



# The Dutch OBN Knowledge Network 'Research and knowledge transfer on heathlands restoration'

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# The Dutch OBN Knowledge network

**OBN = network 'ecological restoration+management'**

- development, goal
- organisation

**OBN = research program 'restoration ecology'**

- knowledge model: from hypotheses to proven measures
- research program and running projects (→ heathlands)
- OBN knowledge matters: evidence based measures
- knowledge transfer

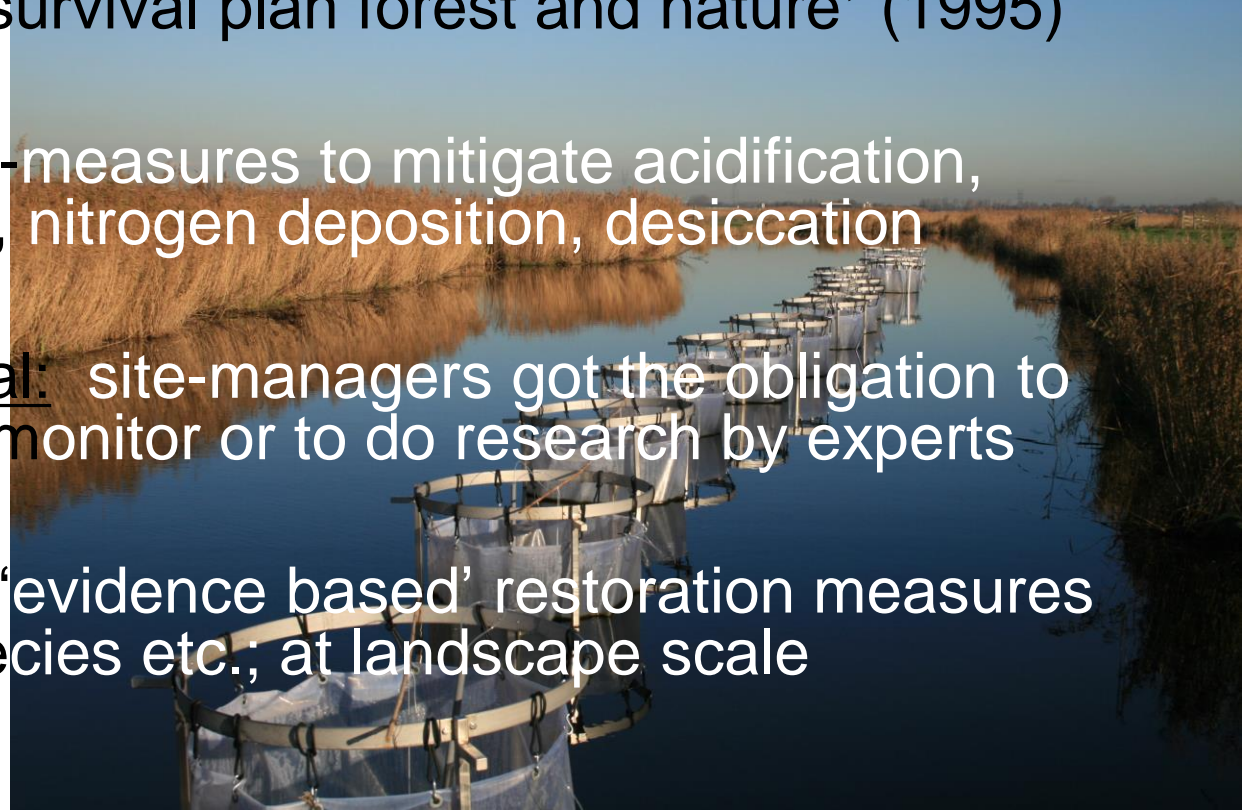


## Success factors and wins



# Development of the OBN network

- start in 1990 by national government as a subsidy for measures → ‘survival plan forest and nature’ (1995)
- ‘trial and error’-measures to mitigate acidification, eutrophication, nitrogen deposition, desiccation
- but very special: site-managers got the obligation to get advice, to monitor or to do research by experts
- since 2008 → ‘evidence based’ restoration measures for N2000, species etc.; at landscape scale



