

Sea ingression dynamics and occupation patterns in the Dutch coastal area during the first millennium AD

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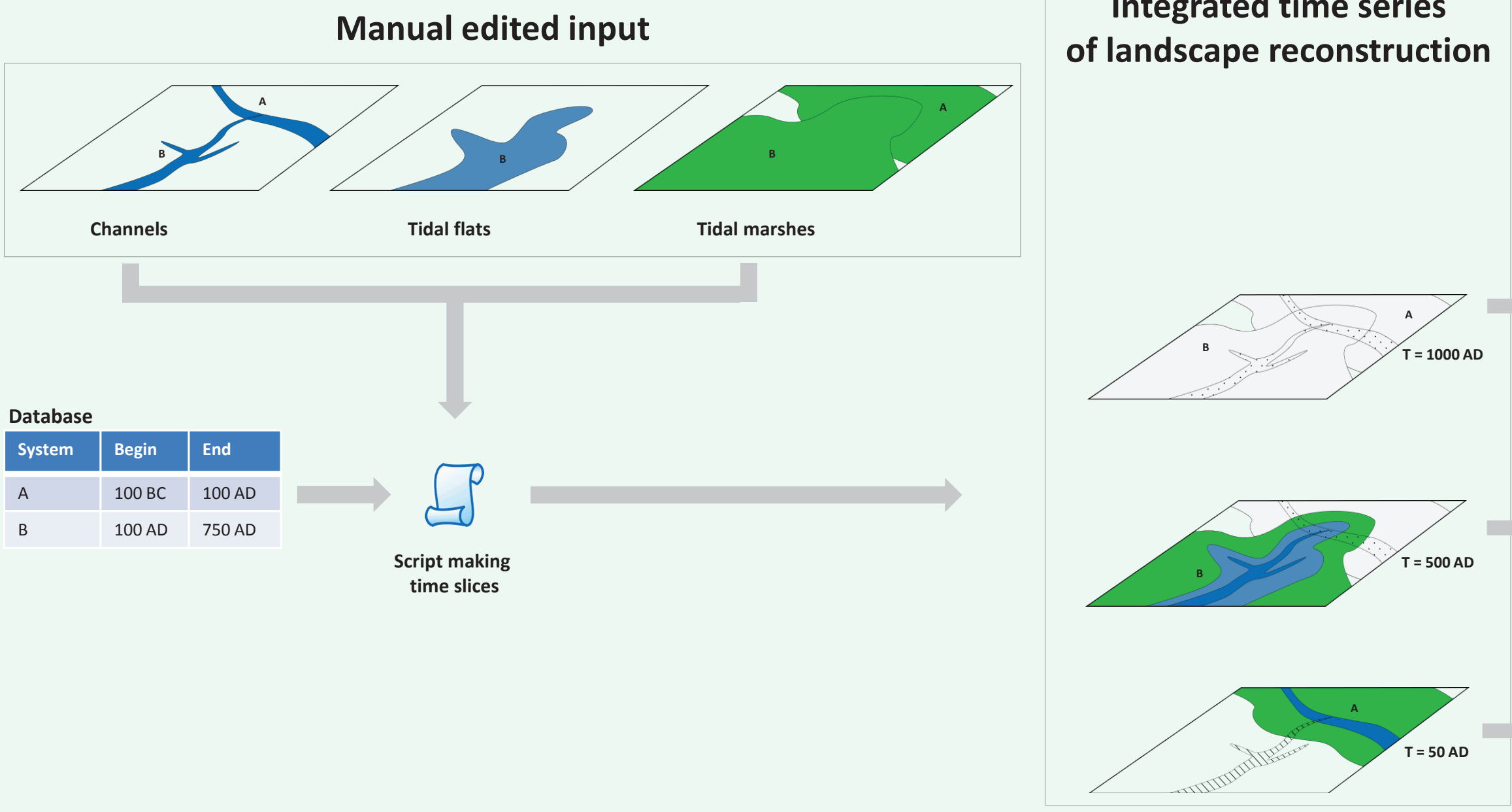
In many parts of the Netherlands the transition from the Roman period (RP) to the Early Middle Ages (EMA) coincided with declining population. This contribution explores landscape dynamics of the Dutch coastal area in the first millennium AD and its possible influences on occupation patterns. To achieve this, we developed a GIS containing geological-geomorphological elements from tidal systems (channels, tidal flats and salt marshes). Knowledge on the geological development of the tidal systems is documented in the GIS allowing mapping of coastal evolution. By comparing these coastal-evolution maps with archaeological data, interaction between landscape changes and settlements can be hypothesized.

