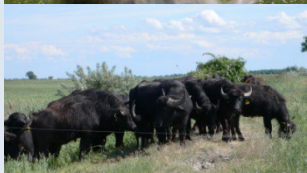
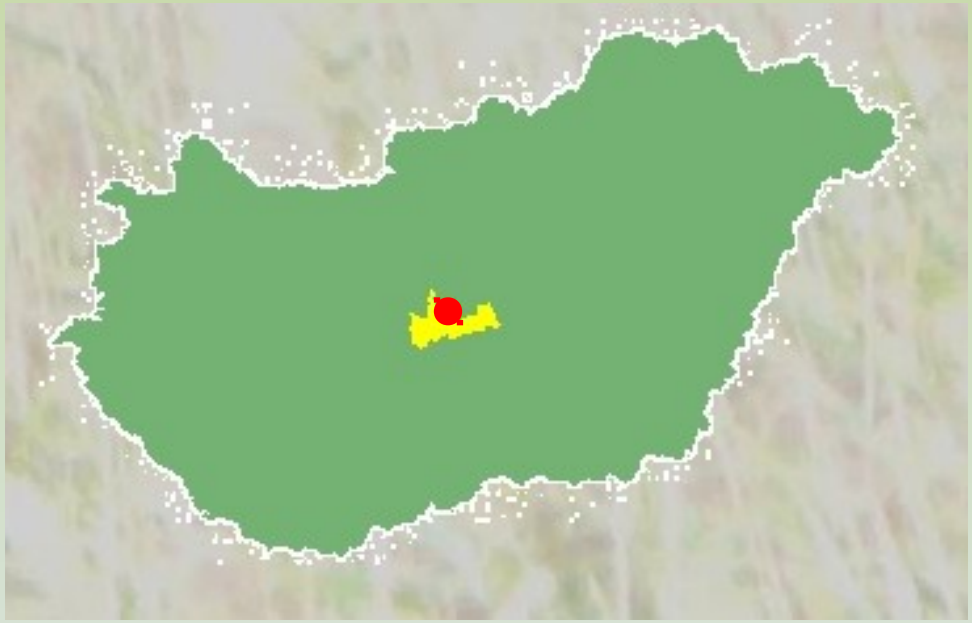



Site characteristics



- Unproductive sand soils
- Unfavourable water conditions
- Located far from towns

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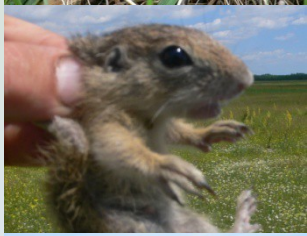
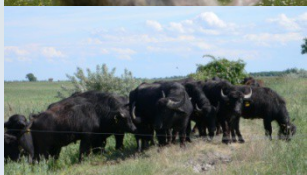
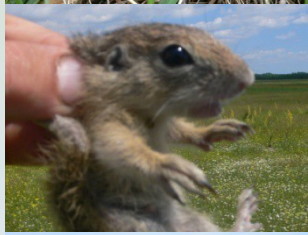
Extensive farming
Thriving, semi-natural wildlife

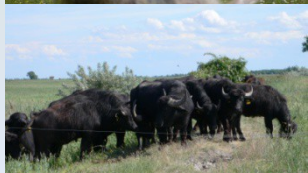




Characteristic species and habitat types





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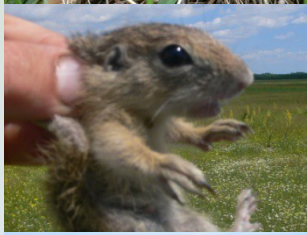

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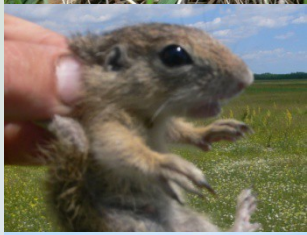
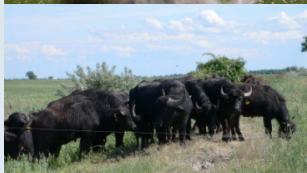




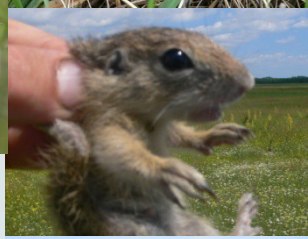
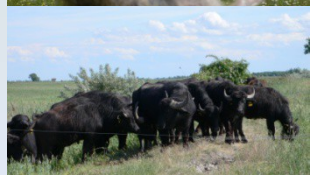
Characteristic species and habitat types









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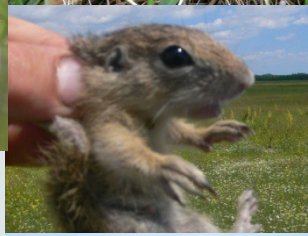