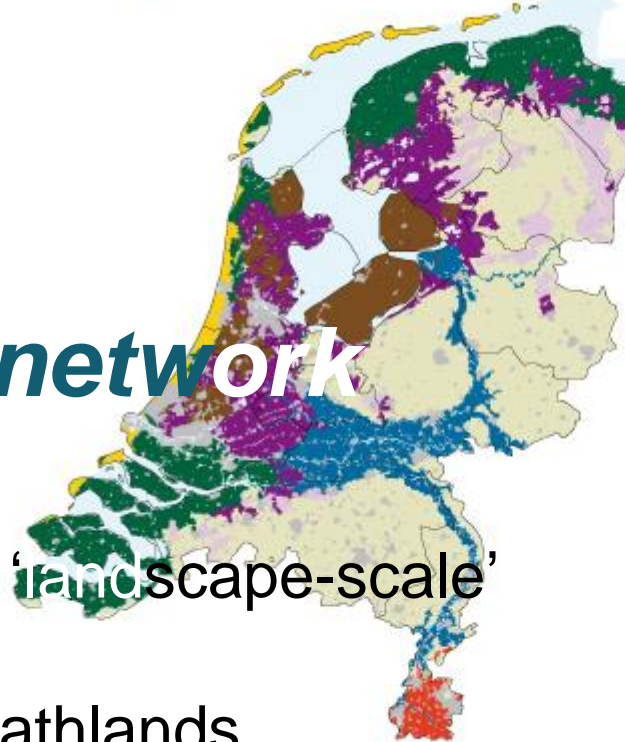


# Goal of OBN Knowledge network

- **‘Evidence based’ restoration and management**
  - knowledge base/gaps → research projects, monitoring
  - knowledge transfer → reports, website (passive)
  - knowledge transfer → fieldsymposia, advice (active)
- **For several policy goals**
  - European N2000 habitats and species
  - national nature network
  - new nature development (on former agricultural grounds)
  - agri-environmental schemes
  - water management as WFD

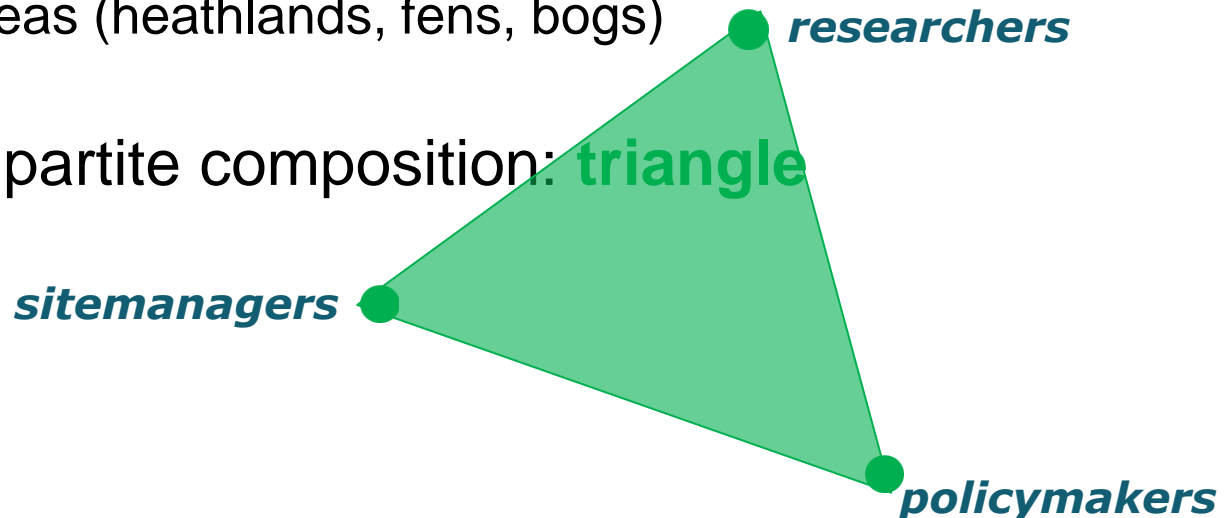


# OBN Knowledge *network*



- 8 Expert Teams (ET's) at 'landscape-scale'
- 3 ET's are relevant for heathlands
  - Dry sandy areas (drift sands dunes, heathlands, woods)
  - Dunes and coastal areas (grey dunes)
  - Wet sandy areas (heathlands, fens, bogs)

