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SOIL Discussions

Interactive comment on "Soil microbial communities following bush removal in a Namibian savanna" *by* J. S. Buyer et al.

Anonymous Referee #3

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The present study intends to assess the effect of bush thinning on soil chemistry, microbial biomass and microbial community structure in a savanna and on resilience of ecosystem. The subject falls within the general scope of the journal and it is an interesting contribution. However, the design of the experiment that, in my opinion, is not valid to reach the aims planned in this study. If the authors intended to assess whether the changes promoted by a invasive plant on soil microbial communities diminish or disappear after its management using the thinning, they should have selected a non-invaded area as control of the original state of savanna. Bush encroachment is a major disturbance to the ecosystem and the recovery of soil microbial community after bush thinning should be referred to pre-invasion conditions. Another concern is the lack of replicates of each treatment; as only one plot by treatment was performed. Authors in-

dicated in Statistical analysis section that the factor thinning was not pseudoreplicated because there were 3 pairs of thinned and control plots. However, the 3 thinned plots correspond to the three levels of factor thinning since each plot has a different time of thinning. In my opinion, only vegetation factor was replicated. If the Journal considers acceptable the use of pseudo-replicates, the authors should perform a statistic analysis of the data in Tables 1 and 2. The effect of treatment thinning (thinned vs. control plot) was not statistically analysed and then it cannot be concluded if soil chemistry and PLFA concentrations were more affected by the type of vegetation or by the treatment thinning.

Specific comments: -The application of PLFA 16:1ω5 as biomarker of AMF is limited due to its presence in bacteria (Frostegård et al. (2011). Soil Biology and Biochemistry 43, 1621–1625.). -What month was carried out the thinning?. -How many times were the plots thinned each time?.

Interactive comment on SOIL Discuss., 2, 1393, 2015.