

UNRAVELING GEOLOGICAL CONTROL ON GEOCHEMICAL PROCESSES IN TWO CONTRASTING SITES UNDER AGRICULTURE ACTIVITIES

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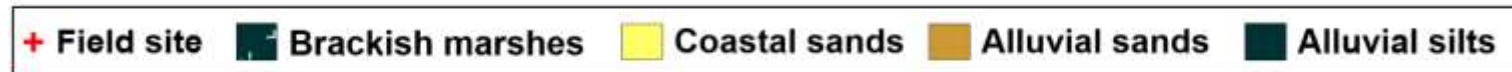
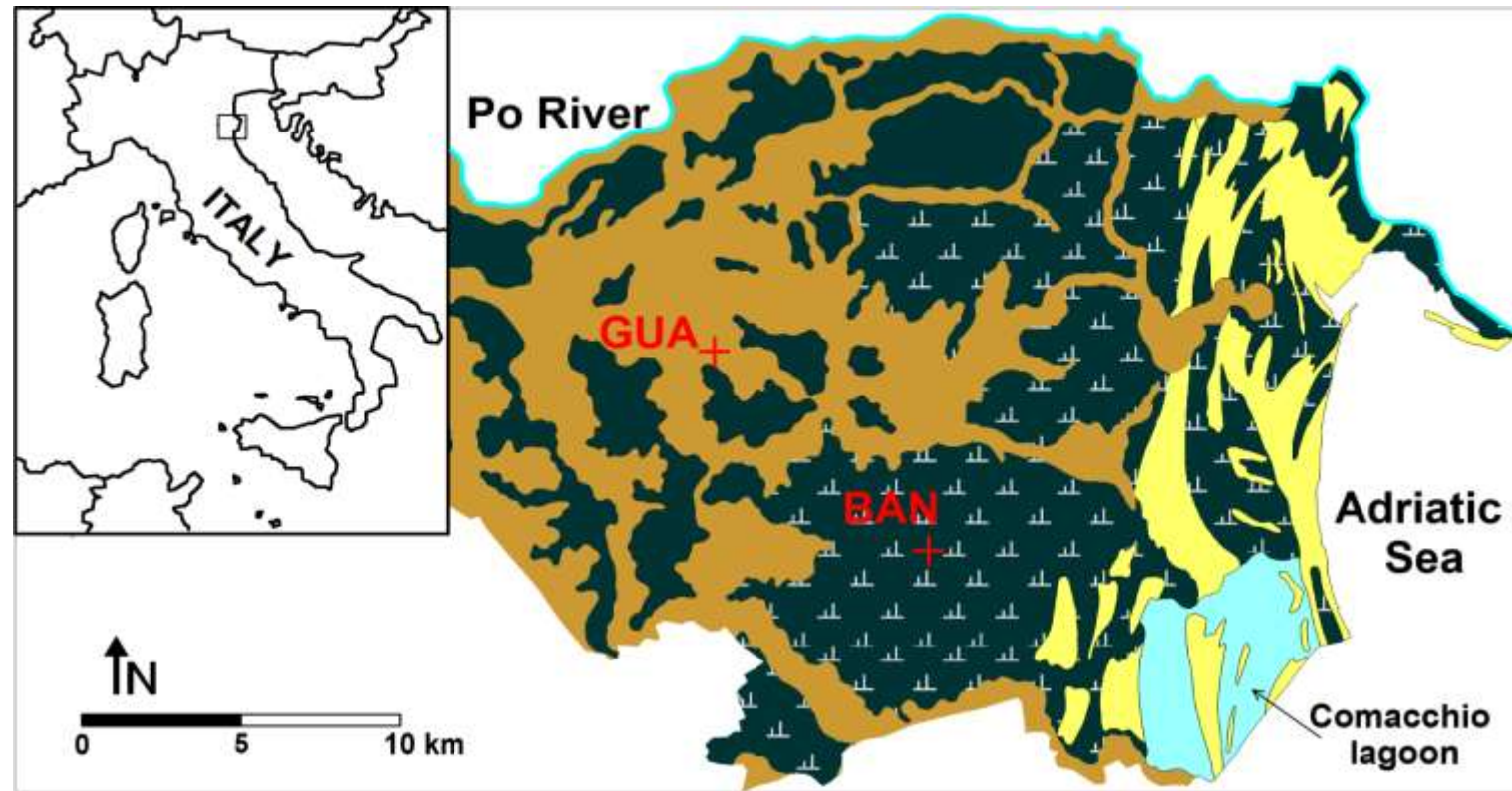
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Study Site Location

