

Amsterdam Dunes Project, the Netherlands LIFE11 NAT/NL/776

A quick scan of the ecosystem services

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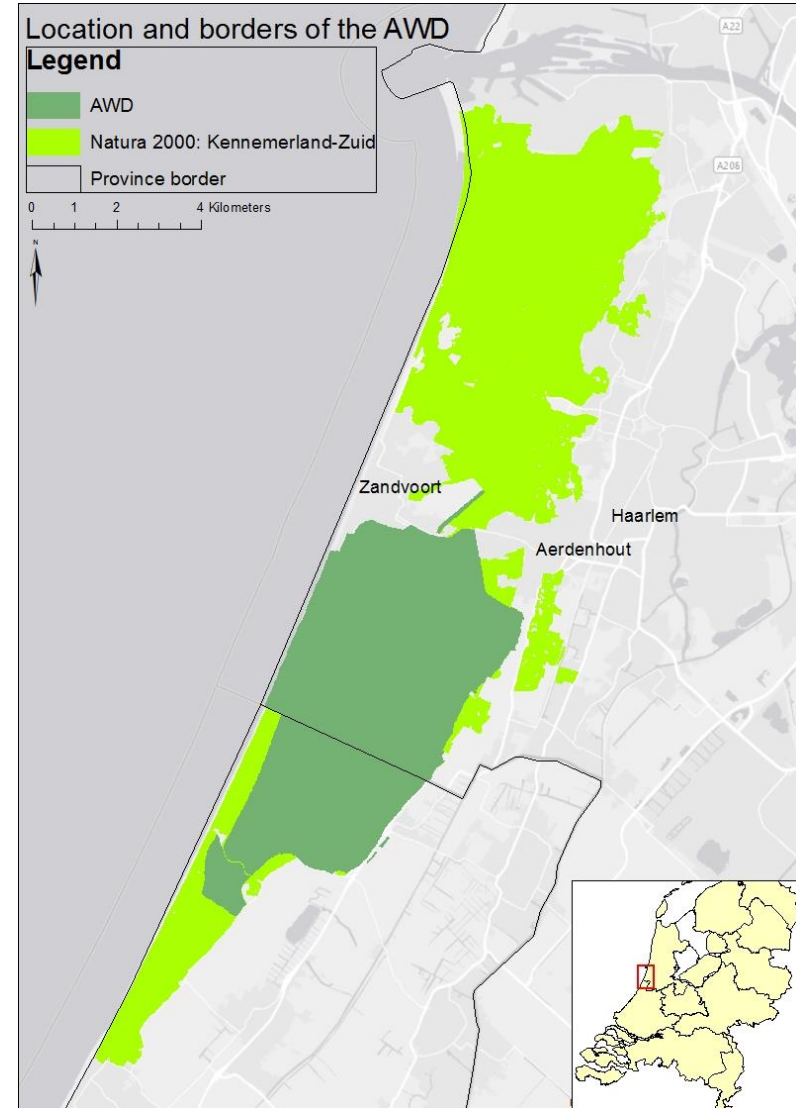


The Amsterdam Dune Project: where

- Natura 2000: 8.164 ha
- 3400 ha owned by Amsterdam
- 350 ha habitat restoration



Source: Waternet







Proposition Bsc study



- **Question:**

What are the main ecosystem services that the Amsterdam Dunes provides and how are they currently located/distributed throughout the area?

