

		pollen zone	main pollen-analysis characteristics	archaeological period	Year	main first finds of seeds (S), wood (W) and carbon (C) in the Netherlands and Flanders	
Holocene	sub-Atlantic	beech numerous	increase in Scots pine	Modern period	2000	current S  hornbeam S, sweet cherry S, boxwood W, walnut S, W  sycamore maple W bog-rosemary S cranberry leaves  honeysuckle W  wild pear S yew W, juniper W old man's beard S, W, privet C blackberry S, heather leaves raspberry S field maple, ivy, alder buckthorn S elder S, holly, willow and mistletoe C ash, elm, spindle W, myrtle, bird cherry, common heather and dewberry S common buckthorn S blackthorn and common hawthorn S oak S common dogwood, crab apple, large-leaved lime, dog rose, guelder rose and black alder S  hazel, bittersweet S downy birch, silver birch S	
			major increase in rye	Middle Ages	1000		
			hornbeam constant, walnut present	Roman period	0		
			hornbeam incidental	Iron Age	1000		
	Sub-Boreal	beech appears	Bronze Age	2000			
	Atlantic	oak and alder important, lime and elm numerous, maximum extent of ivy, mistletoe and holly, Scots pine present	cereals and plantains, first agricultural crops in loess areas	New Stone Age	3000		
					4000		
	Boreal	Scots pine dominant, very few alder, lime, oak, elm and hazel present		Middle Stone Age	5000		
					6000		
	Pre-Boreal	Birch and Scots pine dominant, poplar important, hazel, oak etc. very low, blackcurrant present			7000		
				8000			
				9000			
				9700			