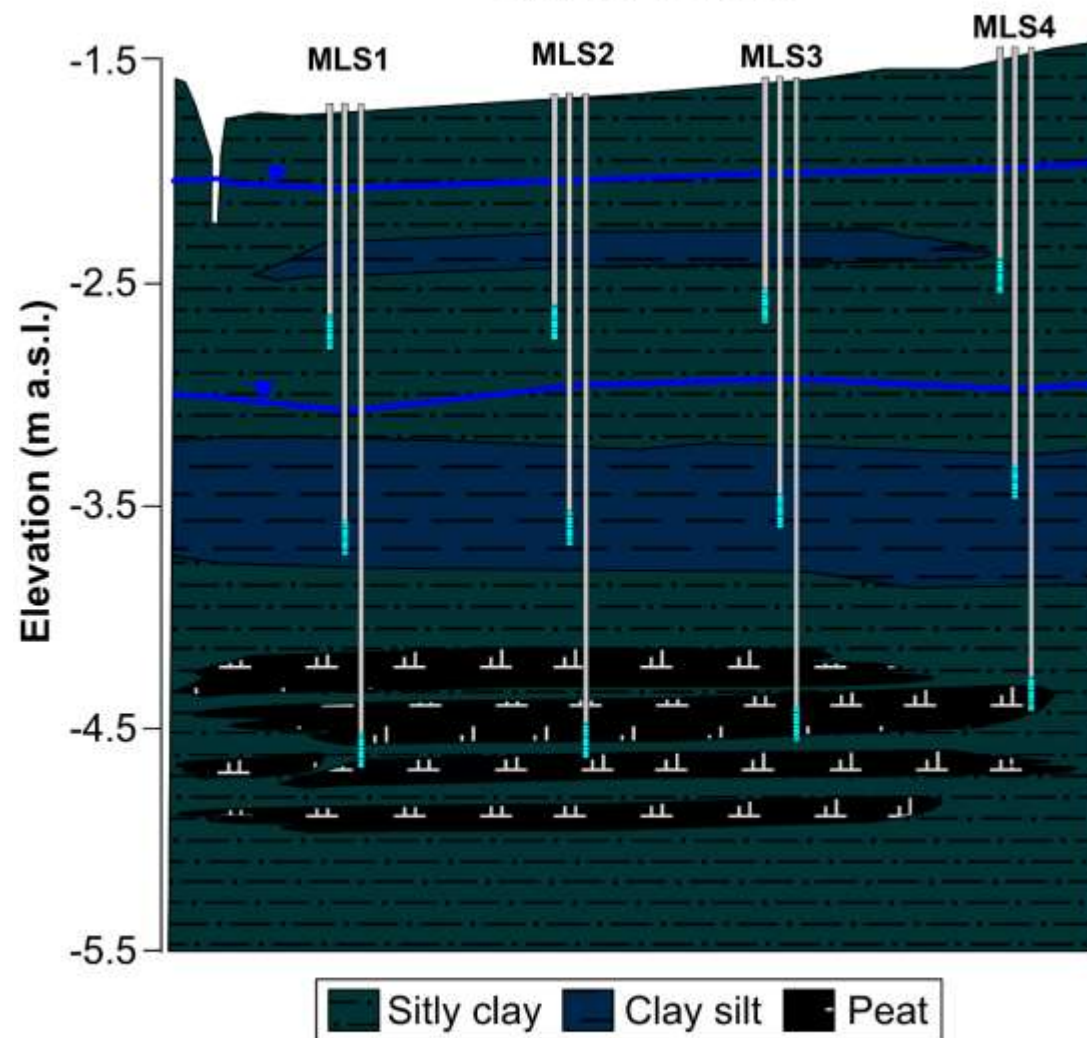


- **Objective of the Study**

- The aim of the project is to quantify the reactive N and C processes occurring in 2 contrasting agricultural sites: one SOM rich and saline (Bando site), the other SOM poor and with freshwater (Gualdo site).
- Synthetic urea fertilization and tillage practices (P1) and compost and no tillage (P2) were applied.
- Each site has dataloggers for soil water content and nested multilevel wells to monitor groundwater level and quality at 3 different depths in both P1 and P2 parcels .

