Dear reviewer,

Thank you very much for the positive response to our manuscript. We revised the manuscript according to your suggestions and the others of your colleagues. We are extremely grateful for the valuable and helpful comments and suggestions. All the changes made are explained in detail below:

Following the MDPI suggestion, comments have been answered point by point in red and modified in the text when necessary.

Introduction

POINT 1. I consider it is necessary to reorganize some paragraphs in order to put the broader context regarding to dry forest at the beginning of the introduction and particular characteristic of the Tumbesian region at the end of the introduction.

Lines 64-73. I suggest moving these two paragraphs to the end of the introduction before the objectives.

POINT 1. Thank you very much! change done. Introduction is organized as follows:

Lines 36-58 Dry Forest

Lines 59-70 Tumbesian region

Lines 71-83 Ecuadorian dry forest and Study region

Methods

POINT 2. Regarding the description of the study area, are all the anthropogenic disturbances acting over all clusters?

POINT 2. Anthropogenic disturbances are affecting all clusters, but not all activities affect all clusters. E.g. Goats are difficult to find in the highest areas. The comment was included in lines 168-169. HPI took as limit a distance of 3 km (Lines 178-179) because 6 km is the mean distance that the goats walks per day, and also it is the distance of highest intervention of the people. This is the reason because some plots have HPI = 0.

POINT 3. Are there any relationship between annual rainfall and the type of human activity or between the altitude and the type of human activity?

POINT 3. Some predictors are correlated between they-self as the annual precipitation with altitude (Table 1), so, some activities are carried out in specific areas e.g. corn cultivation is very important in the higher parts to take advantage of the humidity, however this activity means a complete change in land use; the grazing of goats is more important in medium and lower parts, and grazing of cows and horses is done with
different intensity in the whole area. Thus, specific activities could have relationship with the rainfall or altitude but likely not with the complete set of human activities.

**POINT 4.** In relation to data analysis, why did you not model interactions?

**POINT 4.** This is a valid point but we finally decided not to consider interaction in our model because our aim was identifying the influence of human activities per se. The identification of specific variables would facilitate the implementation of mitigation measures, if necessary.

Explaination included in lines 232-234

**POINT 5.** Line 133. What means “stratum”?

**POINT 5.** We referring to subject in lines 139 – 142. Following the Kangas´s (2006) recommendations about stratification use, we carried out a division of the research area in base to forest characteristics previously known (formation and density), each part is a stratum. This division was used to sample equivalently most of forest variability.

**Results**

**POINT 6.** I suggest explaining the results describing the effects of factor always in the same order. For example, HPI was the most important factor influencing your results, then, when you describe the results for each response variable you should start explaining the effect of HPI. Also, you should change the order in which you refer the figures starting with the factor that you explain first in the text. For example, if you explain the effect of one factor in the text and refer to Figure 5a, the following Figure that you refer in the text should be Figure 5b.

**POINT 6.** The results are reorganized as recommended. The order is HPI, annual precipitation, cattle, goats, horses and donkeys, stoniness, mean-annual temperature, and rainfall in the wettest month. They appear in the text following that order if they are included in the best models. The figures are organized accordingly as well.

**POINT 7.** Regarding the selection of the model, I consider you should select one model per response variable, taking into account that the decision of including a predictor variable in the model is not only related with the model fitness but with the question you want to answer. The importance of a predictor in your results is related with the significance of the effect on your response variable not with the model fitness. Then, as an example, domestic animals had no effect on anyone of your response variables in spite of these variables were included in models with better fitness.

**POINT 7.** That is good alternative, however we preferred to take the option where all models with $\Delta$AIC lower to 2 are substantial (according to Burnham & Anderson, 2002) written in line 242. This permits us to show that not just the predictors of the best model are essential to understand the behavior of a response variable. We believe that by this way users of this paper will have better options to implement it.
The stepwise procedure has been observed several times to model selection (Burnham & Anderson, 2002; Derksen, S. and Keselmanf, H. J., 1992). We have included it in lines 251-254

**POINT 8.** Also, I strongly suggest avoiding speculative comments throughout the results and to move these comments to the section “discussion”.

Line 233. I suggest changing “We identified” for “We recorded”.

**POINT 8.** Speculative comments have been deleted from result section and these are dealt now in discussion.

Ok. Change done, now line 257

**POINT 9.** Line 234. When you say “Among these individuals” are you referring to the 7815 individuals?

**POINT 9.** Thank you, in order to clarify the sentence now we refer to species. “From these species…” Line 257

**POINT 10.** Lines 259-264. Consider to delete this part of the paragraph “the latter result may be a consequence of past utilization…. aforementioned activities.” from the section “results”. It is more appropriate for the discussion. Here you are describing the population structure of these species because they could be indicators of some process or actions on the forest. I suggest explaining this in methods for making this clearer for readers.

