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Interactive comment on "Biogeochemical indicators of peatland degradation – a case study of a temperate bog in northern Germany" *by* J. P. Krüger et al.

Anonymous Referee #5

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This is a concise and clearly presented paper that draws upon a number of biogeochemical indicators to consider peat degradation at three sites of contrasting management history, in northern Germany. The research is generally described well, and although the results are presented in a descriptive manner, they illustrate the potential to use this approach more widely when assessing peatland degradation. However, it would have been useful if the authors had reflected more on this latter point in the paper (specifically the wider significance of this research). While I feel that the paper is very close to publishable quality already, I suggest that the authors consider the following suggestions to improve the manuscript further: Throughout the manuscript the authors refer to increases (or decreases) in isotopic composition. I would prefer to see

isotopic compositions described as enriched (or depleted).

Site Description: âĂć In the light of subsequent comments on the importance of drainage, it would be helpful to see a fuller description of the 'intensive drainage' that occurred (page 16830; line 10); âĂć A location figure would be helpful – to identify the (9) points where samples were located – and the relative size and distribution of the three categories of peatland (wetland; extensively managed grassland; intensively managed grassland); Soil sampling and analysis: âĂć Why were samples only collected to 50cm depth; and how close were the replicate samples collected at each plot? âĂć What depths were selected for radiocarbon dating ? (page 16832; line 4)

Minor points: Abstract: line 21: 'in retrograde' – should this be 'retrospectively'? Page 16829: line 12: 'a posterior' – rephrase. Page 16839: line 24: remove 'been'.

Interactive comment on Biogeosciences Discuss., 11, 16825, 2014.