- **Goals:**

- Identification and describing of ecosystem services
- Mapping of the ecosystem services
- Costs and benefits

Focus with CICES system

provision

Cultural

Hout, vezels,
genetische bronnen

Groene
recreatie

Natuurlijk
erfgoed

Drinkwater



Kustbescherming

regulation &
maintenance

Five services:

- Drink water
- Raw materials
- Coastal protection
- Recreation
- Conservation

Method

- Literature study
- Interviews Waternet employees
- Exploration existing data

Steps per service:

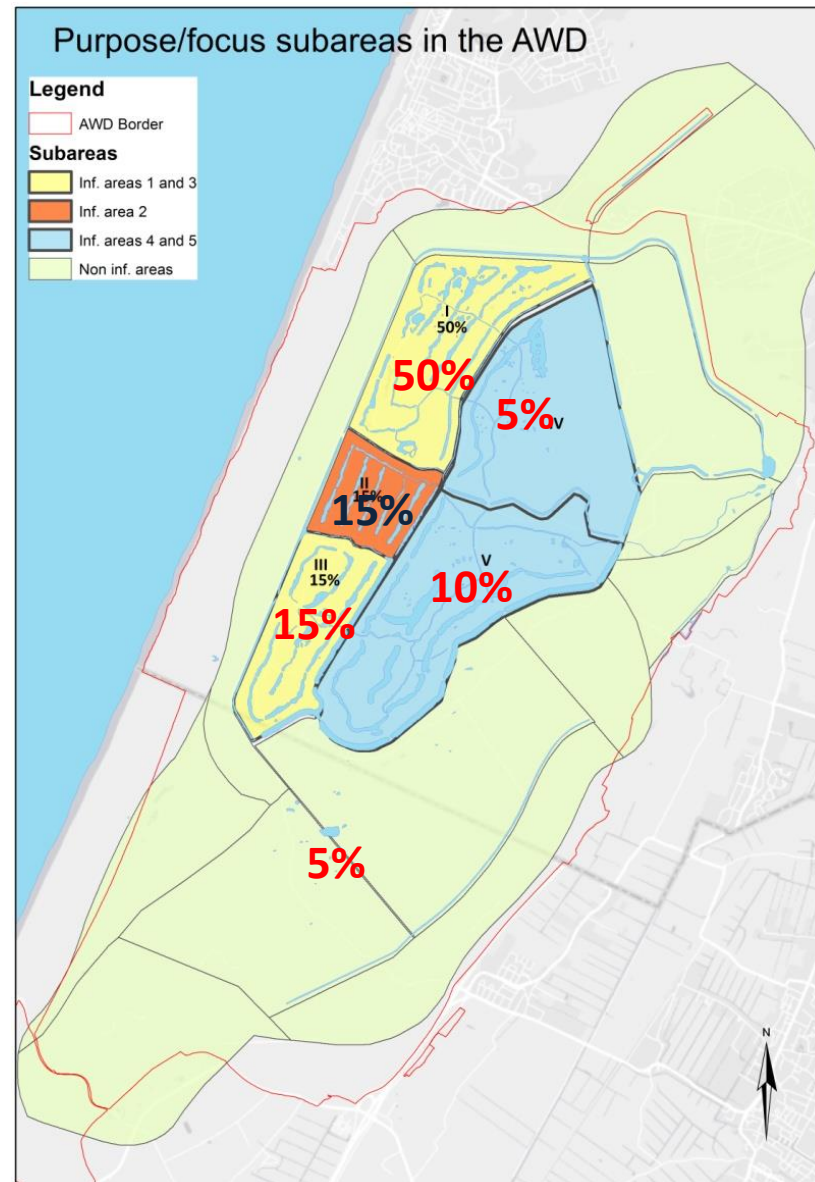
- Identification
- Mapping through ArcGIS
- Costs and benefits

Drinkwater extraction

- 65 million m³ of water/y
 - 55 Mm³ river water
 - 10 Mm³ dune water
- Five infiltration areas
- Added value of: €11,036,930.-

Additional aspects:

- Stock, mixing, temperature.