At the onset of the Early Middle Ages, first results suggest silting up of tidal inlets along the Dutch coast coinciding with an increased settlement density in the waning tidal areas. Meanwhile, large-scale extension of tidal systems at the expense of habitable land occurred in the SW part of the Netherlands. Adversely, at the end of the Early Middle Ages the SW part of the Netherlands silted up and some large sea ingressions took place in the northern part of the Netherlands. In both of these regions the current archaeological data does not yet reveal a clear pattern.

Methods

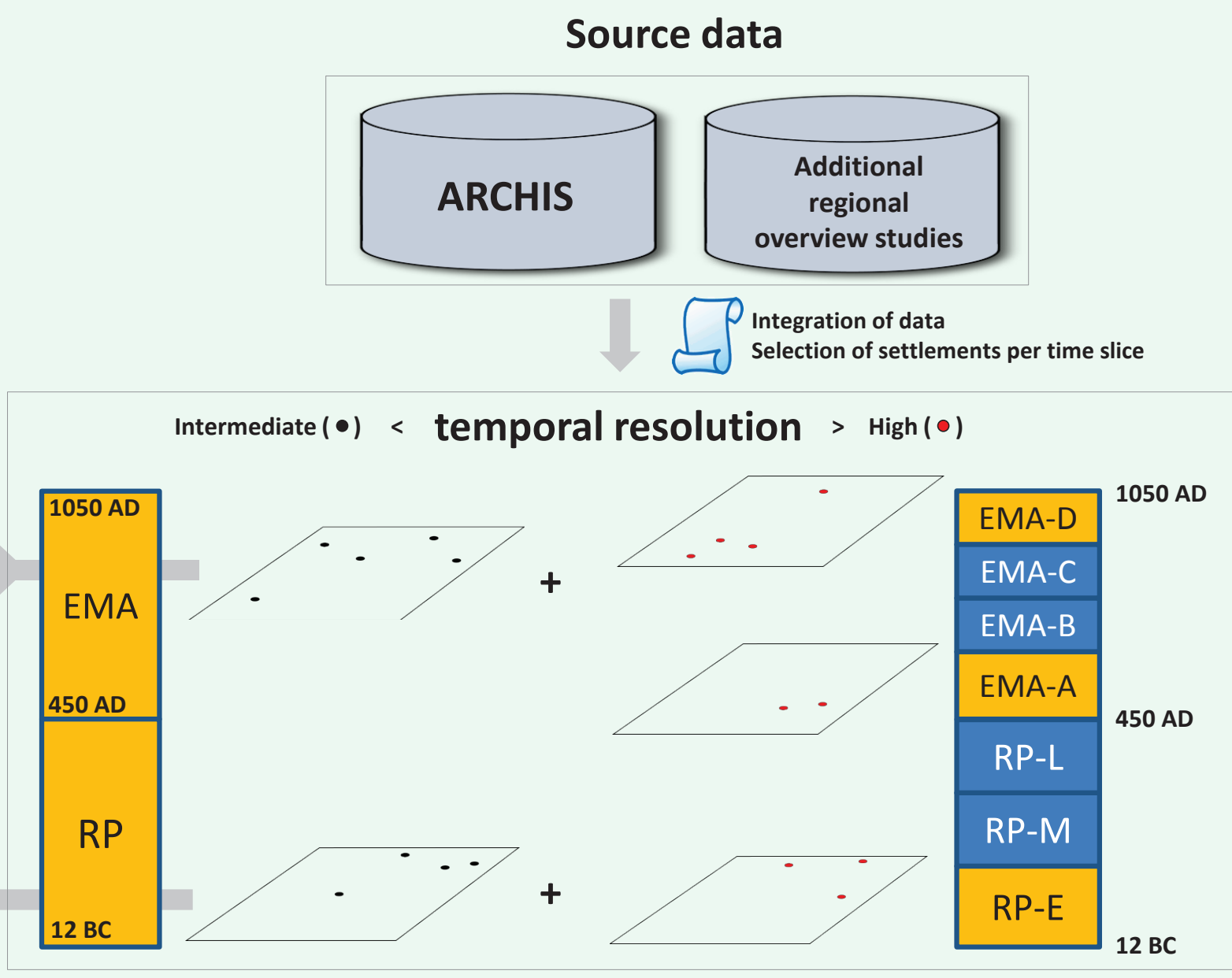
Landscape reconstruction

COASTAL REGION



GIS and database development (Pierik)

