# Rhine-Meuse delta studies

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# Westward extension of Rhine-Meuse delta maps

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## New data

The 2001 'Berendsen & Stouthamer' map of the Rhine-Meuse delta is *the* reference map for channel belt age in the Netherlands. Research projects over the last decade have added new data, improving our insight in development of the natural environment.

We are now updating the map (2009-2010). The covered area (Fig. 1) has extended:

1. Westward to the North Sea barrier coast (PhD thesis Hijma; Rotterdam-Leiden)
2. Northward to the Zuiderzee lagoon (PhD thesis Bos; Utrechtse Vecht).

Incorporating the new results in overview maps occurs synchronised with activities at Deltares | Geol. Survey of the Netherlands.

Improved resolution has allowed to detail the palaeogeography of the Early, Middle and Late Holocene landscapes in the western Netherlands. Coastal, lagoonal and river landscape reconstruction finally is connected!

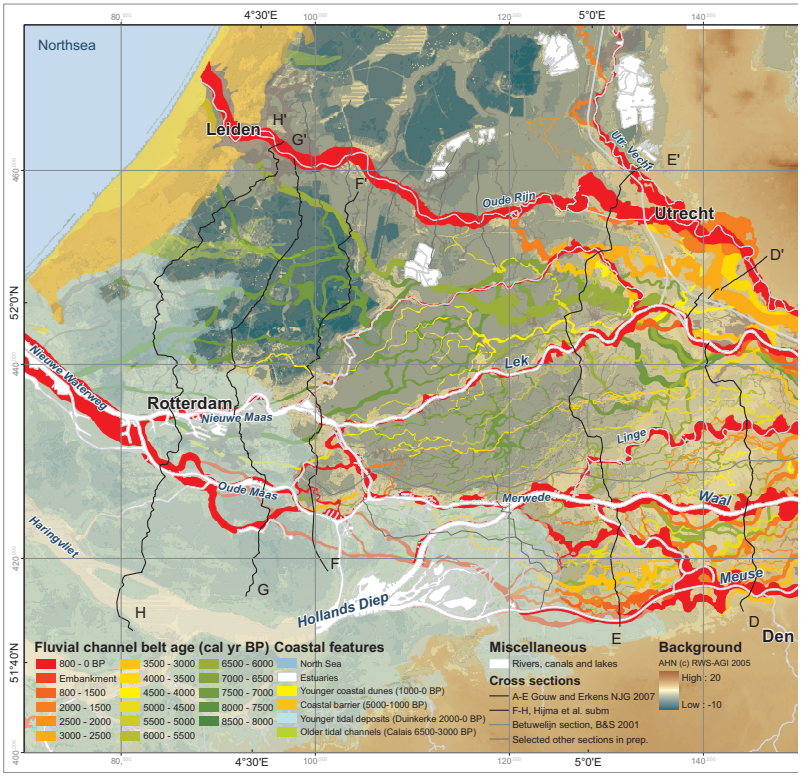


Fig. 1. Holocene Rhine-Meuse delta
GIS-based geological-geomorphological map
after Berendsen & Stotuhamer (2001, *updated, extended*)
Updated version expected in print 2009-2010

## Rotterdam transgression 9000 - 6000 cal yr BP

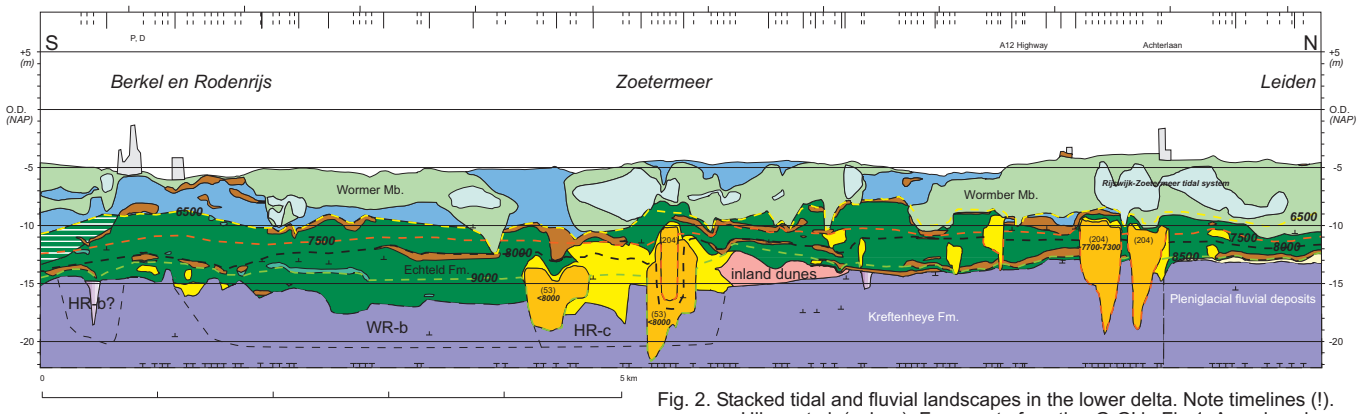


Fig. 2. Stacked tidal and fluvial landscapes in the lower delta. Note timelines (!).
Hijma et al. (subm.). Fragment of section G-G' in Fig.1. Ages in cal yr.

Mapping the deeper Holocene stratigraphy of Rotterdam and surroundings is being completed. Below well-known tidal-lagoon deposits of late Atlantic times (Wormer Mb., so-called Calais-transgressions) lay excessive amounts of fresh water deltaic deposits by the early Atlantic Rhine (Echteld Fm.), marking rapid initial transgression. They bury Rhine channel belts of earliest Holocene age and neighbouring terraces (Kreftenheye Fm.).

New radiocarbon and OSL dating from the area pushed relative sea level rise curves for the area back in time and revealed part of the buried valley-flanking inland dunes ('donken') in this area to be of boreal rather than late glacial age.