## Tijdschaal Holoceen

Start: 9700 y BCE = 11700y BP

BCE = Before Christ

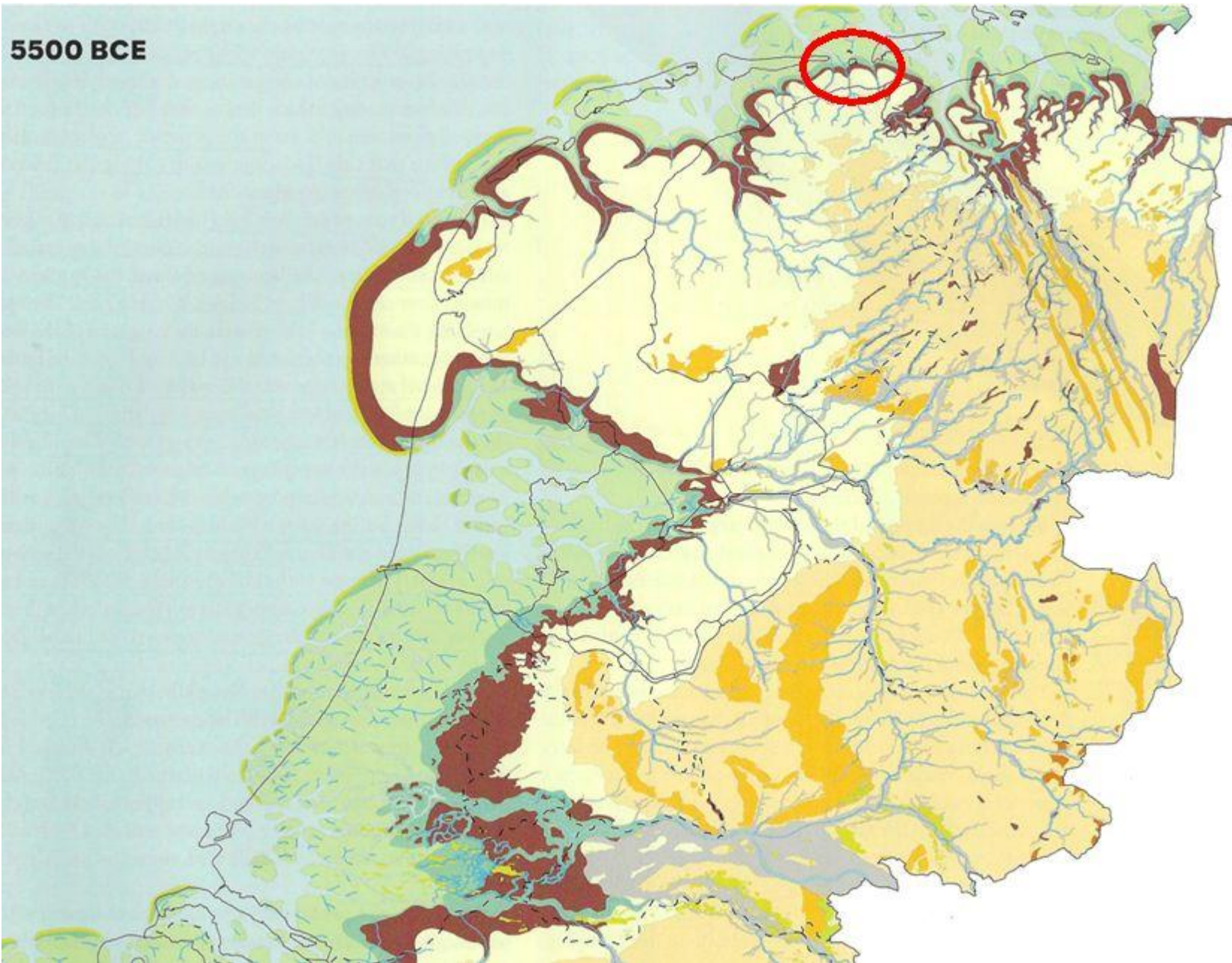
BP = Before Present = 1950

In Noord Nederland zijn er twee perioden van een regressie, dwz. het land wint het van de zeespiegelstijging en in het zoete water heb je in deze perioden veenvorming (moerassen met bomen en planten).

De basisveenlaag wordt gevormd in het Atlanticum (6000-3000 BC) en een tweede laag wordt gevormd rond 1500 BC (Subboreaale, Bronstijd).