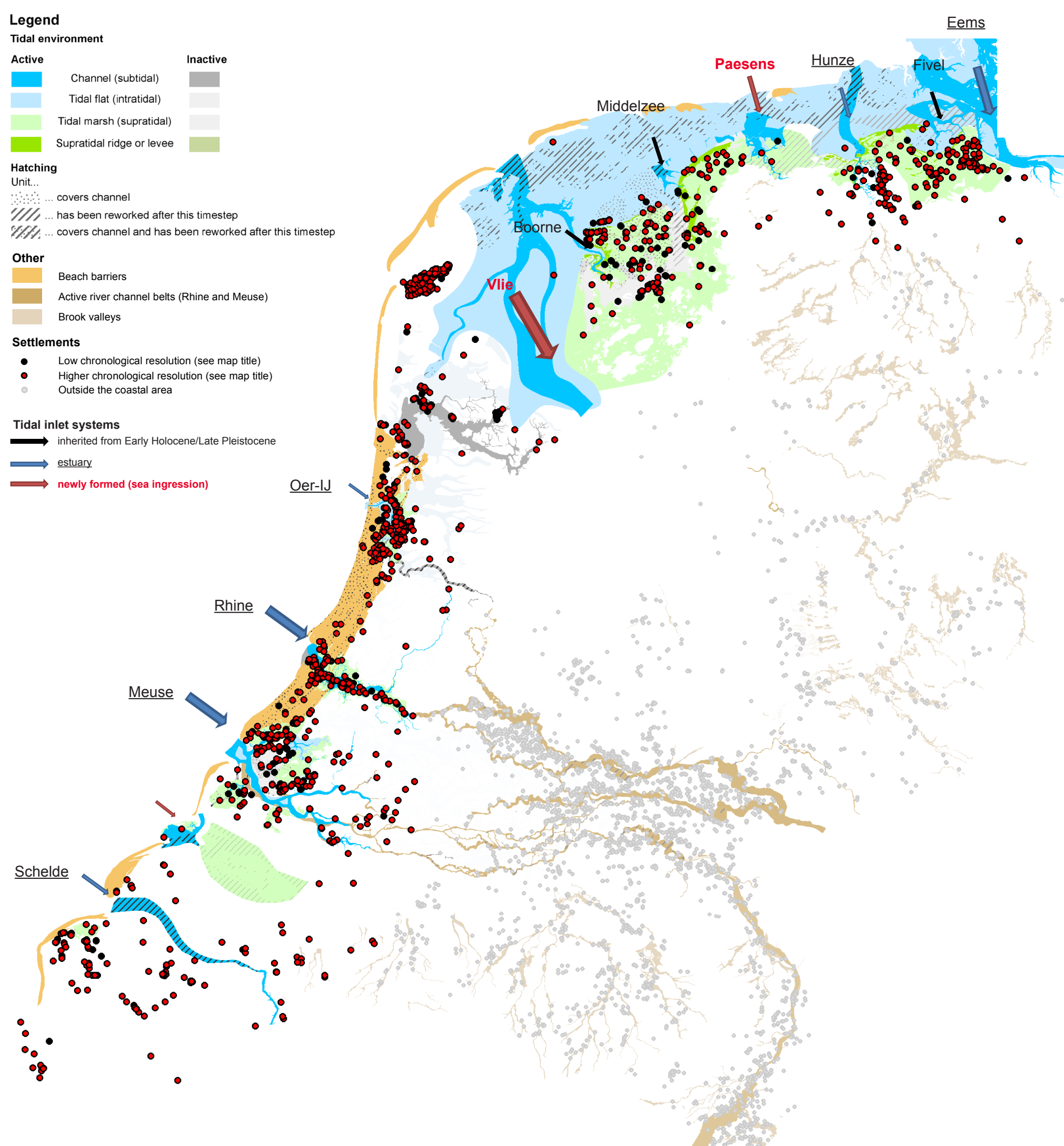
Archaeological settlements



