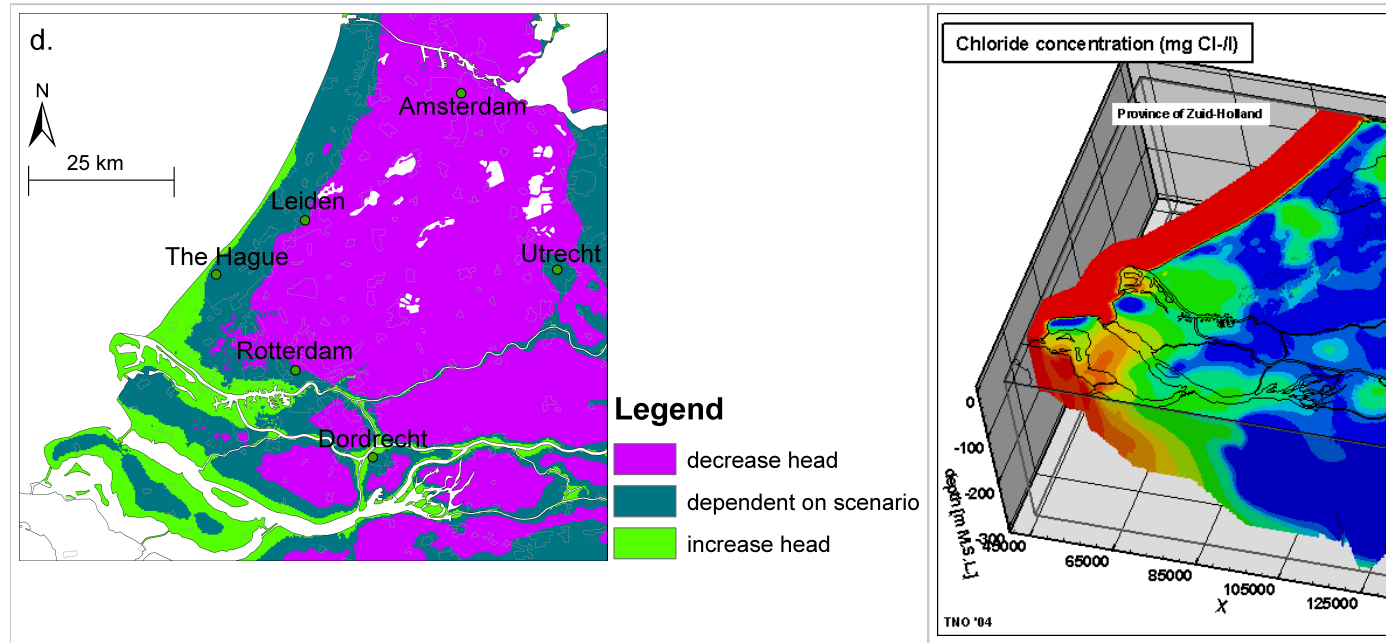


Fresh-saline study Zuid-Holland

Research on salinisation processes in the Province of Zuid-Holland

Large parts of the Province Zuid-Holland, the Netherlands, are situated several metres below mean sea level. Saline groundwater from the North Sea and from deep marine fine-grained deposits intrudes the upper aquifers. Natural processes and anthropogenic events of land surface settling, that have been going on for nearly a millennium, cause the salinisation of the subsoil. In addition, future sea level rise and land subsidence are expected to jeopardise the groundwater system even more. Water managers are concerned about the future state of this dynamic groundwater system during the coming 100 years. A 3-dimensional model was constructed to quantify changes in the groundwater system. The model predicts that past land subsidence and sea level rise lead to an accelerated inflow of saline groundwater towards the coastal groundwater system in the next centuries.



Article: Oude Essink, G.H.P., E.S. van Baaren, and P.G.B. de Louw 2010, Effects of climate change on coastal groundwater systems: A modeling study in the Netherlands, *Water Resour. Res.*, 46, W00F04, doi:10.1029/2009WR008719

Presentation: Oude Essink GHP, Van Baaren ES, De Louw PGB, 2010, Effects climate change on coastal groundwater systems, focus on the Rhine Delta, *Proceedings Deltas in Times of Climate Change*, Rotterdam, The Netherlands, Sept-Oct. 2010