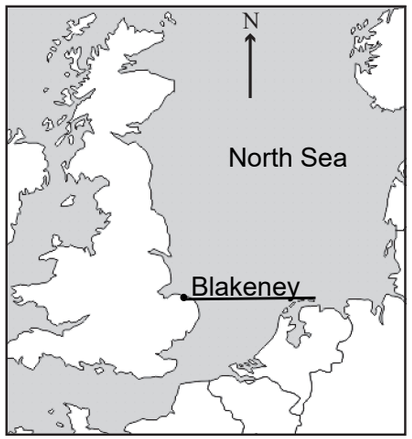
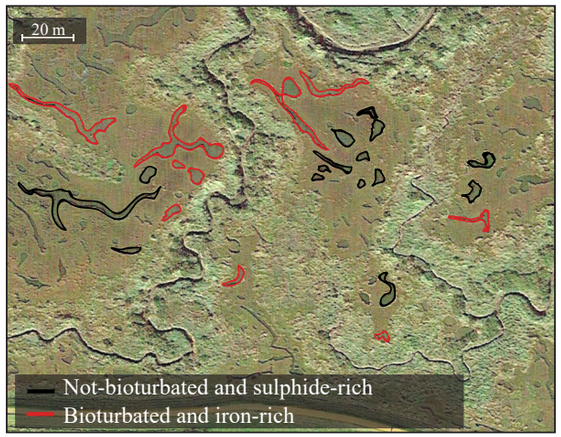
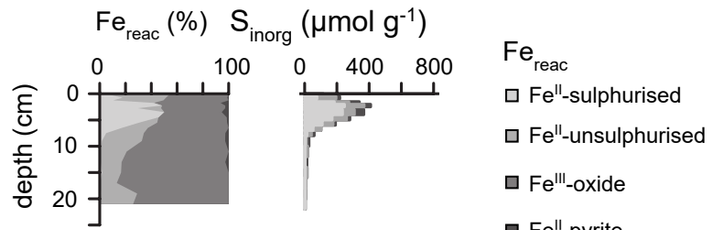
Ponds of Blakeney salt marsh shows a clear **dichotomy in sediment redox chemistry**



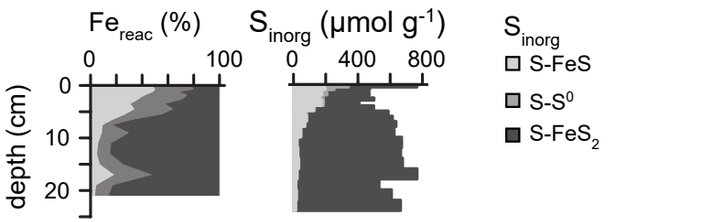


Type 1: **bioturbated** and dominated by **oxidised iron minerals**
Type 2: **not-bioturbated** and dominated by **reduced sulphur minerals**

Bioturbated and iron-rich



Not-bioturbated and sulphide-rich



Burrowing fauna mediate alternative stable states in the redox cycling of salt marsh sediments

van de Velde et al. (2020)
Geochim. Cosmochim. Acta 276, 31–49.
doi:10.1016/j.gca.2020.02.021

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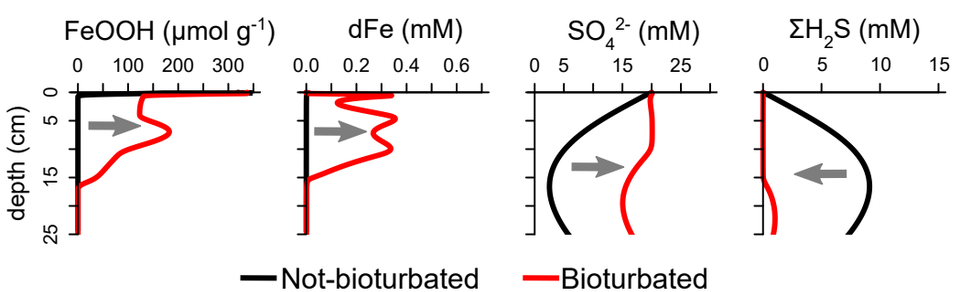
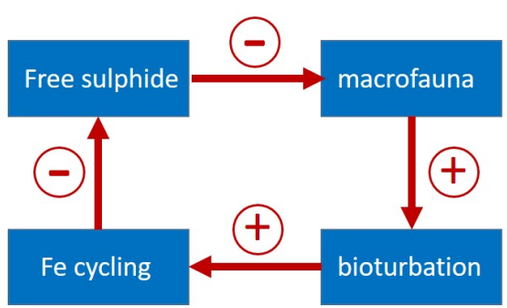
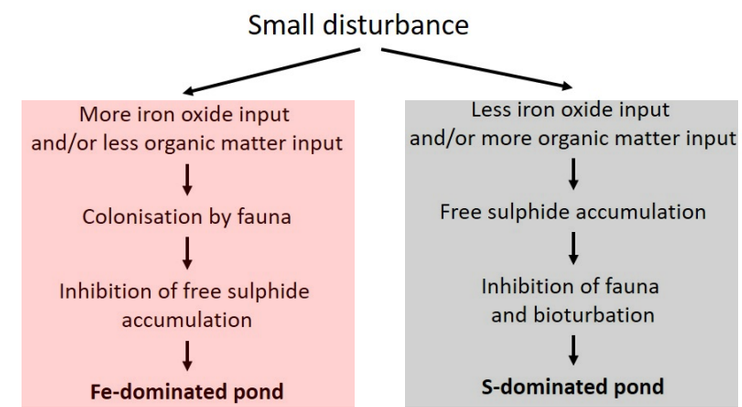


Bioturbation by burrowing fauna **limits free sulphide build-up**

Positive feedback scheme



Free sulphide negatively impacts bioturbation, thus creating a **positive feedback**



Due to the positive feedback, small differences in boundary conditions can **lead to alternative stable states**