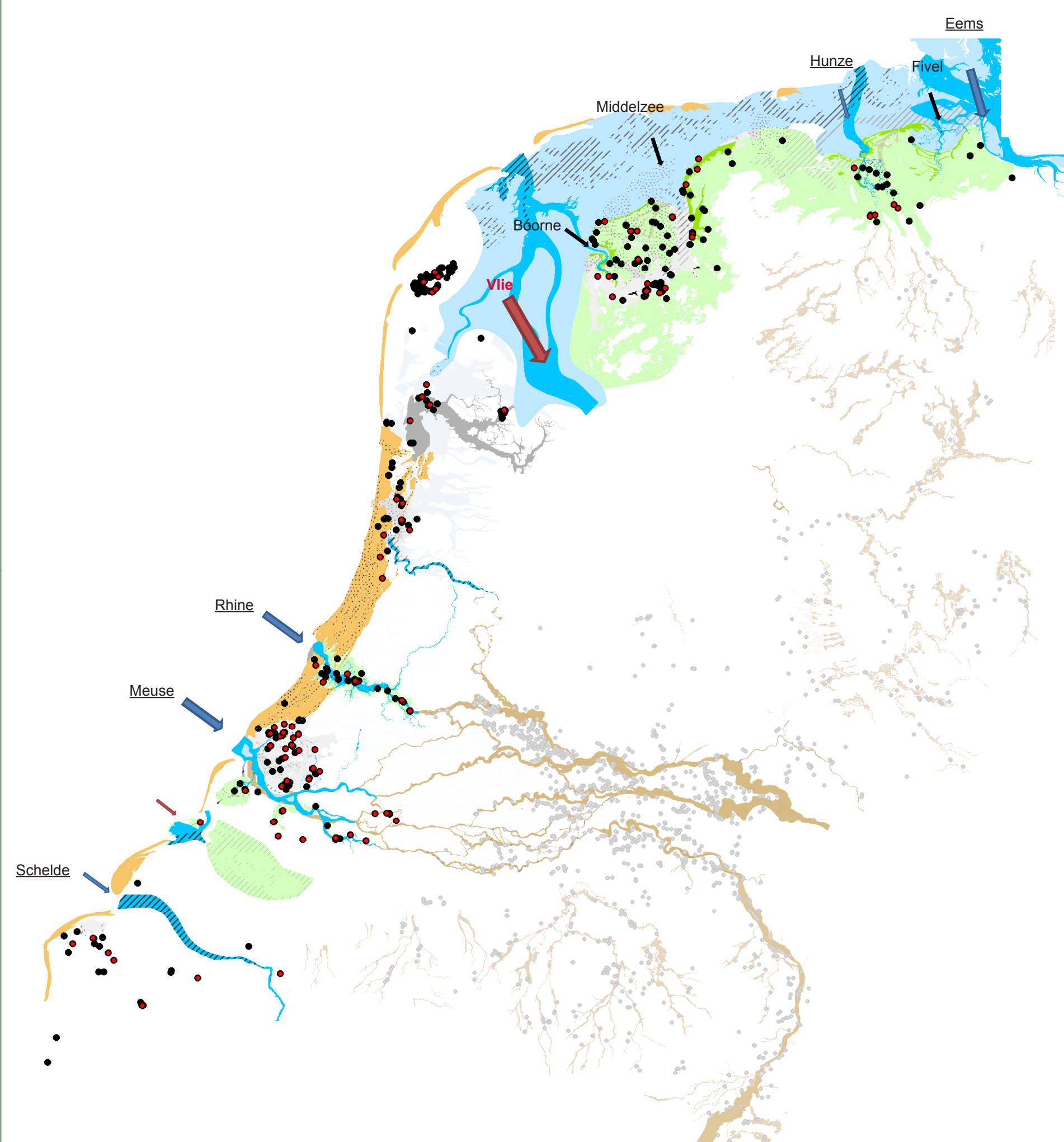
Database development (Van Lanen)

