Ecology under development at the HPZ

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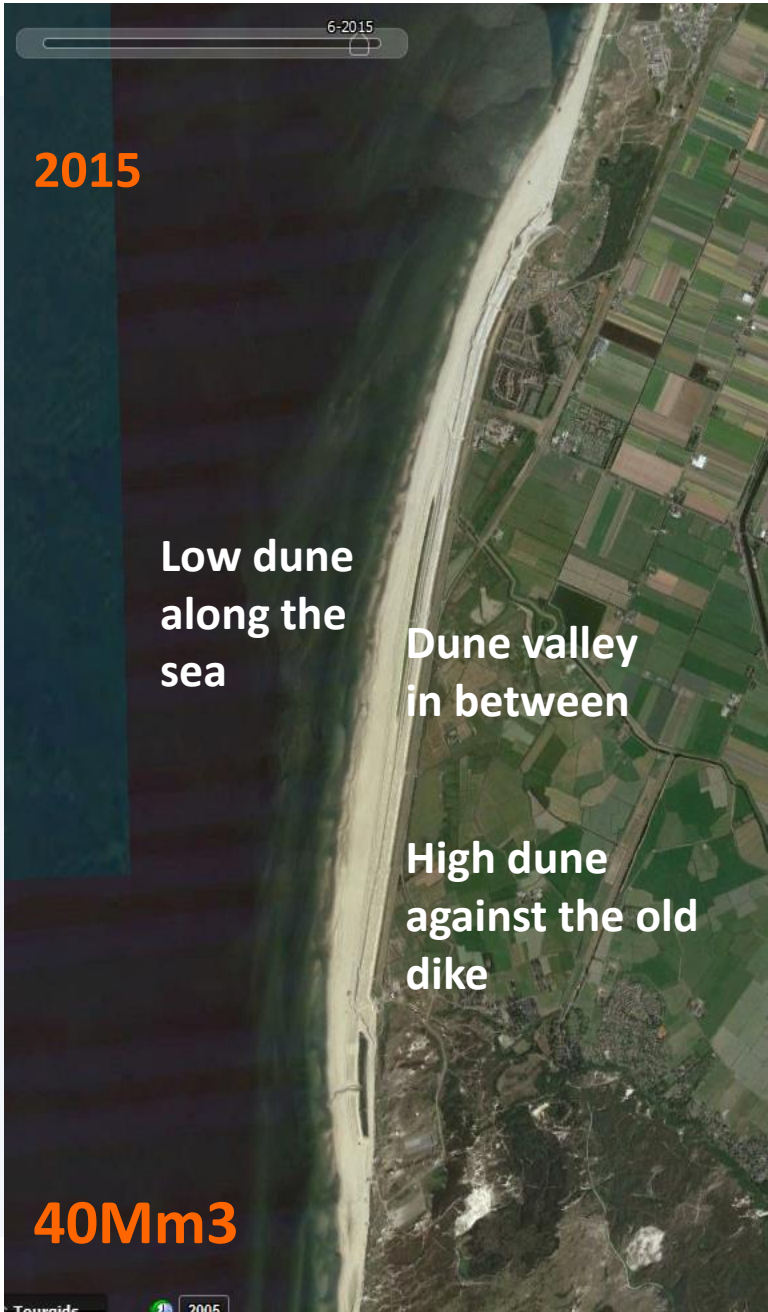
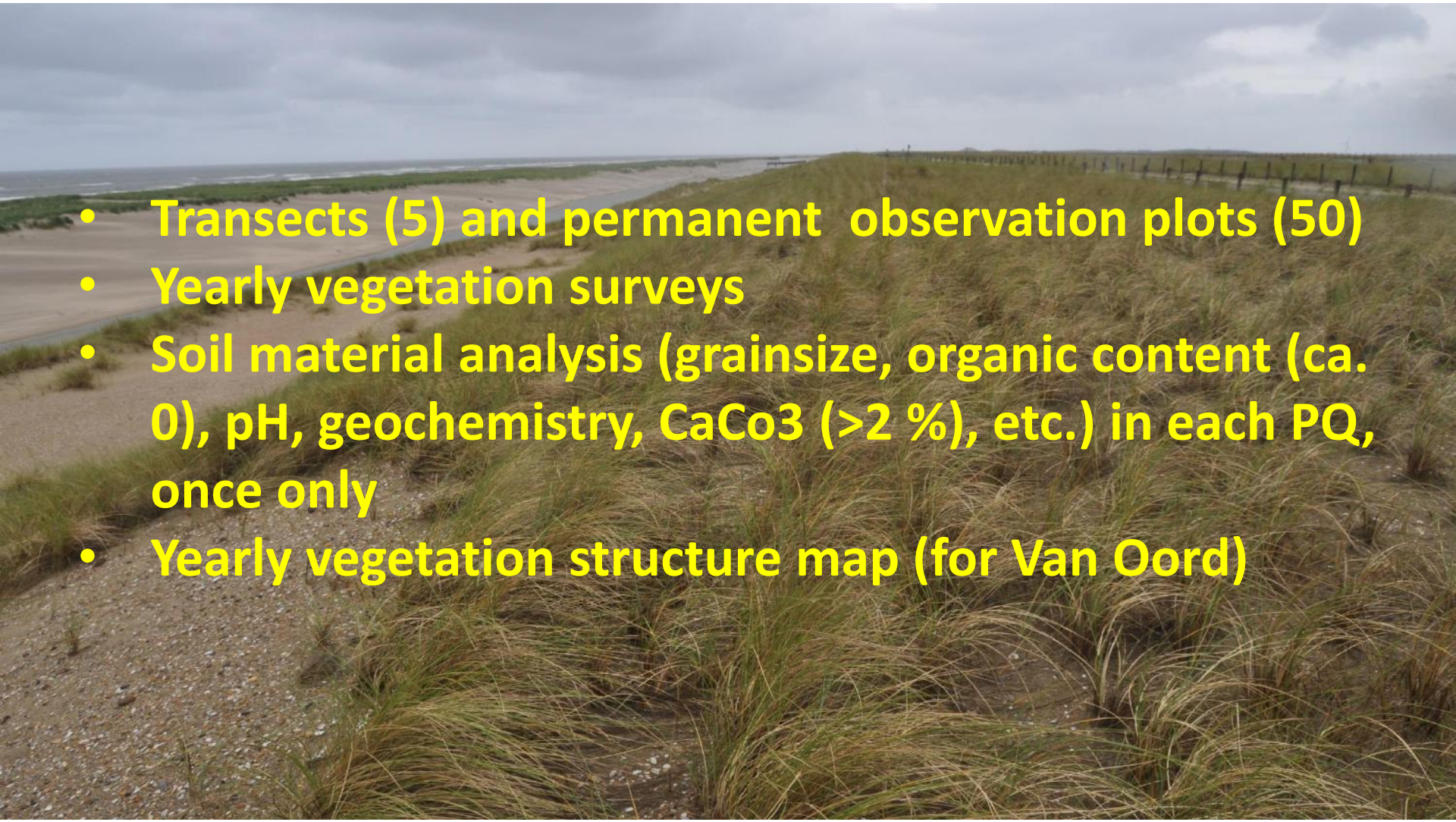
EcoShape
building with nature