**POINT 10.** Paragraph moved to discussion. Included in lines 381-388

The population structure of species has been included in methods, lines 207-209

**POINT 11.** Lines 275-277. I suggest changing “Overall, these results confirm a high contribution from fixed and random effects in the local variance, but a lesser contribution to the variations in the Simpson indices and basal area.” for “Overall, these results confirm a high contribution from fixed and random factors to the variations in the richness and number of individuals, but a lesser contribution to the variations in the Simpson index and basal area.”

**POINT 11.** Done! Reads much better now! Thank you! lines 308-310

**POINT 12.** Lines 285-286. You should avoid speculative comments such as “implying that humans reduced the number of species in the forest, possibly by selective logging”, in this section.

**POINT 12.** Sentence erased from results. The subject is dealt with in lines 398-406

**POINT 13.** Lines 316-317. This sentence is not clear for me. You affirm that at higher values of annual rainfall there is a lower composition similarity (is it the meaning of “a negative influence”)? Then, at higher values of annual rainfall there is a higher
heterogeneity, not a higher homogeneity. I suggest rewriting this sentence to make it clearer.

**POINT 13.** Your observation is right, thank you so much! Corrected in line 346. Discussion had the proper interpretation!

**POINT 14.** Line 325. Delete “which can be explained by both wood extraction and livestock browsing.”

**POINT 14.** Done!

**POINT 15.** Lines 329-330. Delete “Incrementing the stoniness might reduce the number of individuals by creating unfavorable growth conditions”.

**POINT 15.** Erased. Subject dealt with in lines 453-457

**POINT 16.** Lines 334-336. Delete “This trend can be explained by the increased evapotranspiration of plants at high temperatures, which reduces their growth.”

**POINT 16.** Moved to discussion. Lines 460-461.

Discussion

**POINT 17.** I have a few general comments about the discussion. I agree that the HPI was the most important predictor influencing the studies variables. It would be important to discuss what kind of human activity could be more related with the HPI. What are the main activities in the area? Is livestock grazing a common activity in the villages? Is the logging in the area for commercial purposes implying selective logging or is it for providing firewood? I consider it could help to interpret the results.

**POINT 17.** Paragraph included in lines 407-411

**POINT 18.** I strongly suggest being careful with the discussion of cattle effects because there was no effect. There would be many reasons for the absence of an effect, for example, the range of livestock densities covered by samplings could be not enough to detect the effects. Is the amount of feces a good estimator of livestock pressure? It is a common estimator but it can be variable considering the decomposition rate of the site. You should point that results regarding livestock were unclear.

**POINT 18.** The weakness of the livestock estimation from feces is mentioned now. Lines 420-421 and 483-485 were included. Also, the subject is dealt in lines 431-434 and 497-498

Tables and figures

**POINT 19.** I suggest putting the figures in the same order in which they appear in the text.

**POINT 19.** The figures were placed regarding the suggestion
POINT 20. Table 1. Consider remade the table at light of the comments about results.

POINT 20. Table was not changed, because we considered the suggestion had relationship to POINT 7, where we give the explanation because we prefer to keep the models selection.

POINT 21. Figure 5a. Why HPI vary between 0 and 0.6? In methods you say that the variation was between 0 and 0.01367.

POINT 21. 5a and 5c vary from 0 to 0.12, 5h from 0 to 0.2. The HPI in graphs is log transformed. The explanation has been included in graph caption. Consider that, species richness and diversity have different HPI than abundance and basal area (Explanation in lines 183-185).

POINT 22. Figure 5c and 5h. I consider you could make a log transformation of feces variables to better show the tendency of most data. In order to homogenize the way of showing the result you could apply the log transformation for all the figures showing the effect of feces variables (5c, d, e, h and i). Although in many cases there is not a significant effect, log transformation could help to show no significant tendencies.

POINT 22. The figures were adapted to log-transformed feces according to your suggestion.

LANGUAGE

The document was corrected by native speakers through Proofreading Service of TUM Graduate School, however a second revision was done. I include the certificate.
CLARIFICATION

Following the suggestion of the reviewer 2, Table 1 was moved from appendix into the body text and Table 3 was incorporated newly. Likewise, the figures 4 was remade for the same reason