Results

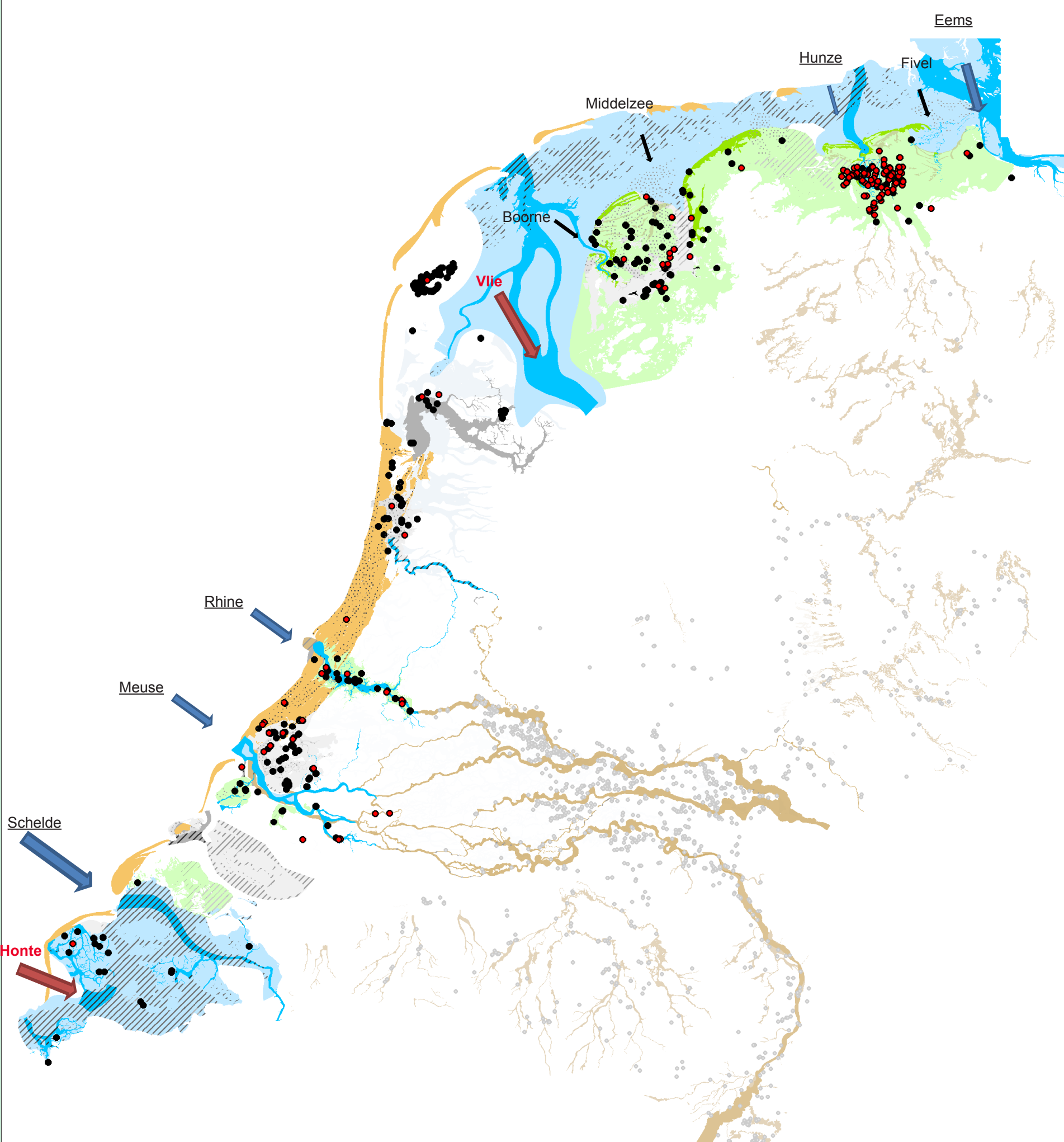
Palaeogeography: 80 BC
Settlements: Red: 12 BC - 70 AD / Black: 12 BC - 450 AD