New Hondsbossche (North Holland)




Old dike, considered no longer safe (2004)
Nourishment in process of completion 2015
What ecology?

Ongoing vegetation research

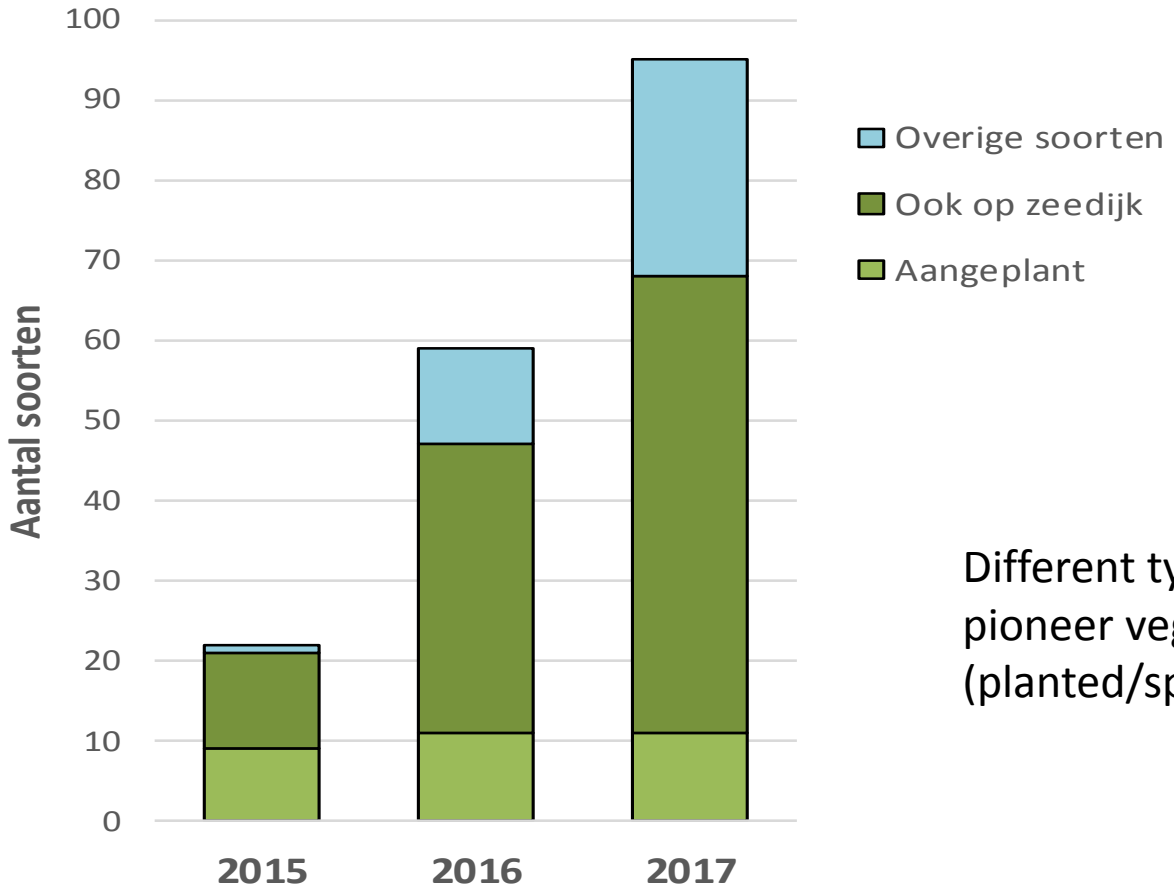


- **Transects (5) and permanent observation plots (50)**
- **Yearly vegetation surveys**
- **Soil material analysis (grainsize, organic content (ca. 0), pH, geochemistry, CaCo3 (>2 %), etc.) in each PQ, once only**
- **Yearly vegetation structure map (for Van Oord)**

Results

- Grainsize (average larger) and CaCO3 gradients (average lower) from south to north; reflects on species richness and on vitality class
- Rapid and wide-spread increase in cover of embryonic dunes on the high beach
- In dune valley, specific salt tolerant vegetation with rare species
- Low and high dune: flourishing en decline of planted Marram grass depending on sedimentation rate of fresh sand from the beach

