



Experiences on IAS removal in Belgian dunes by excavation and drum sieving

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Target and targetspecies

- Shrubby invasive alien species (IAS)
- IAS threathening protected dune habitats
- Remove *R. rugosa* locally
- Elaeagnus, Ligustrum ovalifolium, Mahonia, Tamarix, Cotulea, Lycium barbarum



Project area

- Terrains of:
 - ANB
 - Agency for Maritime Services and Coast (AMDK)
 - Agency for Road and Traffic (AWV)
- 15/9/2020 - 31/3/2021
- Follow-up treatment:
1/9/2021 till 15/10/2021
- Total removal of 80.000 m² IAS





Methods

1. Removal of *Rosa rugosa*

- a. Very small patch and remote: bury at -2m depth
- b. Low shrubs, easily accessible: excavation (1m) and sieving with drum sieve
- c. High shrubs, or mixed with other shrubs/trees, easily accessible: remove all woody material beforehand and then excavate (1m) and sieve with a drum sieve
- d. Very hard-to-reach patches: excavation (1m) and sieving with screen bucket on excavator
- e. Near infrastructure and pipes (digging impossible): chemical



2. Removal of other woody exotic species



- Pull out with sorting grab on excavator, excavate with sieve bucket on crane, uproot and shake out.
- Removal of all woody material



On average 6 to 8 euros per m², excl. vat

To arrange, depending on the location:

logging permission, deviation from management plan, permission to work in heritage landscape, deviation from the use of pesticides,..



Work plan

1. Well mark the contaminated zone
2. Excavate 1 meter of substrate with a perimeter of 1 meter around the contaminated zone
3. Sieving with a drum sieve or sieve bucket with a maximum mesh size of 3 cm²
4. Removal of material from dunes with tracked dumper
5. Returning sieved sand to the original dune profile
6. Sieved material: stones, plants and their rhizomes, plastic and metal → waste disposal compagnie



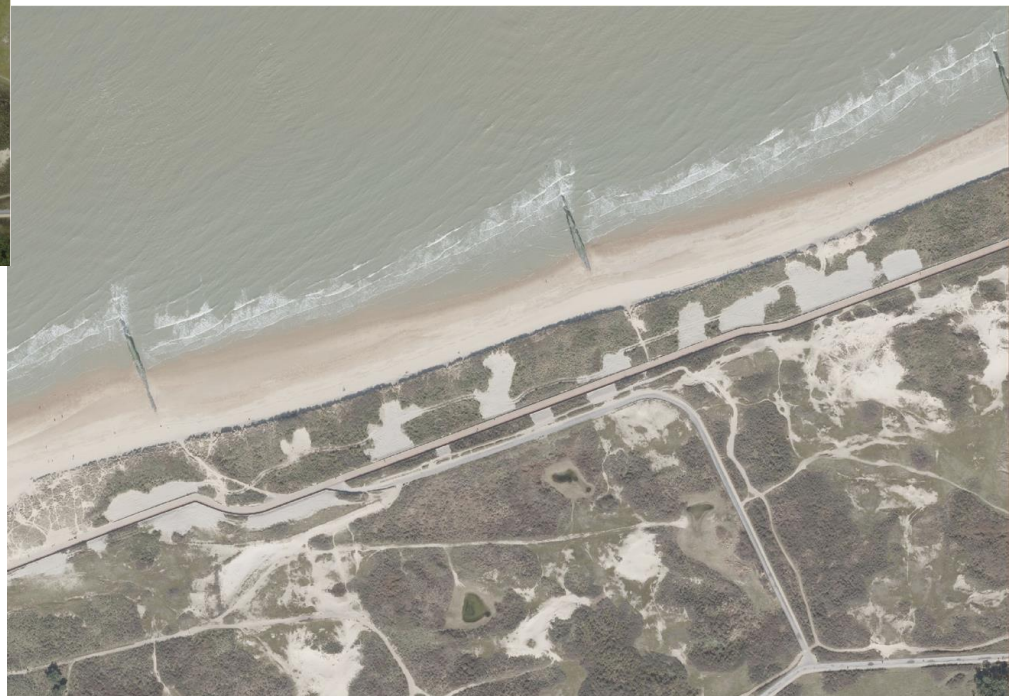
Work plan

- Remove and replace fences and grids
- Planting marram grass, planting density 35 cm for quick fixation near infrastructure (dyke, cycle path, road)
- Placing sand screens
- Areas with exotic shrubs are mapped beforehand and afterwards (with RTK-GPS)









Results



- Successful project: large area of IAS removed
- Excavation and sieving went well and seems difficult to improve
- Overall affordable technique
- Required little aftercare until now



- Too many IAS were found that weren't mapped at the start
- There are zones where excavation is not possible, and spraying is the only option (e.g. embankments next to road, tram)
- Regrowth, both after sieving and after chemical treatment, is a fact (but remains manageable)

Regrowth

- Regrowth from deeper than 1 meter
- Regrowth where less than 1 meter has been excavated
- Regrowth from edge zones where patches have been forgotten
- Regrowth of remaining rhizomes (poorly sifted or cleaned up)
- Regrowth from seed in the soil (including new seeds from nearby populations)
- Bad chemical treatment



Monitoring and aftercare



- Minimum 5 years of monitoring and aftercare required for regrowth
- Digging up manually (pitchfork) rhizomes in summer
- Weeding out seedlings
- Remove 'old' patches (missed during largescale works) mechanically!
- Follow up chemical treatments and repeat if necessary

‘Carefull’ conclusions

- Large-scale main treatments work well in most zones
- Hardly any negative reactions from the public
- Regrowth in the coming years is not yet sufficiently known
- What about patches owned by private owners?
- Who organizes the permanent aftercare?
- Mapping the IAS with a detailed GPS is very important!!