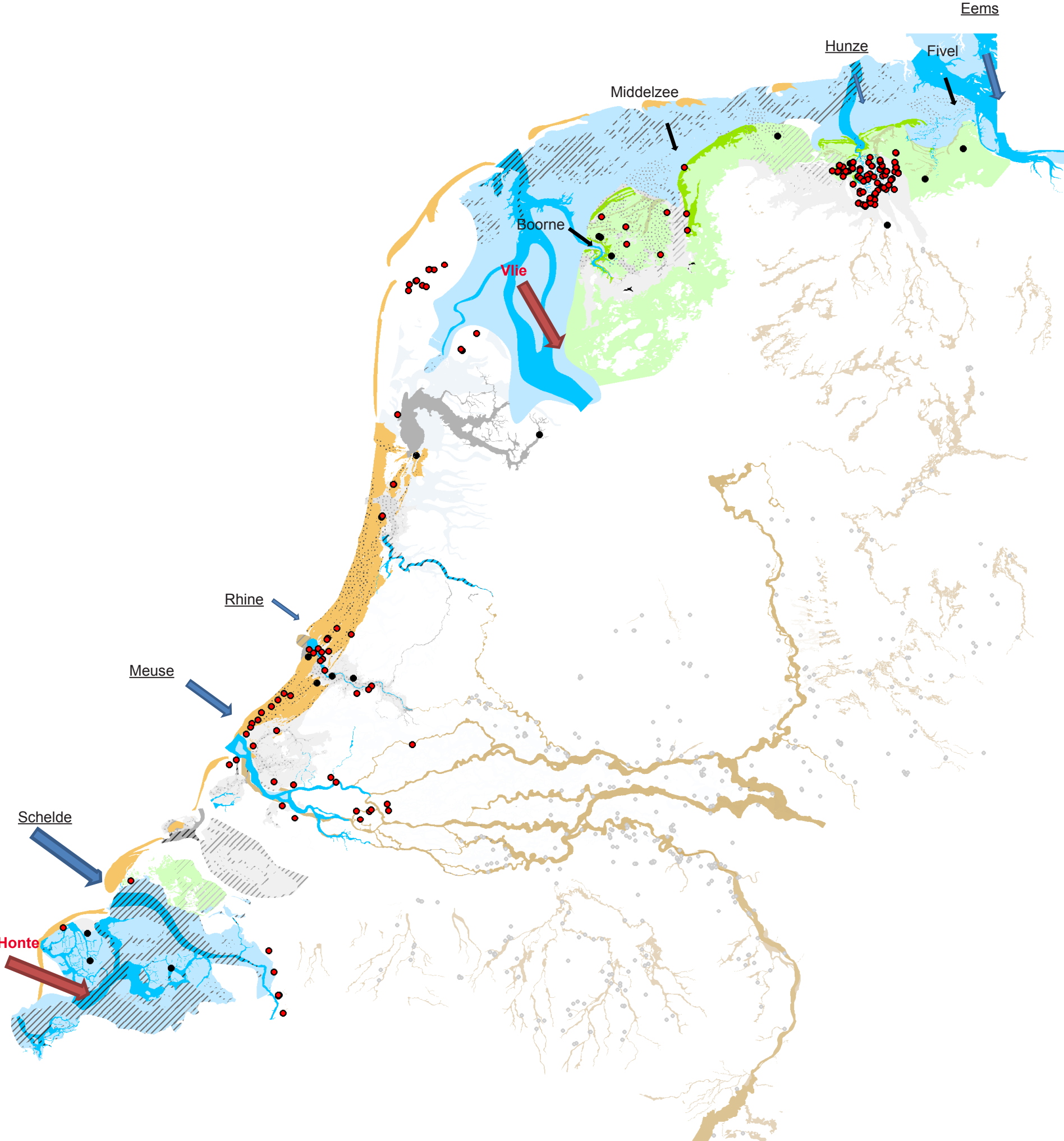
Palaeogeography: 110 AD
Settlements: Red: 70 - 270 AD / Black: 12 BC - 450 AD