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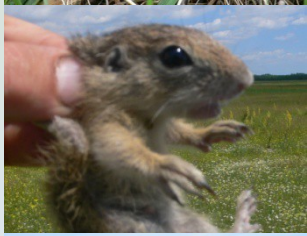
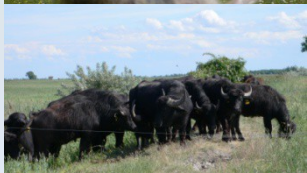


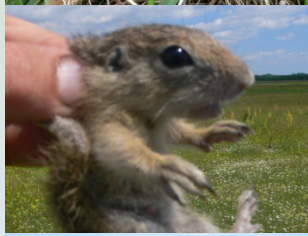
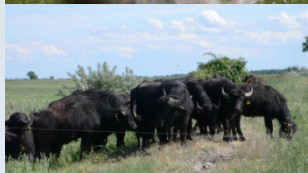


Invasive alien plant species

- *Asclepias syriaca*
- *Solidago spp.*
- *Ailanthus altissima*
- *Prunus serotinus, Acer negundo, Celtis occidentalis*
- *Eleagnus angustifolia*





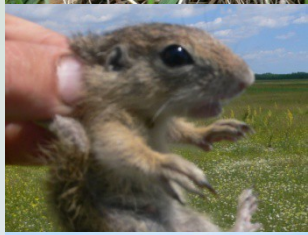
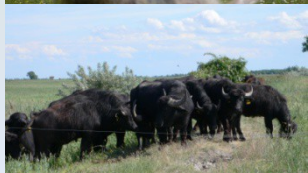




First trials, first experiences

- A lot of methods have been tested.
- A lot of those simply did not work.
- Additional challenges:
- lack of selectivity,
- lack of spatial data,
- unknown resource demands.



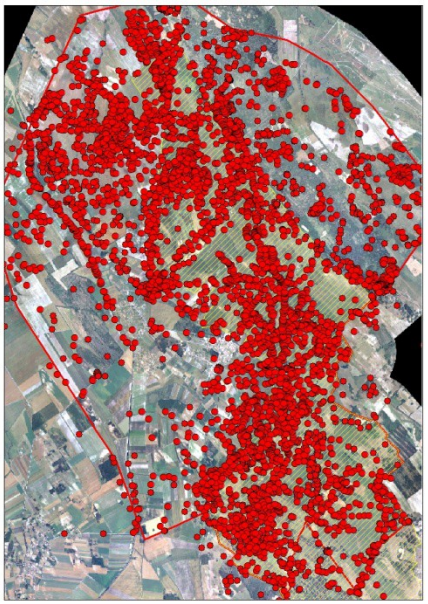


Data collection

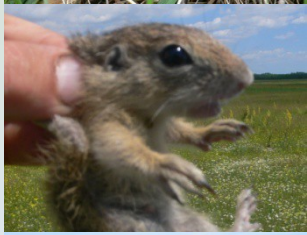
Systematic data collection focusing on invasive species

- which enabled us to make precise plans
- and makes it possible to quantitatively assess the efficiency of treatments.







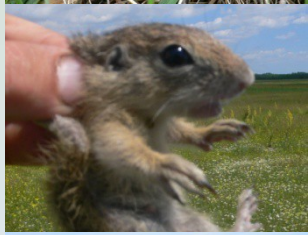




…and this is where we are now

- We have methods for treating invasive plants which are:
- selective,
- efficient,
- and calibrated
- for all the locally abundant species.





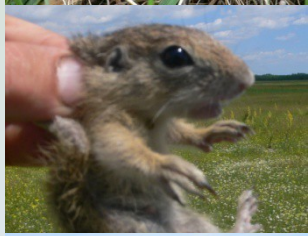
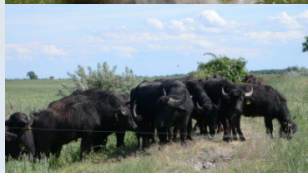




Basic technical details

- „Do you know what is funny about Europeans? …Little differences.”
- These are the technicalities that influence the final effect of the treatment.
- We have developped two basic types of chemical treatments and a mechanical treatment for the Russian Olive.





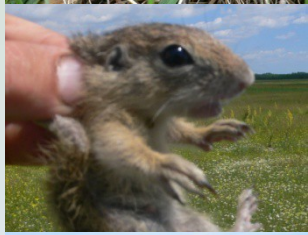
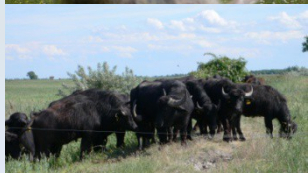




Basic technical details

- The technical details are summed up in a chapter of the *Rosalia* handbook.
- Arboreal species are treated from late summer till the first freeze,
- We do not apply spraying,
- trees with trunk diameter exceeding 8 cm are drilled with an internal combustion machine
- and the holes are filled with undiluted glyphosate-based herbicide using a veterinary syringe.
- The number of holes depends on the perimeter of the trunk (1 hole/5 cm).
- The surviving specimens are retreated after 10-15 days.
- Higher than 90% efficiency!