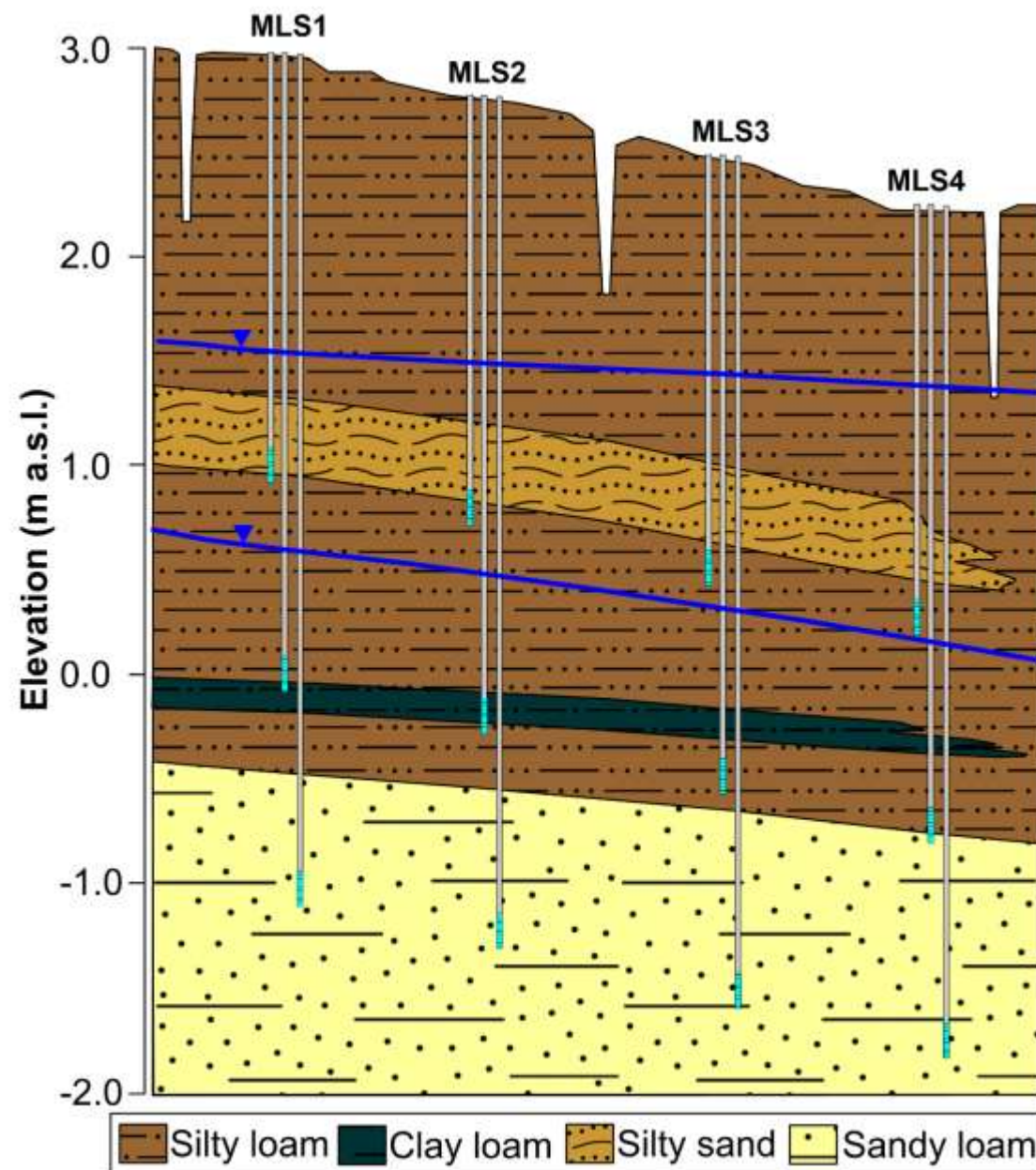


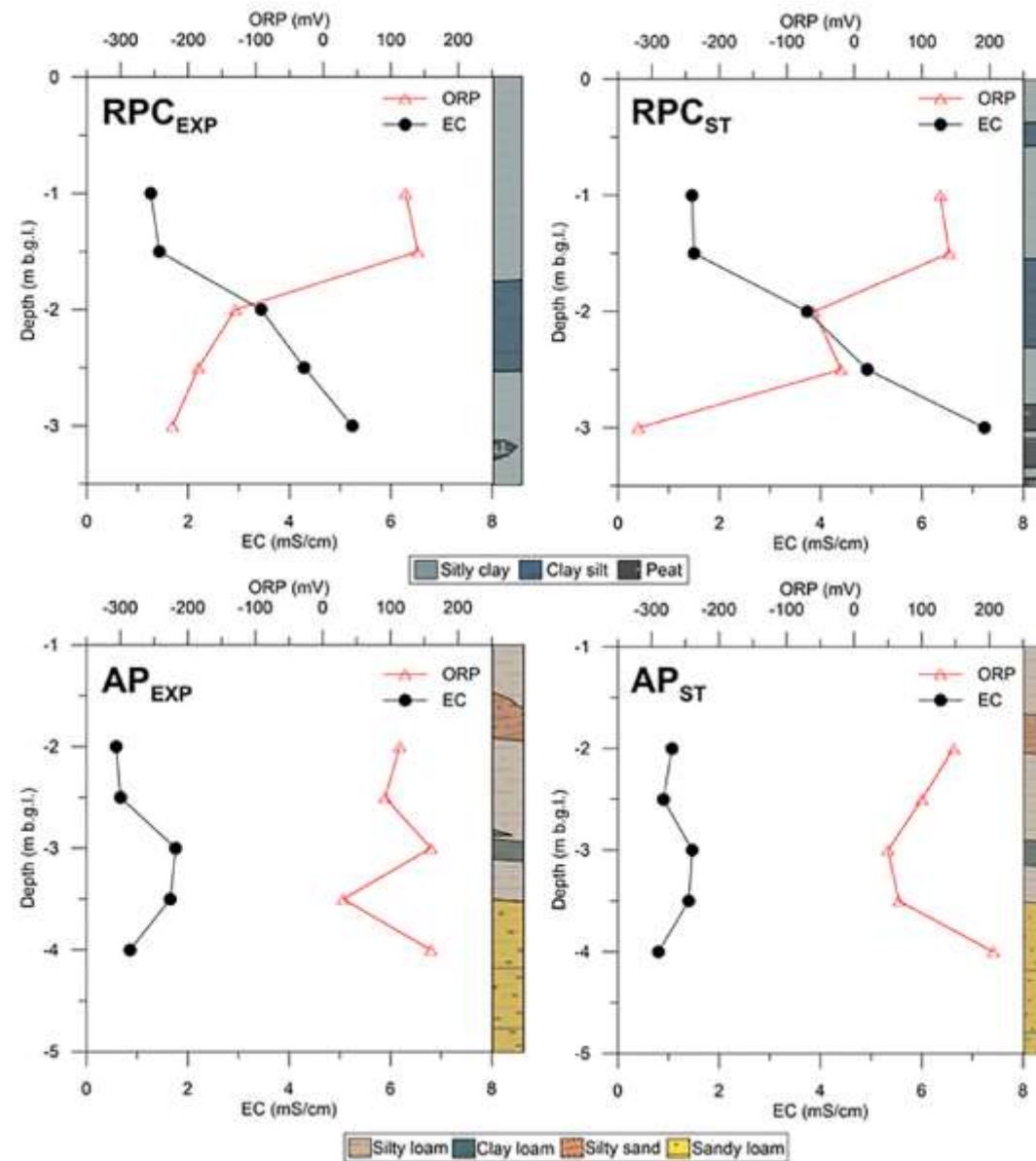
BAN site

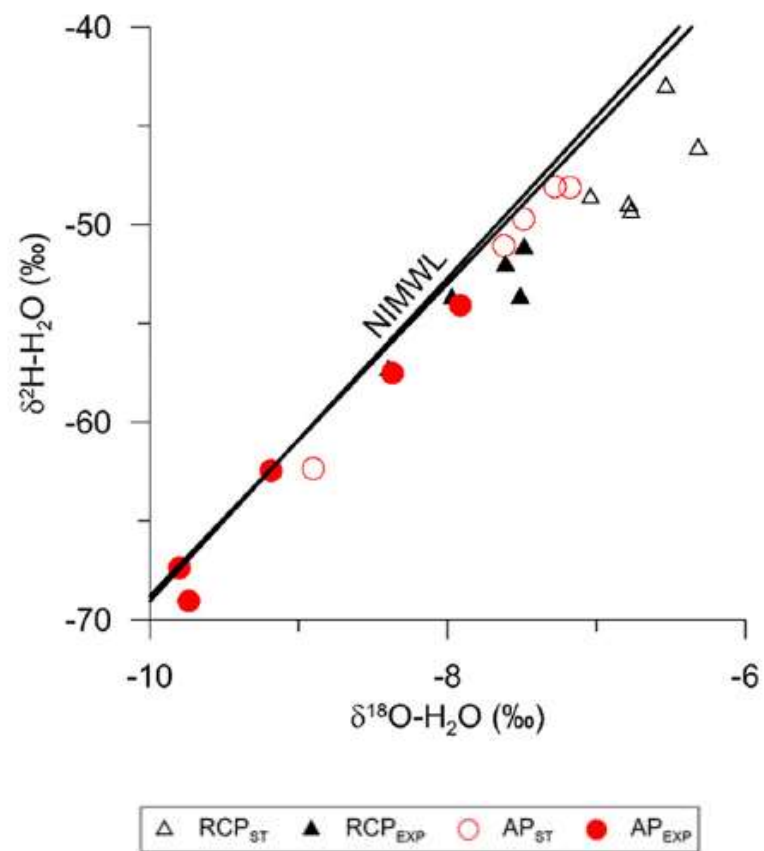