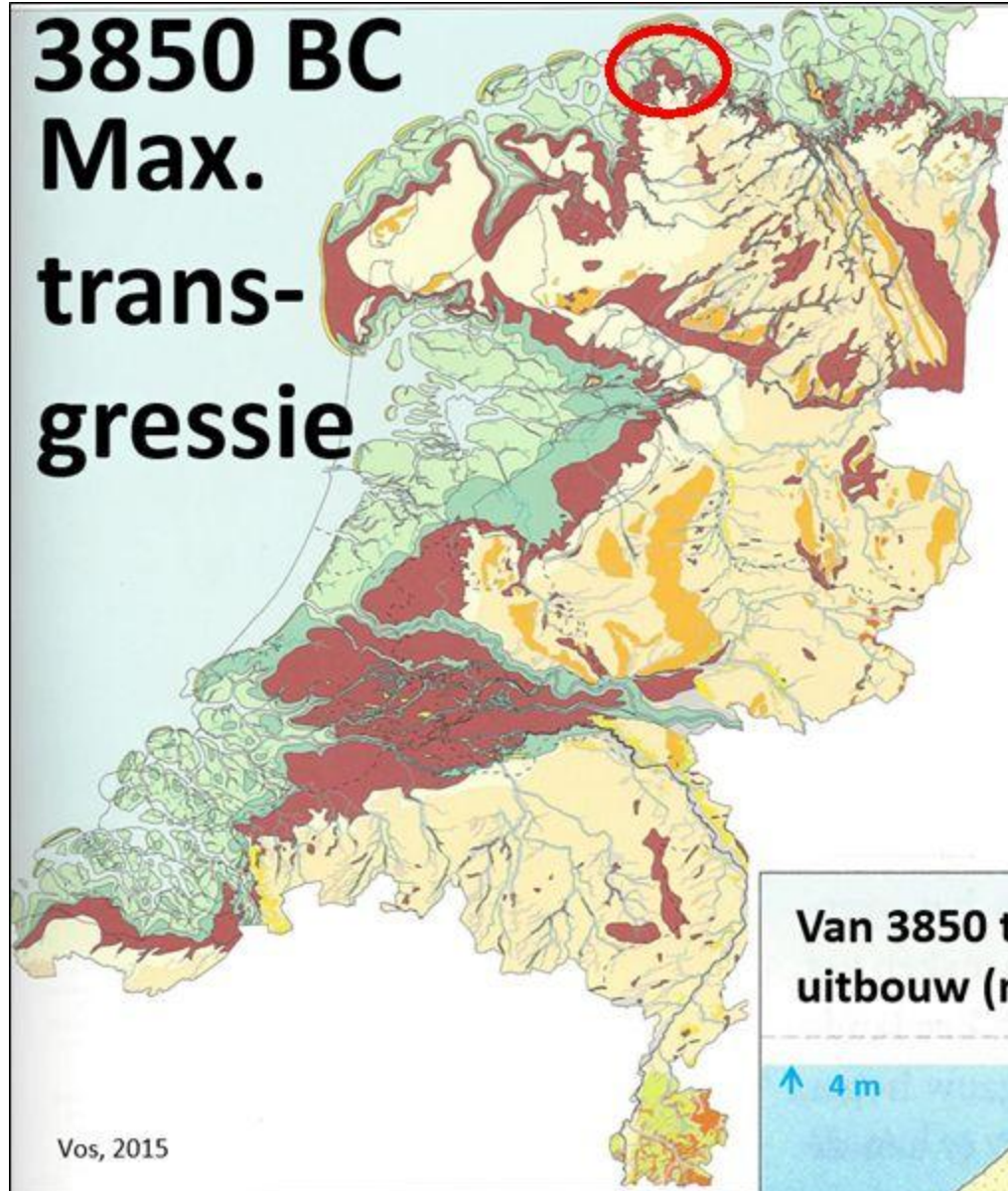
Uit: Atlas of the Holocene Netherlands; Landscape and Habitation since the last ice age; Peter Vos et al. 2020; Amsterdam University Press

5500 BCE



Veevorming langs de randen van het land in het Atlanticum, 5500 BCE.  
O.a. in de omgeving van Paesens Moddergat (rode cirkel).

# 3850 BC Max. trans- gressie



Vos, 2015

#### HOLOCENE LANDSCAPE

**Coastal Dunes**  
High dunes  
Low dunes and beach ridges  
Beach-plain and dune valleys  
**Land dunes**  
Sand-drift areas

#### Flooded areas

Intertidal areas: sand- and mudflats  
Fluvial flood plain and marine salt-marsh areas  
Salt-marsh levees and ridges: relatively high parts in the salt-marsh areas

#### Peat areas

Peat  
**Anthropogenic areas**  
Embanked / reclaimed areas  
Former lakes (dry land)  
Urban areas