Results: rapid overall increase number of plant species

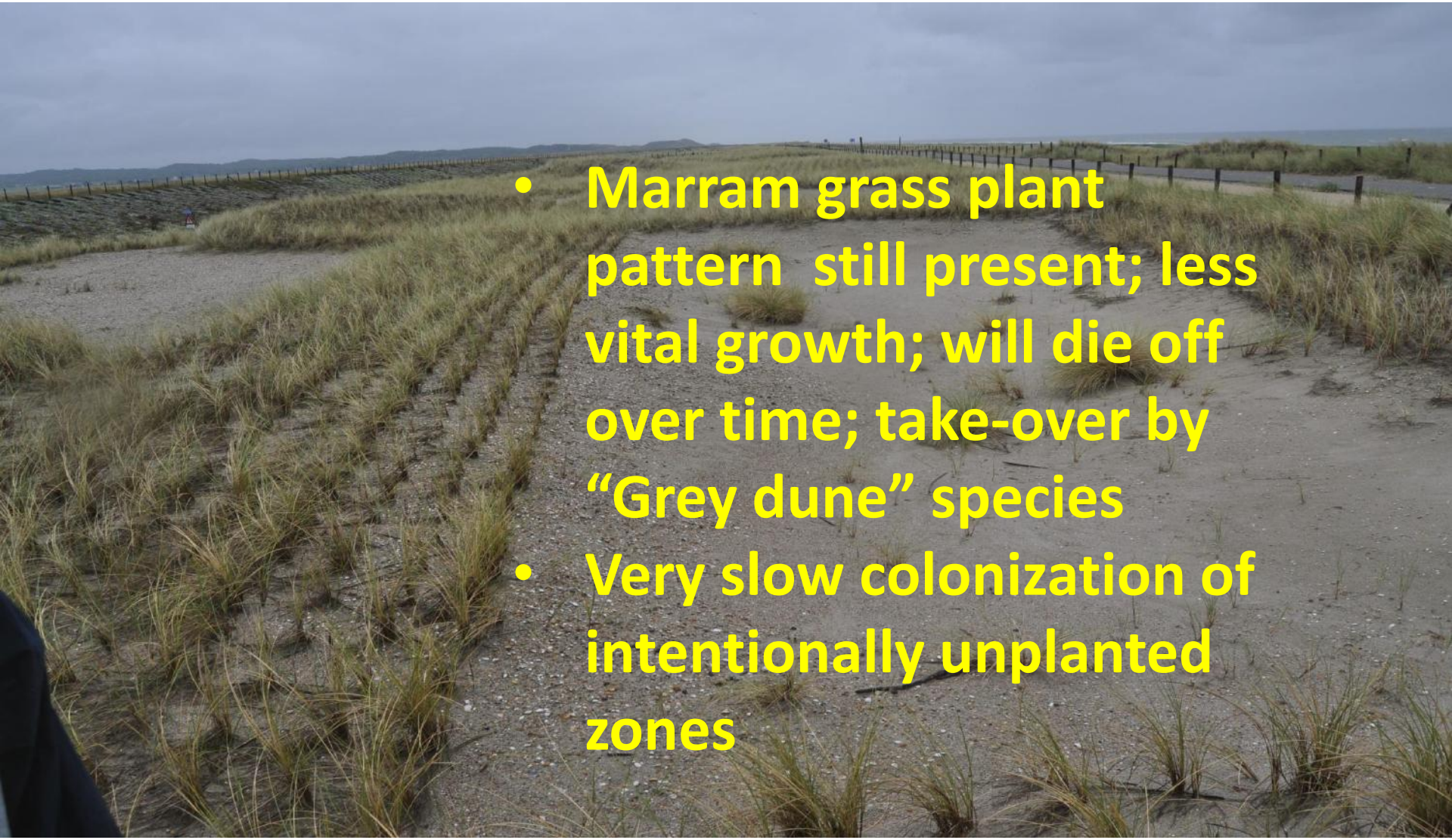


Different types of pioneer vegetation (planted/spontaneous)

The Old Dike and High Dune (land side)

- **Old dike: more sheltered, less salt spray, increase in density/species number of a.o. eutrophic plants, source of plant seeds for the new HPZ**
- **High dune: Sea buckthorn shrubs developing, slow growth of other planted shrubs, strong south to north gradient in vitality (declining)**

The High Dune (middle part)



- Marram grass plant pattern still present; less vital growth; will die off over time; take-over by "Grey dune" species
- Very slow colonization of intentionally unplanted zones

High Dune: sea front dune

- Upper reaches receive less sand: less vital growth, some formation of shallow blow outs
- Closest to the beach: very vital growth (> 50 cm sand trapped in vital Marram grass/yr)

Dune valley

- At first slowly, but now rapidly freshening
- Rapidly narrowing due to sedimentation of beach sand, especially in the south
- Some rare plant species appearing

Embryonal dunes on the beach

- **Wide beach-low gradient**
- **Rapid spreading of new embryonal dunes with good quality vegetation**
- **Really natural vegetation> bonus!**
- **New coastal dune in the making**

Thank you for your attention!