Site Instrumentation

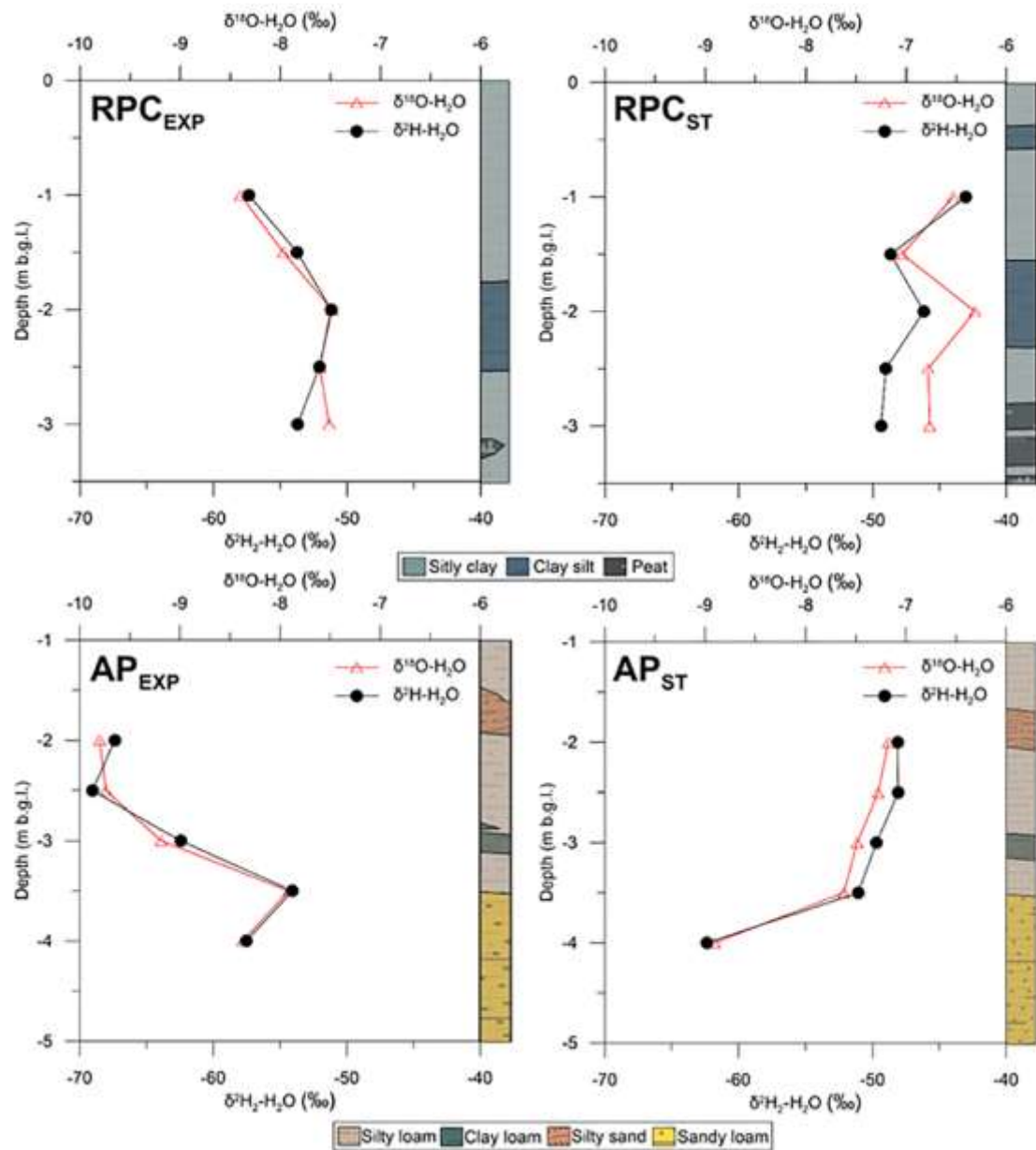
GUA site



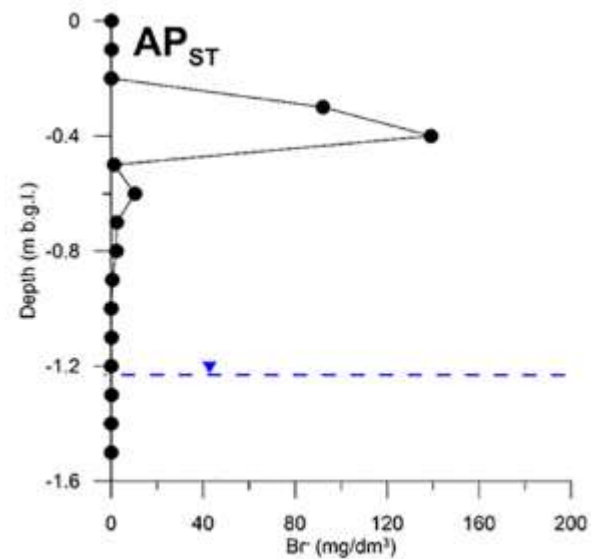