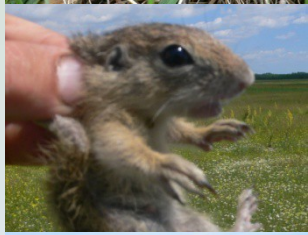
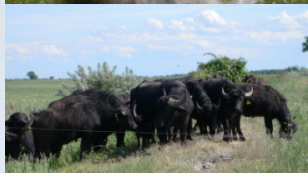




Basic technical details

- The bark of trees with trunk diameter not exceeding 8 cm is partly removed
- and these wounds are brushed with undiluted glyphosate-based herbicide.
- The surviving specimens are retreated after 10-15 days.





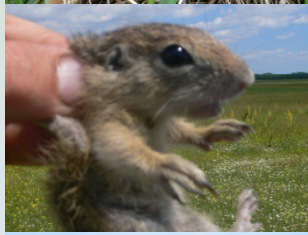
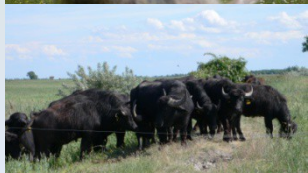




Basic technical details

- Non-arboreal species are sprayed
- using handheld (medium-capacity) sprayers
- with glyphosate-based herbicide diluted to 2.5 - 5%.
- Only non-flowering specimens are treated, flowering specimens are cut back and got treated after 2-3 weeks.
- This way the Common Milkweed can be treated from May till October.





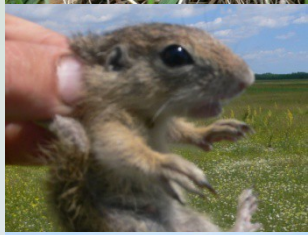
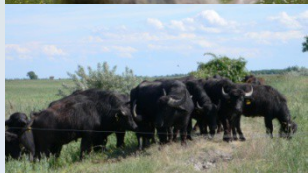




Basic technical details

- Russian Olives are removed using front-lever machines.
- It can be applied on sand soils, but it is insufficient at clay soils.
- This method reduces the use of chemicals.





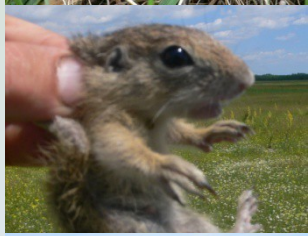




Results

- Invasive alien plant species have been reduced to the level detection threshold at the protected grasslands (more than 4,000 ha).
- Also, the same result has been achieved at 1,000 hectars of N2000 grasslands (not protected at national level) .
- The most aggressive arboreal species have been removed from 130 hectares of forests.
- Now, we work on the eradication of invasive plant species form non-protected forests (plantations) surrounding the protected and Natura 2000 areas.
- We have published data about the labour- and herbicide demands of different treatments focusing on particular species.





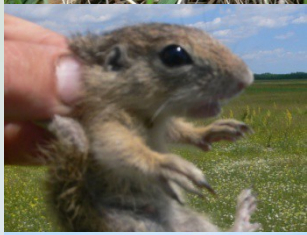




The sustenance of the achievements

- Eradication of invasive plants is a tool for conserving/restoring biodiversity.
- To achieve our targets, it is important to incorporate the treatment of invasive plants to management system.
- Management practices which facilitate the spread of invasive plant species have been revised and replaced by other ones.
- There are several technical details, just two to be mentioned here:
- Mowing or chopping open sand grasslands is not applied, as it facilitates the colonisation and germination of the Common Milkweed.
- Grazing pressure and the timing of grazing is very important issues.





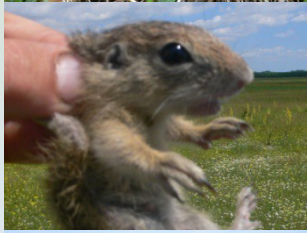




Some piece of personal experience

- The management of our organisation (KNPD) provided huge supports to those who willed to take part in the eradication of invasive plants.
- It was just the matter of will, whether it was carried out or not.
- Our experiences have been shared within the organisation several times.
- However, the information flow is clearly insufficient,
- and changes in distribution of invasive plants are neither monitored nor reported at the vast majority of sites.
- The processes are rather different: the amount of invasive plants decreases at areas where those are properly managed, and it increases at all the other sites.






Thank you for your attention