

In answer to anonymous reviewer # 3's comments:

Only statistical analyses of the obtained data are presented: I miss a table presenting all the raw data acquired on the 41 sites.

Answer: While we understand the reviewer's desire to have access to the raw data, space restrictions will not allow us to include a table presenting these. However, we are referencing papers and original students' theses where some of these data are included.

I also strongly regret that the authors did not explain how to understand the statistical analyses that were performed, as statistics represent a key point in this paper. With my basic knowledge in statistics, I cannot understand Tables 2, 3 and 4. I may think that my case would not be a single one: it would help providing the meaning of the parameters generated by the MRPP procedure and explaining a bit more what is the indicator value.

Answer: Point is well taken. We have included additional information in our materials and methods section to clarify the statistical analysis.

The modified paragraphs read:

'This ordination technique presents the advantage of not requiring normal distribution, nor does it assume linear relationships among variables (McCune and Grace, 2002). NMS organizes complex datasets in a reduced dimensional space (typically two dimensions) as to reveal similarities or dissimilarities in the original dataset structure. An optimal NMS solution results from the iterative search for the best representation within the reduced space. The strength of the NMS solution is expressed by the stress value, which indicates differences between the original data structure and the NMS solution. Generally, a NMS solution with a stress value < 10 is determined to be reliable'.

and

'In addition to the probability value p , the MRPP test generates a T value, which indicates separation among groups, with a larger T reflecting a stronger separation; and an A value, which is an index of within group homogeneity, with a larger A indicating greater homogeneity (McCune and Grace, 2002). In addition, indicator species analyses were performed using the data groupings shown to be different by MRPP. This statistical method generates an indicator value based on the abundance and frequency of a particular variable (individual nutrient, NMR spectral area, or PLFA) in a given data grouping. A larger indicator value represents a stronger relationship between the variable and the given data grouping. The statistical significance of the indicator value was tested against a randomized Monte Carlo test.'

p7524, l8 : many 'disturbance' words

Answer: Sentence was simplified to now read: 'This equilibrium between soil chemical and biochemical properties may be disrupted following disturbance'.

p7524 : 'We addressed this objective by concurrently assessing several key soil attributes that we used as surrogates of ecosystem biogeochemical functioning, namely....' could you simplify a bit this sentence ?

Answer: Done. Sentence was simplified to now read: 'We concurrently assessed several key soil attributes that we used...'

Tables 3 and 4: related to my lack of knowledge in statistics, I don't understand the right part of the table. As in the left part, it shows mean, indicator value and the significance

with a monte carlo test, what are the differences between right and left? Why is the group 4 represented in this right part and not in the left part of the table? Also in Table 3, why is there no data for NO₃ in the right part of the Table?

Answer: We have clarified in the caption of Tables 3 and 4 that: ‘Only nutrients/PLFAs that were found to be significantly different among groups are presented. The left side of the table shows comparison among natural ecosites (group 1, 2, and 3), while the right side shows comparison among all groups’.