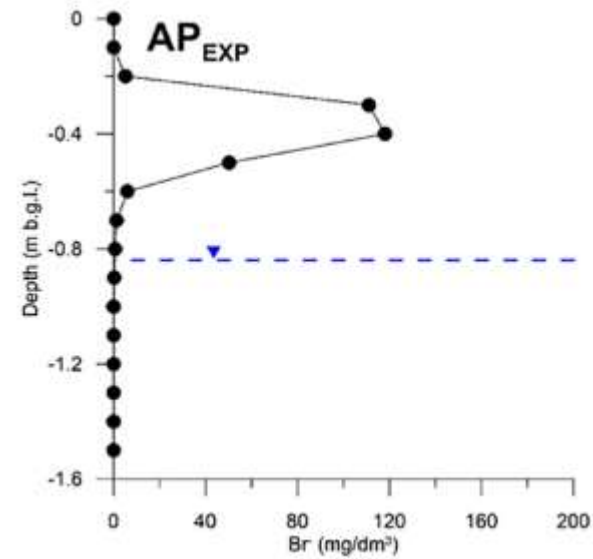
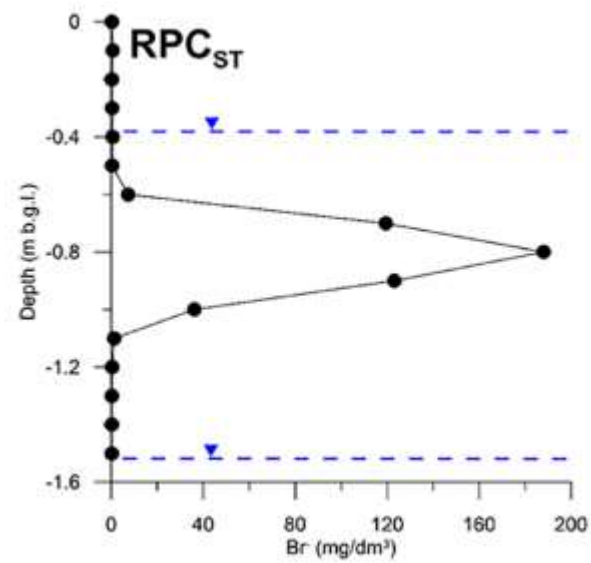
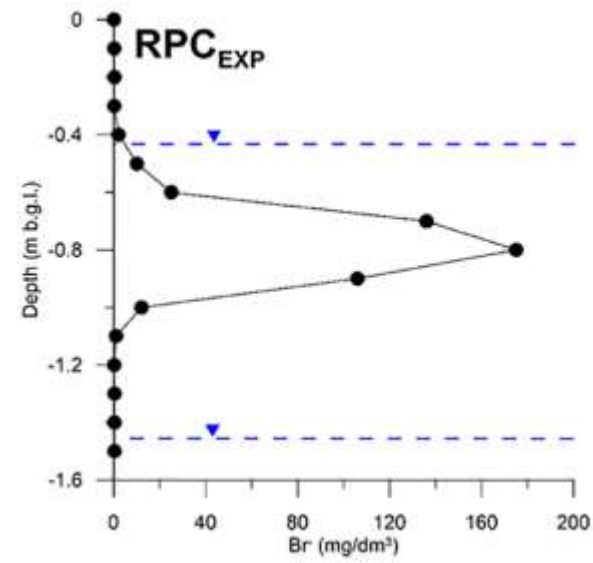