Raw materials/food

- N2000 area → no active logging
- Removal of biomass as a consequence of nature management
- Fallow deer (*Dama dama*) culling



- 2014: €2,734 income

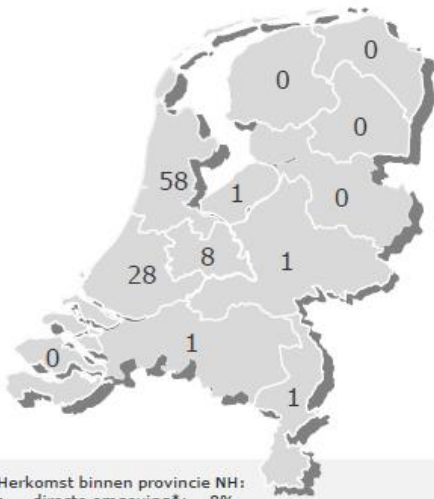
Coastal protection

- small part of primary barrier
- protecting surface of 224.200ha & 3.591.00 inhabitants
- Flooding damage €14.486 billion
- Risk 1/30,000 chance per year of failing
- Yearly value € 482,866



Recreation

- Access for hikers and horse riders
- 1 million visits per year
- 99% use four entrances with carparks

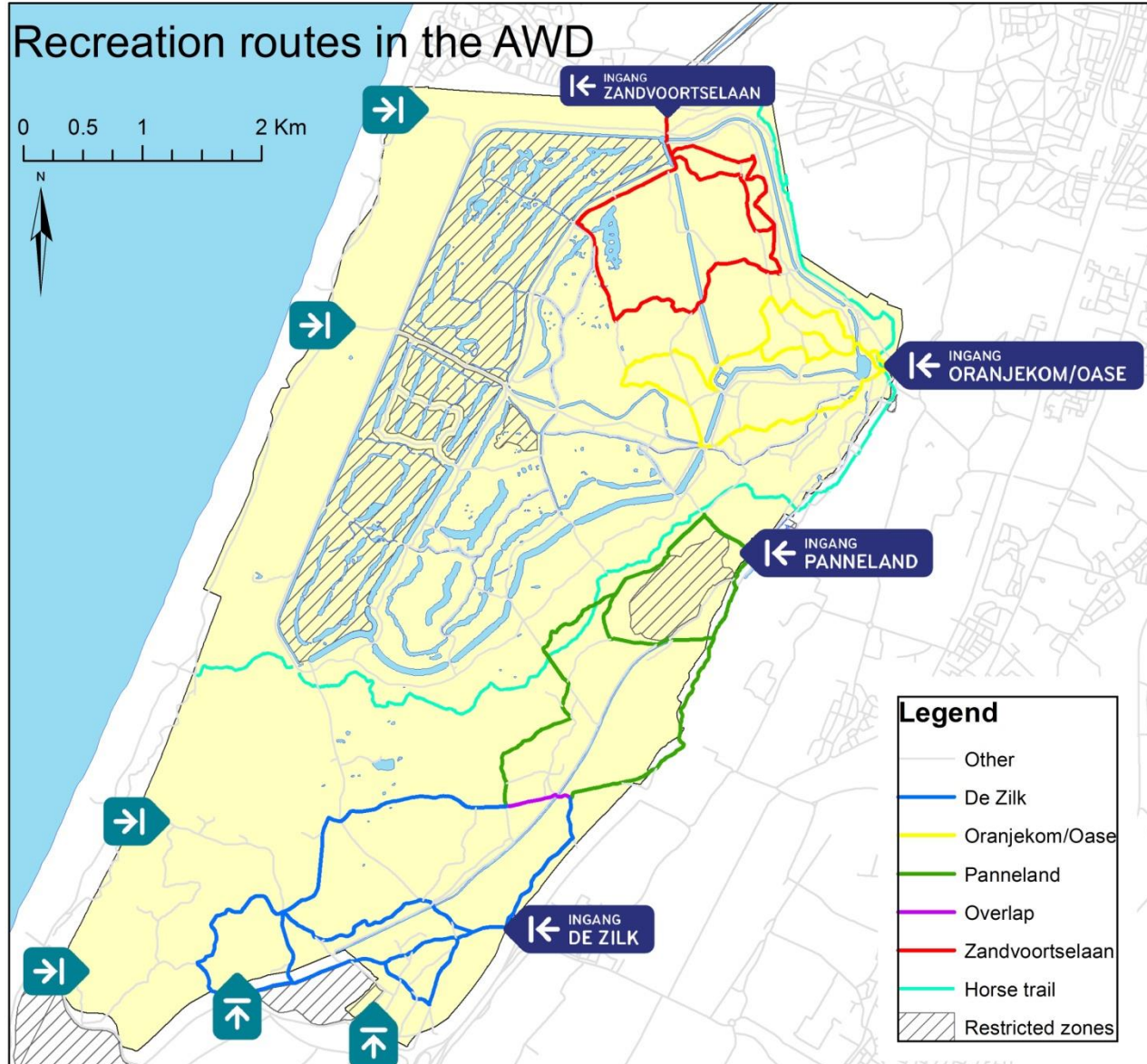


Herkomst binnen provincie NH:

- directe omgeving*: 8%
- overig provincie N-H: 92%

* Gemeente Zandvoort

Herkomst MRA regio: 55%

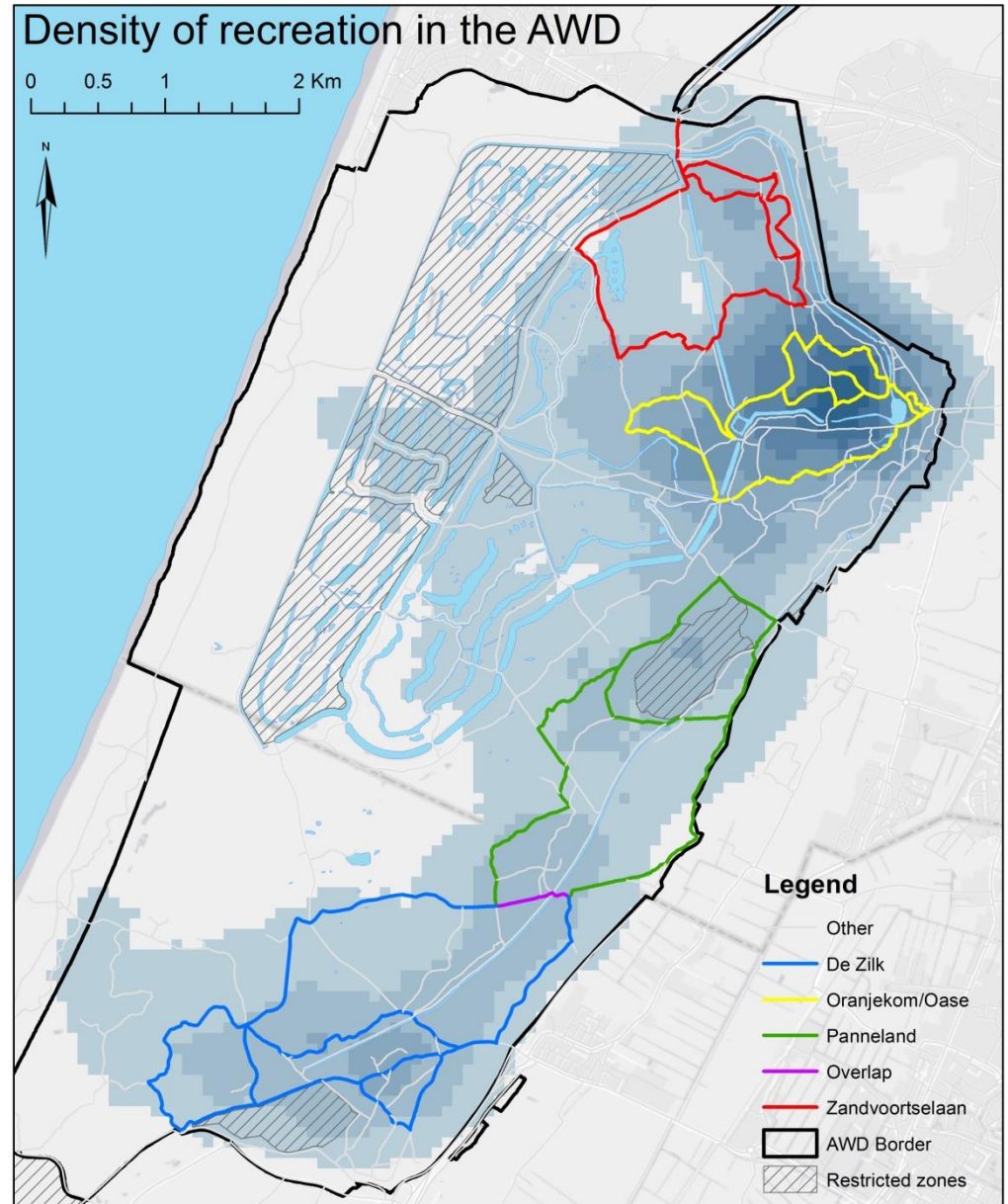


Recreation

- 90% of visitors on suggested routes
- GIS analysis : path density combined with recreation intensity