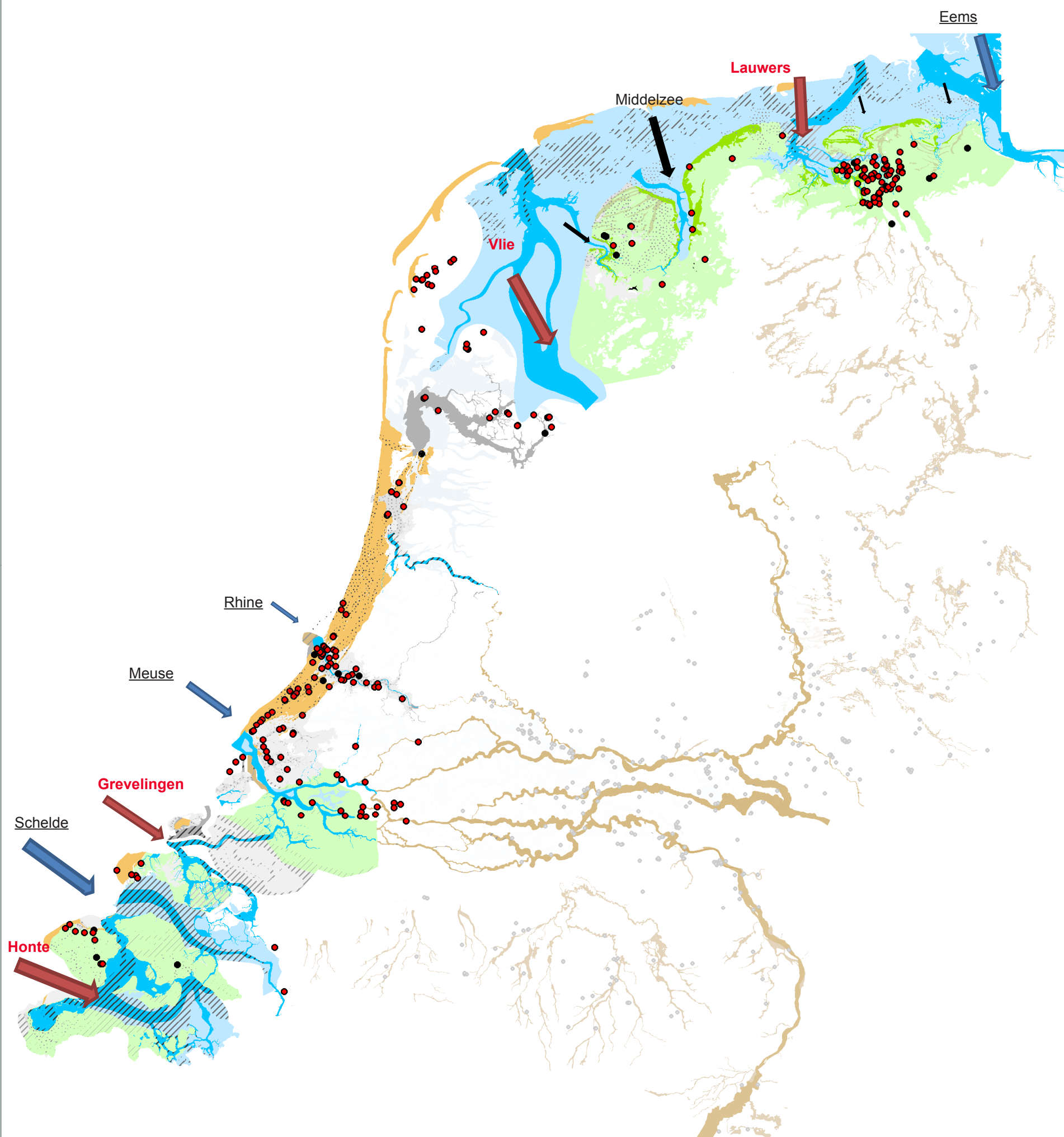
Palaeogeography: 285 AD
Settlements: Red: 270 - 450 AD / Black: 12 BC - 450 AD