$\delta^2\text{H}$ and $\delta^{18}\text{O}$ Data

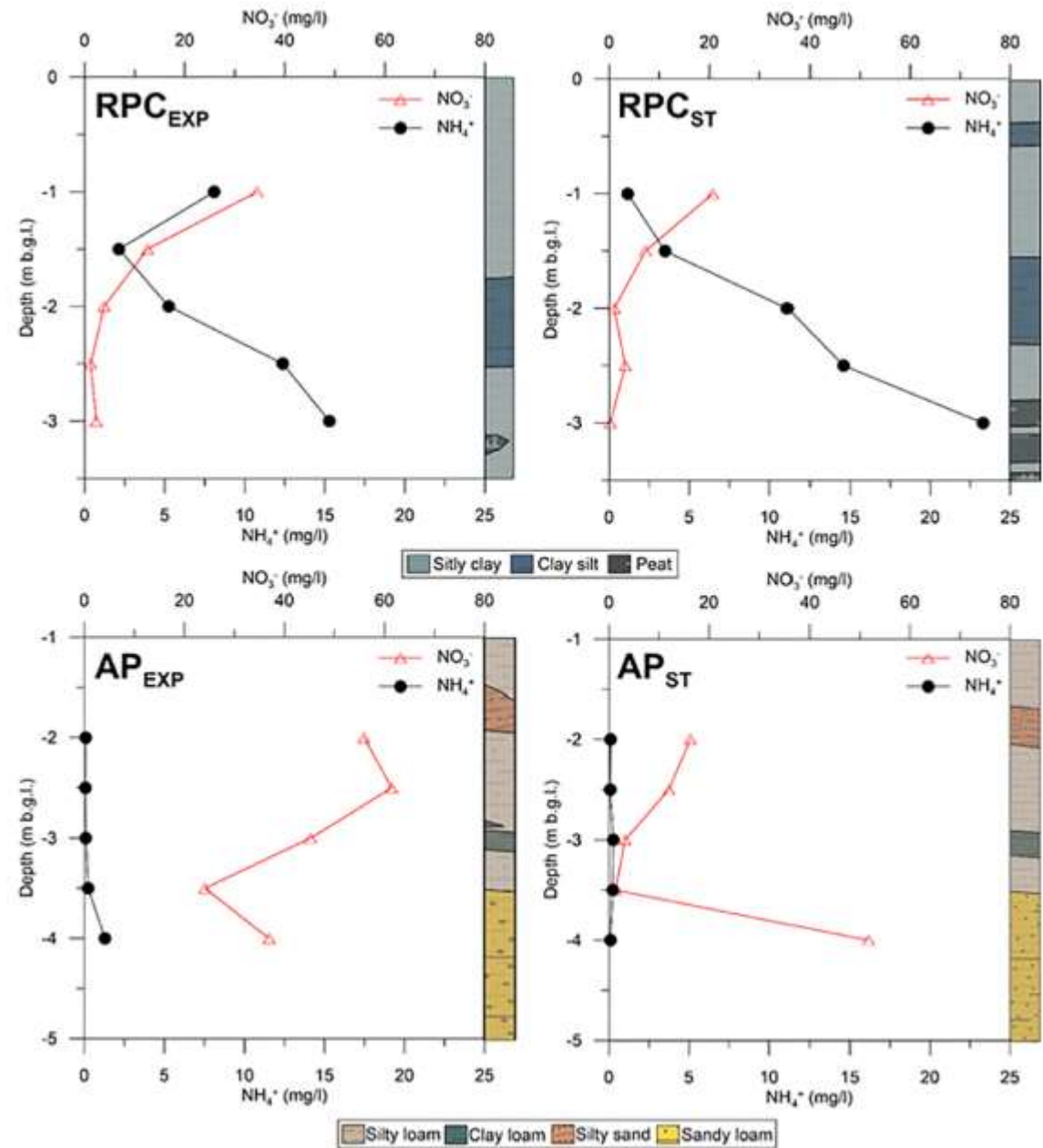


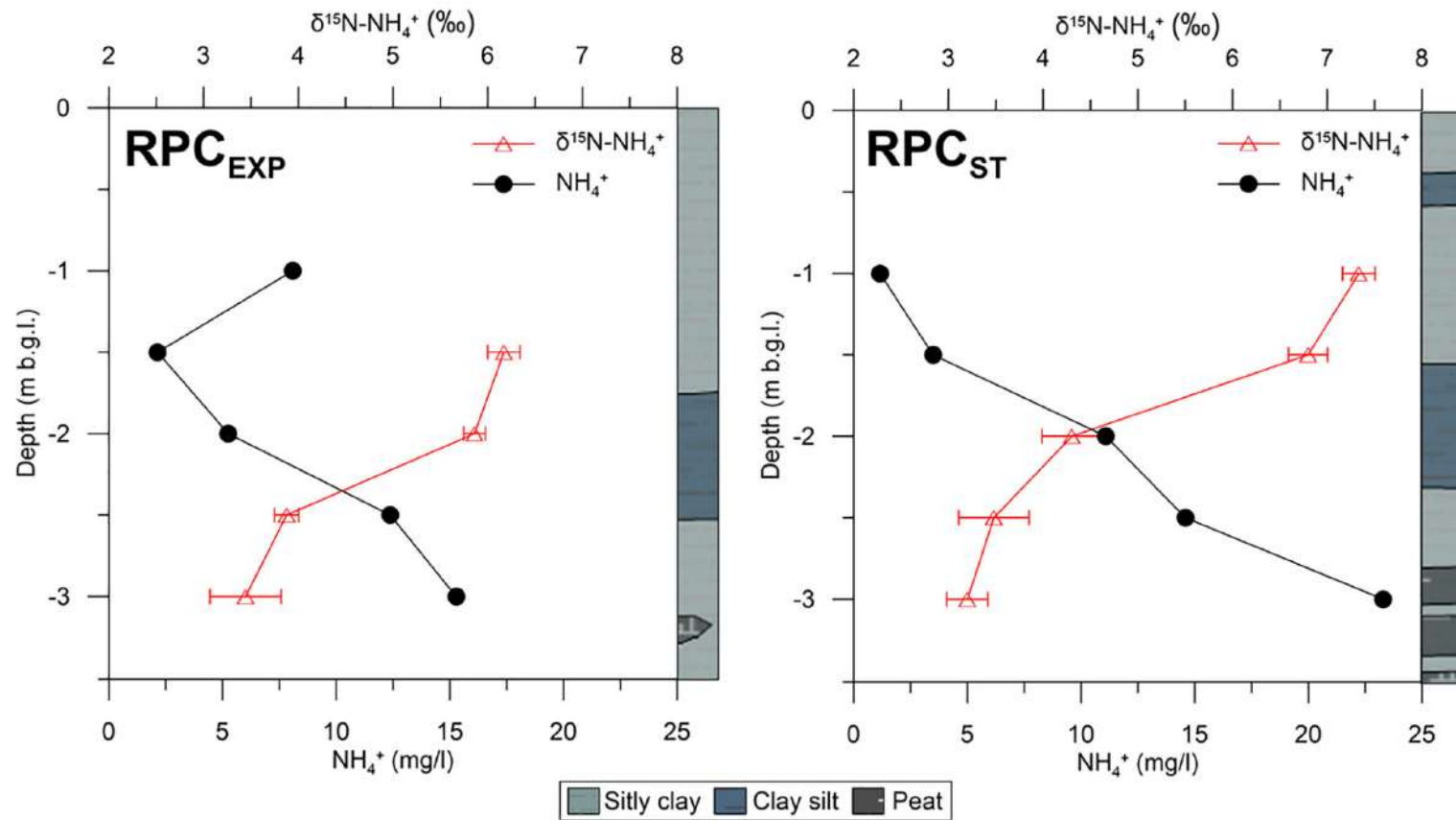