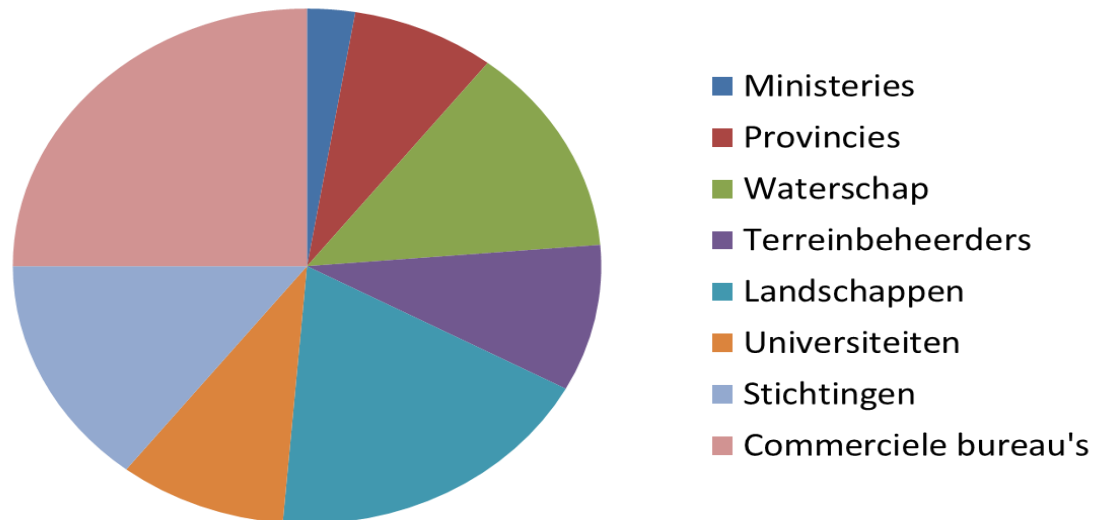
- ET's have a tripartite composition: **triangle**





## OBN Knowledge *network*

- these 8 ET's include ca. 130 active members
- coming from over 100 organisations:
  - *sitemanagers*: State forestry (SBB), Dutch society NM, private
  - *policymakers*: provinces, waterboards, RWS
  - *researchers*: universities, consultancies, individual experts



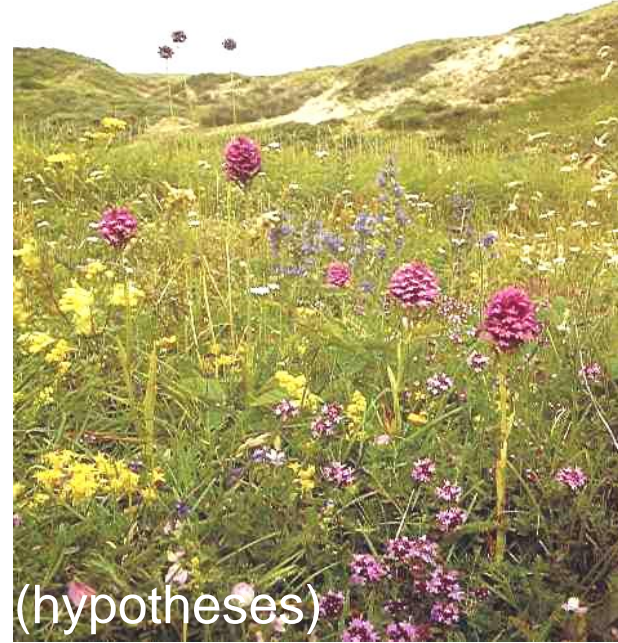


## Expert teams are core of the *network*

- discuss management problems and policy options → research/monitoring projects
- are responsible for guiding research projects and knowledge transfer
- members voluntary exchange, bring and get relevant knowledge
- members have relevant but different expertise
- members have strong motivation



# OBN Knowledge *model*



- **Fases in knowledge development**

1. knowledge base → what works/what not (hypotheses)
2. fundamental research → experimental testing hypotheses
3. applied research → experimental restoration at natural sites
4. knowledge transfer → advice to site managers/policy makers
5. monitoring → evaluation of measures

- → **Evidence based ‘status’ of restoration measures**

- hypotheses → experimental → thumb rule → regular/proved



# OBN Knowledge *program* 2014-2018

## ■ 4 Themes (knowledge gaps in heathland types)

- Quality status N2000-areas:
  - small scale dynamics in grey dunes?
- Mitigation of nitrogen deposition (“PAS”):
  - slow-release fertilization of dry heathlands?
- Species management:
  - management of geese in soft lakes
- National nature network:
  - extension/bufferzones of bogmires



## OBN Knowledge projects

- applied research =
  - testing experimental measures in restoration or management
- characteristic of OBN-projects
  - experimental, field scale, ecosystem, 'long' term
  - central question → *'the effectivity of restoration measures'*?
- examples of restoration measures
  - nutrient management (digging, cutting, mining or adding?)
  - rewetting, reintroductions
- methods: 'impact'-research based on BACI-concept
  - plots: in great detail but mostly at limited scale/time frame