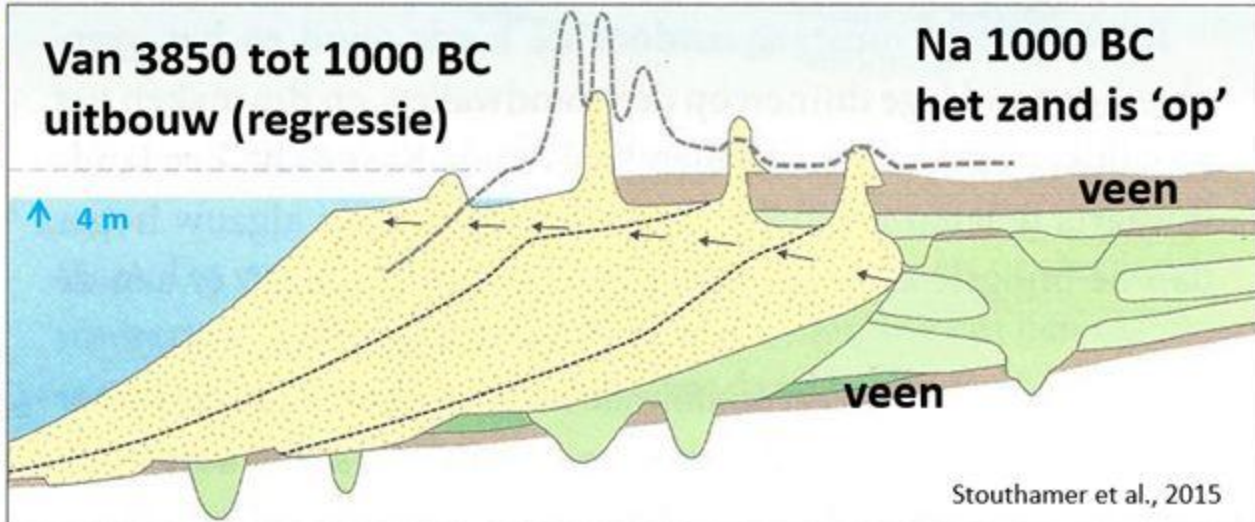
#### Permanently submerged

Inner water: main freshwater areas, channels and lakes  
Outer water: main and marine area, tidal channels or