$\delta^{18}\text{O}$ Depth Profiles



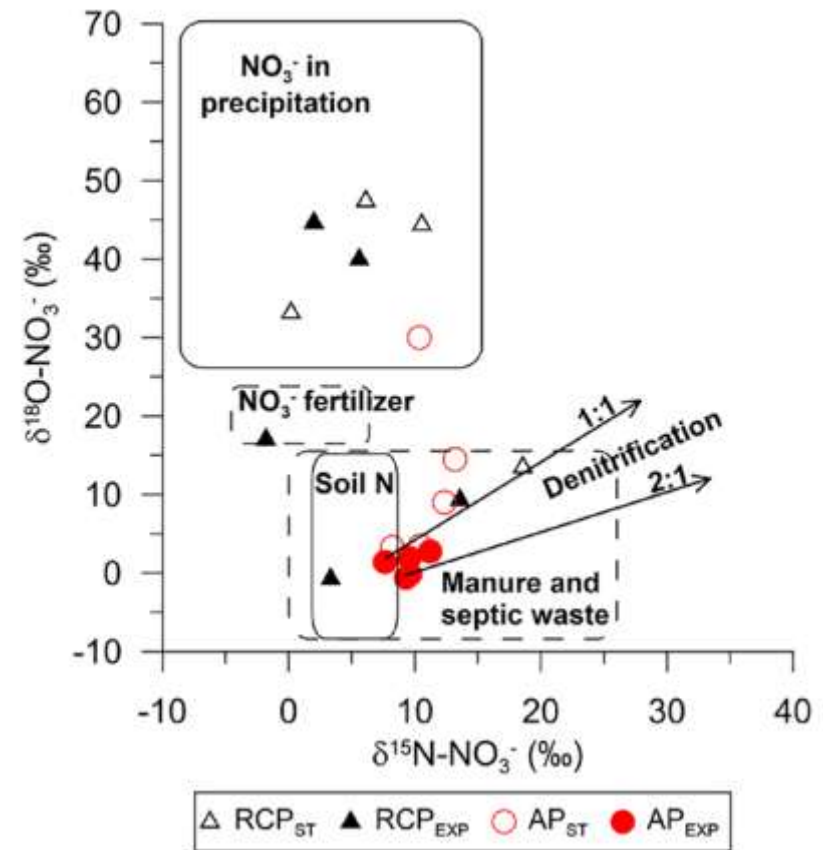
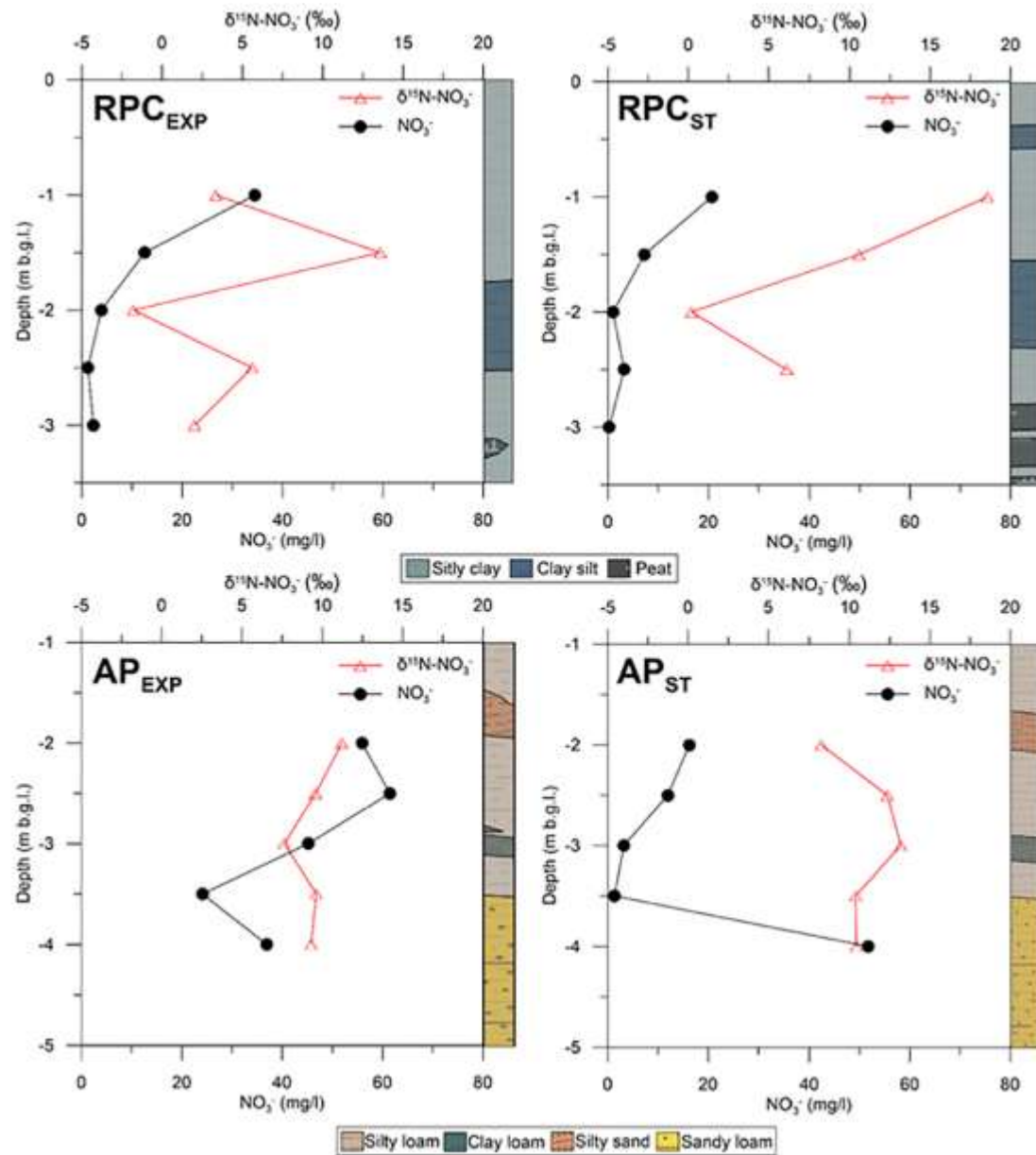
Bromide Tracer Study