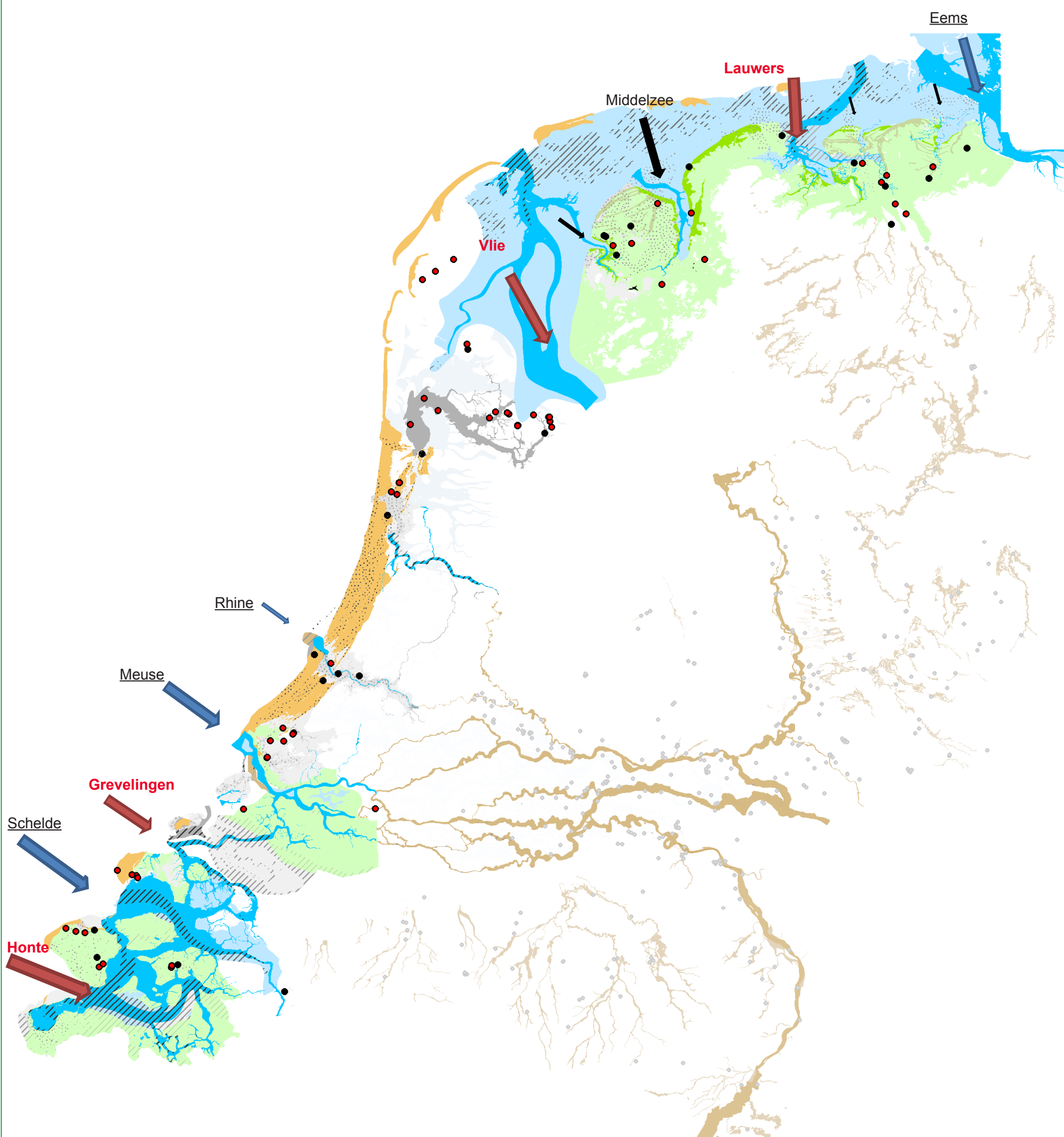
Palaeogeography: 550 AD
Settlements: Red: 525 - 725 AD / Black: 450 - 1050 AD



Palaeogeography: 885 AD
Settlements: Red: 725 - 900 AD / Black: 450 - 1050 AD



Palaeogeography: 1050 AD
Settlements: Red: 900 - 1050 AD / Black: 450 - 1050 AD



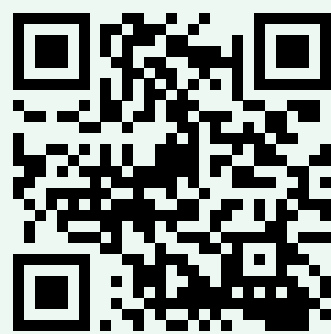
Conclusions

Period	Region	Landscape	Settlements
Roman Age	North	Small tidal systems silting up	Severe settlement decline in LRP
	West	Tidal systems silting up	Settlement concentration in silting up / silted up tidal areas
	South	Large scale extension of the tidal area (S-Zeeland)	Severe settlement decline in LRP
Early Middle Ages	North	Small tidal systems silting up and extension of 2 major tidal systems	Sparse data
	West	Last tidal system (Rhine estuary) silting up	Settlement concentration in silting up / silted up tidal areas
	South	Large scale extension tidal area (N-Zeeland) / tidal flats silt up to become marshes (S-Zeeland)	Minor settlement increase

Additional information:



Project website



Poster pdf



References



Universiteit Utrecht



Netherlands Organisation for Scientific Research



Cultural Heritage Agency of the Netherlands
Ministry of Education, Culture and Science



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