

Interactive comment on “Chemical footprints of anthropogenic nitrogen deposition on recent soil C : N ratios in Europe” by C. Mulder et al.

Anonymous Referee #3

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Reactive nitrogen (Nr) deposition certainly has an impact on soil C:N ratio, but the extent of this impact is difficult to assess. The approach chosen here is a statistical analysis of large datasets on C:N ratio and atmospheric Nr deposition in Europe. Results of the study reveal intuitively correct relationships. My concern is that the statistical approach may not have taken into account that regions with productive soils (C:N ratio mostly around 10) historically provided for a higher population density than elsewhere. Our large cities and agricultural production centres are located in these regions and are the source of chronic (excessive) Nr deposition. Perhaps, I did not understand the analysis correctly. Could the authors please explain, whether, and if so how, they considered this cause-effect relationship (low soil C:N (causing a concentration of human activity) causing chronic Nr deposition)? As it looks to me now, only the other direction of the relationship is discussed (chronic Nr deposition causing low C:N ratio).

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