NO_3^- and NH_4^+ Data



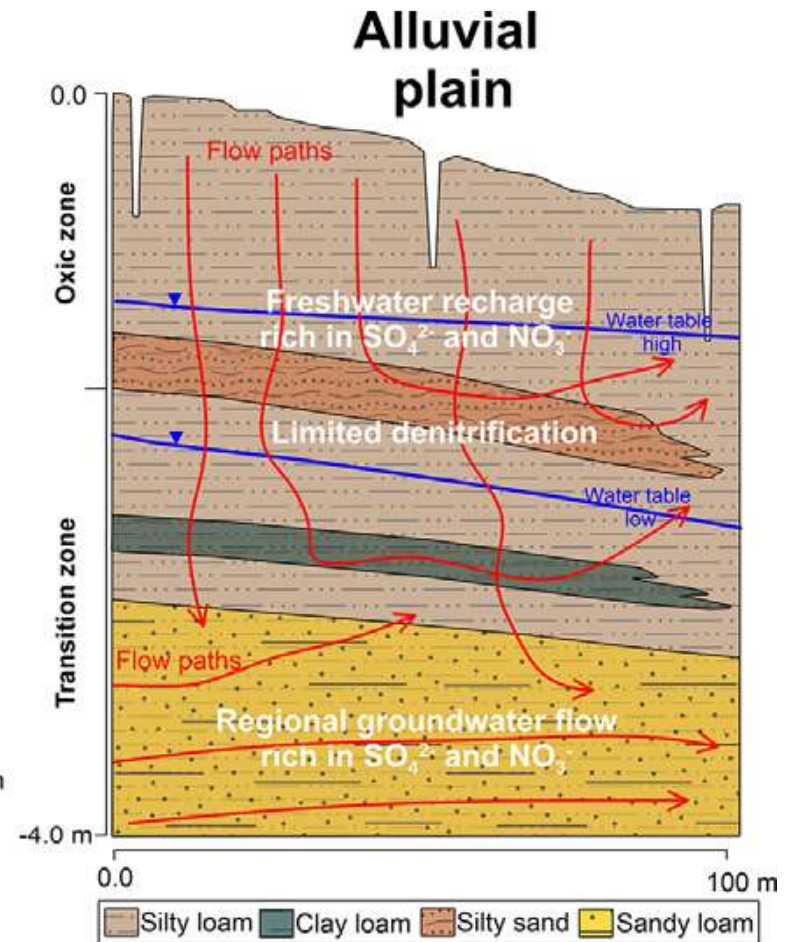
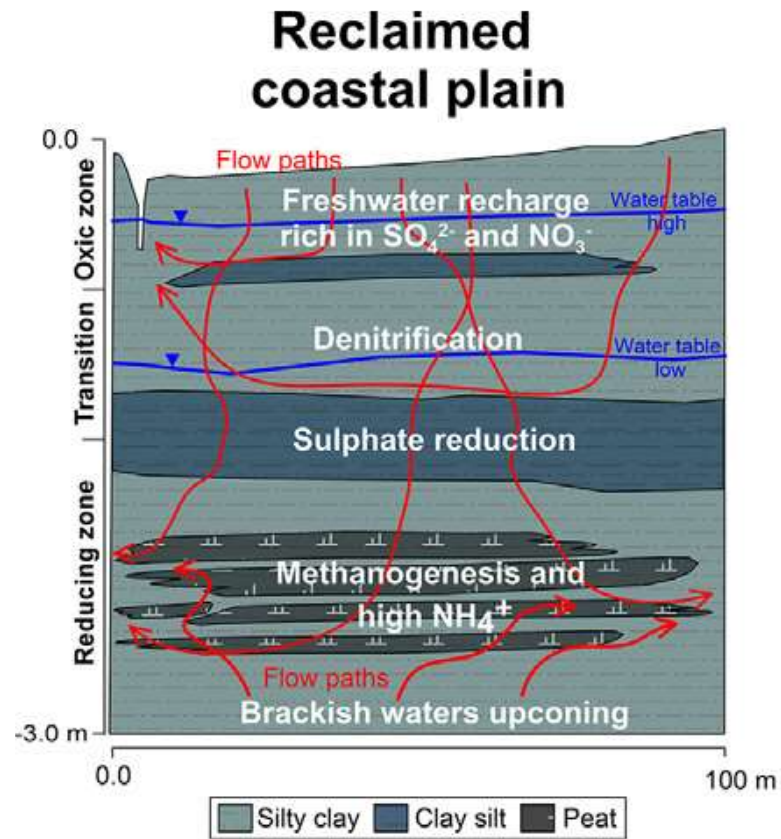


$\delta^{15}\text{N}$ and NH_4^+ Depth Profiles



$\delta^{18}\text{O}$ and $\delta^{15}\text{N}$ Data

$\delta^{15}\text{N}$ and Nitrate Depth Profiles



Geochemical Conceptual Model