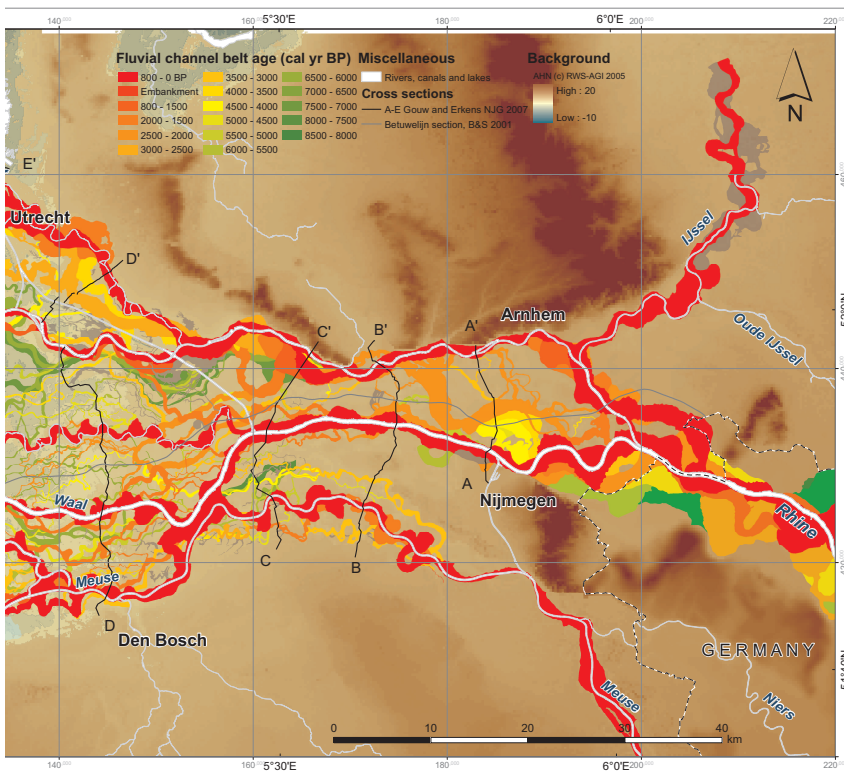


New results from the Upper Rhine-Meuse delta

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Fig. 1 Holocene Rhine-Meuse delta (Berendsen & Stouthamer 2001, updated)



New data

The 2001 'Berendsen & Stouthamer' map of the Rhine-Meuse delta (Fig. 1) is the reference map for channel belt age in the Netherlands. Research projects over the last decade have added new data. In the eastern Netherlands this comprises:

1. Five SN cross-sections including time lines (Gouw & Erkens, 2007 NJG)
2. History of sediment delivery to the Holocene delta (PhD thesis Erkens)
3. Mapping and dating Rhine deposition in the Gelderse IJssel valley (Cohen)
4. Late Glacial/Holocene landscape change in the Oude IJssel- and Niers-valley (Hoek)

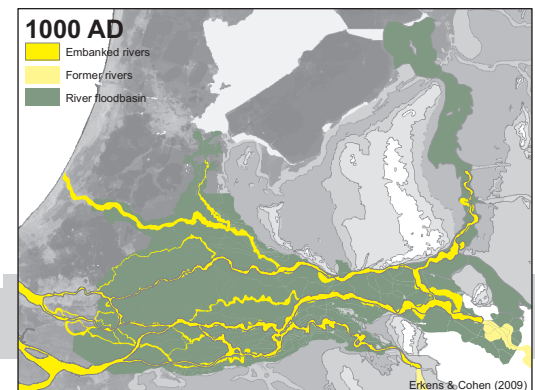


Fig. 3 Palaeogeography 1000 BC - 1000 AD

Roman-age arrival of Bronze age sediment

Upstream of section A-A' in Fig. 1 the delta doubled in size between 1000 BC and 1000 AD. Analysis of stored amounts of fine-clastic deposits reveals the delta to receive increased amounts of sediment, especially since Roman times (last 2000 years; Fig. 2).

This is due to deforestation in Germany, which was widespread during Bronze and Iron age times. Along the Rhine trunk valley (e.g. the Upper Rhine Graben) the sedimentation increase is also registered but started ~1000 years earlier - indicating a lag time in sediment arrival.

Most of the excess sediment was trapped in the upper delta. Around 500 AD this allowed for avulsion of the Gelderse IJssel, which greatly expanded the area of Rhine floodbasin deposition and changed flooding frequencies in the lower delta (Fig. 3).

Fig. 2 Holocene delta growth and deposition history (Erkens & Cohen, *in prep.*)