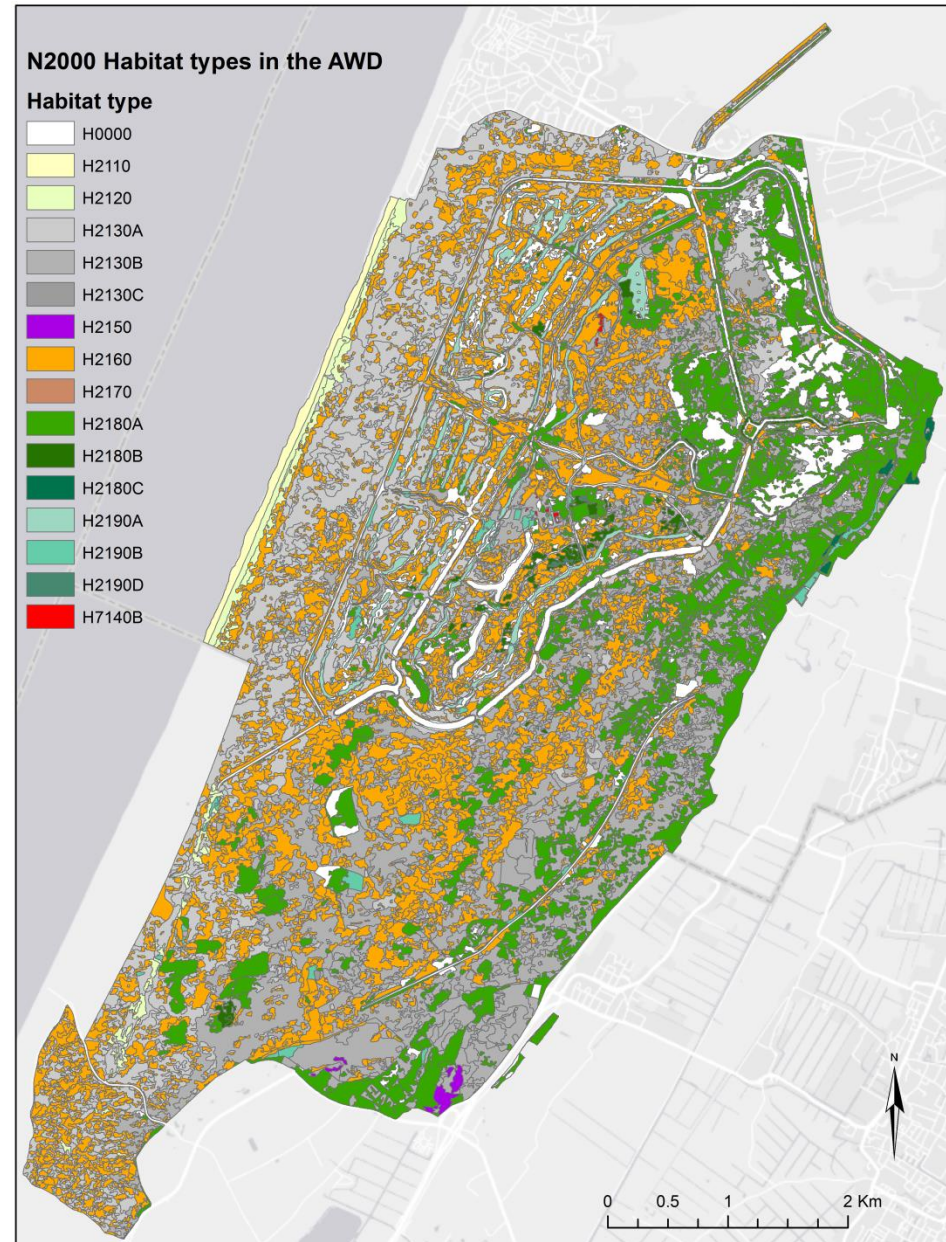
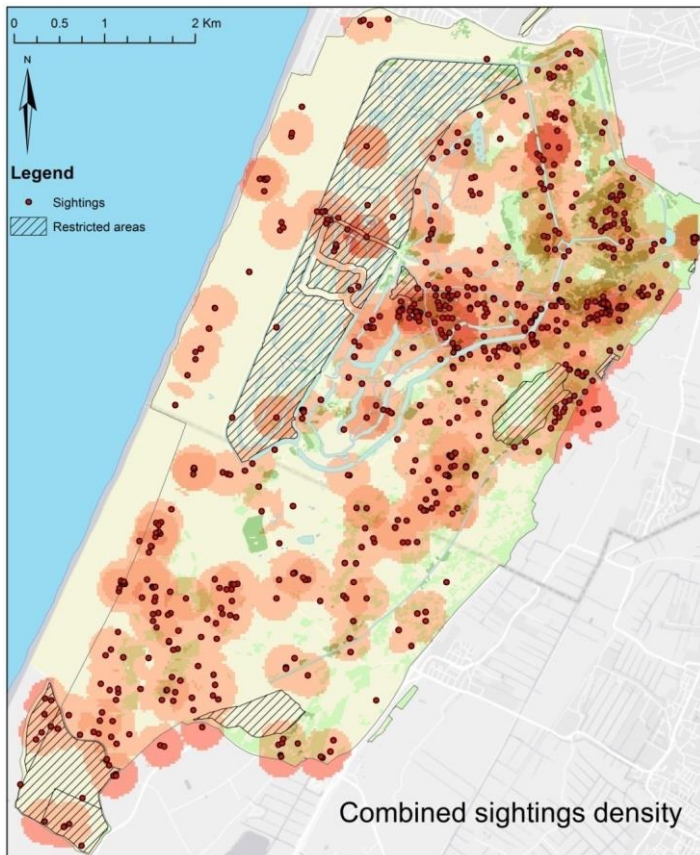
• Total income before costs:

- Access and parking fees € 517,450
- Sales visitor centre € 13,499
- Leases catering utilities € 65,592



Conservation

- Vegetation mapping : 2600 ha classified N2000 Habitat types
- 214 Red list species in NDFP database



Conclusion/Recommendations

- Unique situation : Drinking water protected by N2000 , nature management paid by consumers
- Unique situation : Recreation facilities paid for by parking & access fees

- | E.S. | Identified | Mapped | € Valued |
|--------------------|------------|--------|----------|
| Drink water | + | + | + |
| Raw materials | + | - | + |
| Coastal protection | + | + | +/- |
| Recreation | + | + | + |
| Conservation | + | + | - |

Conclusion/Recommendations

- Main ecosystem services identified but select number → more study for complete picture?
- Several overlaps in spatial distribution → further study to determine conflicts?
- Several economical evaluation methods → one way of evaluating?
- Value of N2000 is more than €