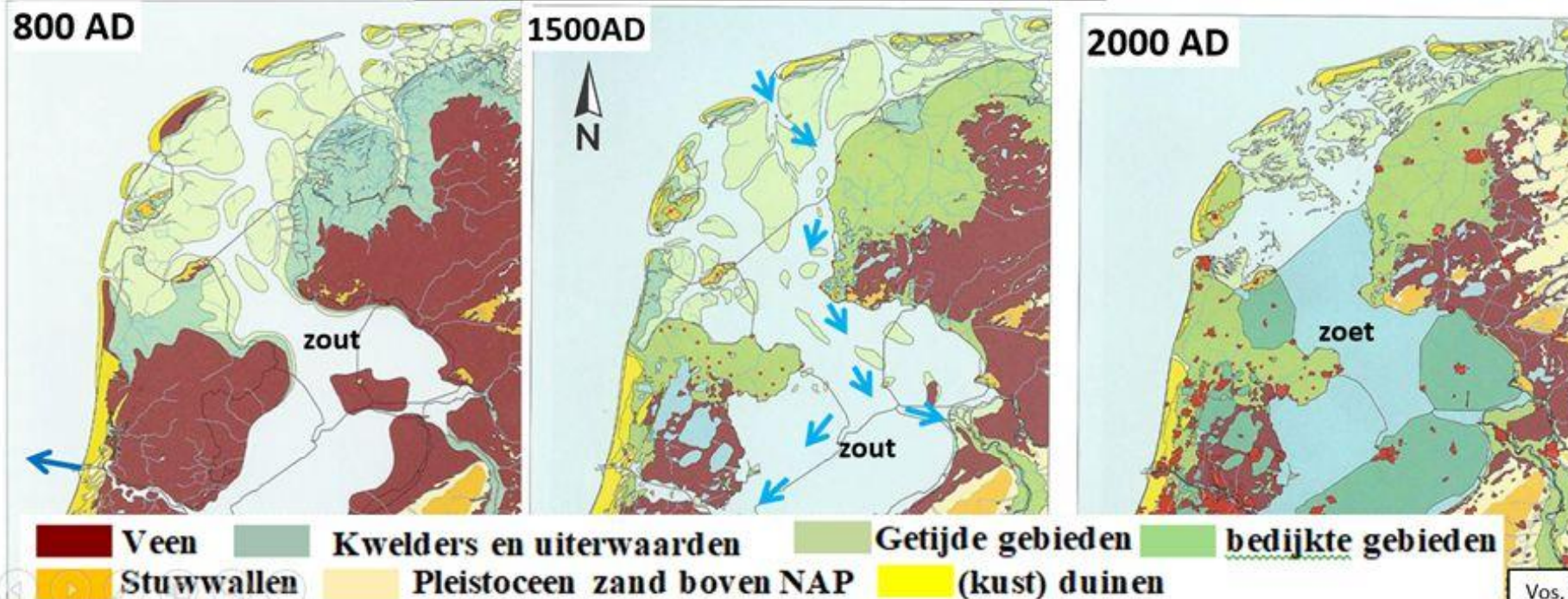
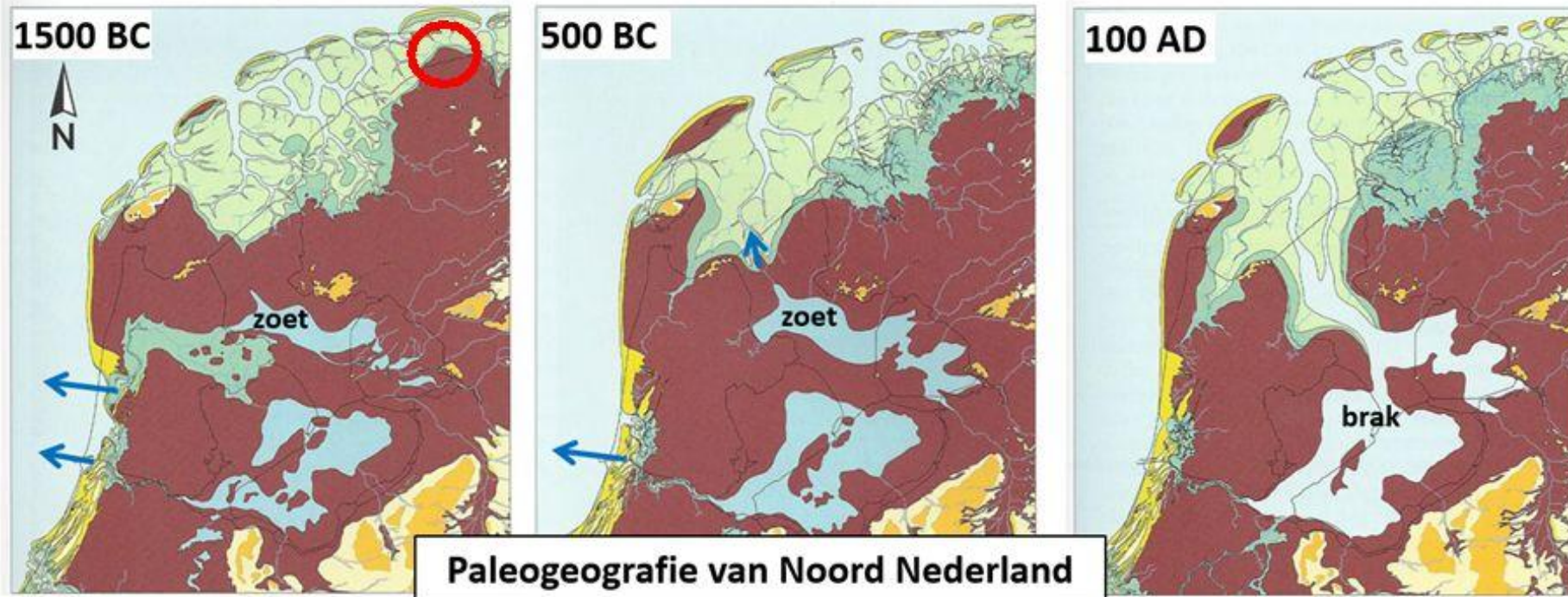
Ca 3850 BC was het landijs in Scandinavië en Noord Amerika verdwenen (gesmolten) en vanaf dat moment stijgt de zeespiegel beduidend langzamer; Nu is de sedimentaanvoer groter dan de zeespiegel stijging en de kust bouwt uit

Van 3850 tot 1000 BC  
uitbouw (regressie)

Na 1000 BC  
het zand is 'op'



Stouthamer et al., 2015



Zo zag (1500 BC – 1500 AD) en ziet (2000 AD) Noord Nederland er uit aan het oppervlak.

1500 BC lag er veen aan het oppervlak in de omgeving van Paesens-Moddergat. 500 BC was het bedekt geraakt met wad- en kwelderafzettingen