# OBN Heathlands *projects*

## Shifted focus in heathland restoration ecology

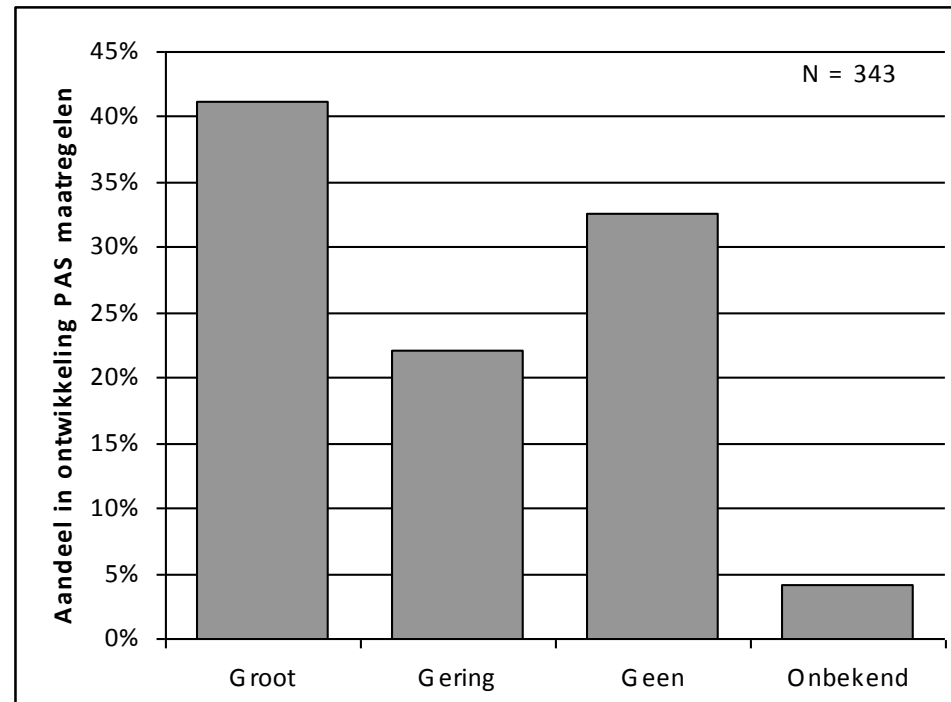
- < 2008: burning, mowing, sod cutting combined with chalk adding to remove N (succesfull recovering **purple** heathlands)
- 2011: grazing; choppering (not removing top soil)
- 2012: grown arable fields/adding P! → soil buffering for flowering plants and fauna (to recover **yellow** heathlands)
- 2014: adding rock powder for slow release of minerals to restore nutrient balance and soil fauna (woods - 2016)
- 2017: extensive management: old heathlands with big H-horizont



# OBN Knowledge matters!



- 63% of the restoration measures to mitigate nitrogen deposition is 'evidence-based' on OBN-research
- these measures are:
  - hypotheses: 28%
  - thumb rule: 22%
  - proven: 50%





# OBN Knowledge *transfer*

## Scientific output

- reports (ca. 230 t/m 2017: [www.natuurkennis.nl](http://www.natuurkennis.nl))
- scientific articles (2014-2017: 12)
- dissertations (since 2014: 5)
- external 'reviews' e.g. in LANDSCHAP 34 (2); 2017

## Professional output

- articles in magazines (each project at least 1)
- newsletter 4 times/year
- brochures/poster (as dry heathlands)
- digital tools (as key' on soft lakes)





# OBN Knowledge *transfer*

## Website

- new format at the end of 2018
- separated English summaries

## Field symposia

- 16/Y – great diversity in themes
- 1 day – theory and practice (excursion)
- based on ‘new’ research and insights
  - e.g. ‘arable fields in heathlands’

## Active transfer

- symposia (e.g. NP Dwingelderveld/LIFE Noordenveld, 2015)
- management advices (e.g. bog-extension ‘Heidsche Peel’ 2017)



## Success factors the OBN network

- knowledge needs from practice and policy steer the program
- broad scientific base AND deeply rooted in practice
- quality assurance by independent scientists
- ecological restoration coupled with societal issues
  - nitrogen deposition (heathlands, bogs)
  - CO<sub>2</sub>-storage (bogs)
  - climate change/water storage (wet grasslands, brook valleys)





# Wins of OBN Knowledge network

## ■ Policymakers

- independant/recent/validated knowledge on measures to mitigate nitrogen deposition in N2000-areas (court!)
- realising policy goals N2000, WFD, GAP

## ■ Sitemanagers

- nature restoration N2000-areas, red list species
- cost efficiency management

## ■ Researchers

- **up-to-date** knowledge; exchange with other disciplines
- **budgets** for research and (a little bit for) publications





**Thanks for your attention**  
**(time left for questions?)**

