Response to Reviewers

Editors:

I am pleased to inform you that your Manuscript RSOS-170151.R2 entitled "Contrasting ecological roles of non-native ungulates in a novel ecosystem" has been accepted for publication in Royal Society Open Science subject to minor revision in accordance with the referee suggestions. Please find the referees' comments at the end of this email.

The reviewers and Subject Editor have recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the comments and revise your manuscript.

Thank you for working with us to get this manuscript published. We feel the review process has led to a greatly improved manuscript, and appreciate your support. We have responded to the comments from Reviewer 2 below, and adjusted our manuscript accordingly.

Reviewer 2:
Comments to the Author(s)
The authors have improved their manuscript. I still feel that results are over interpreted. I still feel that the part related to wild boar in fig.4 should be removed and only mentioned in the results as non significant, because in its present form, I feel the figure 4 is misleading by trying to compare pig and deer.

Thank you, we appreciate your feedback on Figure 4. We included the pig scat graphs in the main manuscript to make the point that we were unable to detect correlations between pig scats and seedling abundance, whereas there were strong correlations with deer scat abundance and seedlings. We have retained the figure, but we added text to clarify that this is not a per capita comparison of pigs and deer, but instead a test of whether pigs and deer, at the abundances in which they occur in the limestone forests on Guam, impact seedling metrics. We conducted surveys at sites that cover the range of variability in pig and deer abundance present in the limestone forests of Guam, therefore we believe the comparison is relevant and not misleading.

" A direct comparison of deer and pig effects is inappropriate because relative scat counts are species-specific; our survey methods do not allow us to obtain a per capita effect size. However, our surveys reflect the range of pig and deer abundances found in the limestone forests of Guam." (L. 235-238)

In Table 1.b the treatment effect for Ochrosia seems to be significant and in contradiction to what is stated in the text (L200).
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Thank you for pointing this out. In this version of our table, we accidentally switched the "no treatment" and "treatment" AICc values. "No treatment" was the better fit model, and our table has been corrected.

Moreover I proposed to add the differences among species in fig. 2 but is has not been done. [Previous comment was "If there is a species effect, please show it in the figure with letters (a, b, c…) species sharing the same letter are not different…"]
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We understand your desire to assess which species by treatment combinations were significantly different. However, our approach focuses on individual models for each species, and not on the full model with all species by treatment combinations. We believe the species-specific comparison is the relevant level of comparison for this experiment (i.e. knowing whether survival of Aglaia with and without ungulates is more important than knowing whether survival of Aglaia with ungulates is different from survival of Carica without ungulates). In addition, with a model comparison approach, we can only state whether predictors are included or not included in a final model, and indeed the species by treatment combination was in the best fit model when all species were included, but we cannot quantitatively assess differences between species because there are more than 2 levels. In our single species models, we can determine whether treatment is an important predictor for each species using our model comparison approach because there are only two levels. The overall survival for each species by treatment combination can be seen in Figure 2, for readers interested in differences between species, and our scripts and corresponding data will be available in the dryad link.

In Table 2, I still feel that authors should calculate average seedlings par scat only considering the scats where the species germinated but not in all as they did.
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Thank you for this comment, we amended the numbers in the table to reflect averages only for scats that contained that particular species. We also added this sentence to clarify that quantity in Table 2's caption: "Average seedlings per scat were calculated only from scats which contained at least one seed of that species."

L252 wrong : pigs do not disperse more native species than non-native ones (2 natives versus 6 non-natives)
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We recognize the point the reviewer is making - a greater number of non-native than native species germinated from pig scat, although a far larger number of native seeds than non-native seeds germinated as well. In this comment, we believe the reviewer is referring to L262, where we stated "pigs dispersed predominantly native seeds". We have changed that line to read "pigs dispersed many seeds". Additionally, we have read through the results and discussion to ensure we do not say elsewhere that more native species germinated from pig scats.

L269 M. citrifolia has an average of 170 (not 120).
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This has been corrected in the text. Thank you.