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**Royal Society Open Science - Decision on Manuscript ID RSOS-170151.R1**

1 message

**Royal Society Open Science** <onbehalf+kpadian+berkeley.edu@manuscriptcentral.com> Tue, Jul 11, 2017 at 10:55 PM

Reply-To: kpadian@berkeley.edu

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11-Jul-2017

Dear Ms Gawel:

Manuscript ID RSOS-170151.R1 entitled "Contrasting ecological roles of non-native ungulates in a novel ecosystem" which you submitted to Royal Society Open Science, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

Please submit a copy of your revised paper within three weeks (i.e. by the 03-Aug-2017). If we do not hear from you within this time then it will be assumed that the paper has been withdrawn. In exceptional circumstances, extensions may be possible if agreed with the Editorial Office in advance. We do not allow multiple rounds of revision so we urge you to make every effort to fully address all of the comments at this stage. If deemed necessary by the Editors, your manuscript will be sent back to one or more of the original reviewers for assessment. If the original reviewers are not available we may invite new reviewers.

To revise your manuscript, log into <http://mc.manuscriptcentral.com/rsos> and enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision. Revise your manuscript and upload a new version through your Author Centre.

When submitting your revised manuscript, you must respond to the comments made by the referees and upload a file "Response to Referees" in "Section 6 - File Upload". Please use this to document how you have responded to the comments, and the adjustments you have made. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response.

In addition to addressing all of the reviewers' and editor's comments please also ensure that your revised manuscript contains the following sections before the reference list:

- Ethics statement

If your study uses humans or animals please include details of the ethical approval received, including the name of the committee that granted approval. For human studies please also detail whether informed consent was obtained. For field studies on animals please include details of all permissions, licences and/or approvals granted to carry out the fieldwork.

- Data accessibility

It is a condition of publication that all supporting data are made available either as supplementary information or preferably in a suitable permanent repository. The data accessibility section should state where the article's supporting data can be accessed. This section should also include details, where possible of where to access other relevant research materials such as statistical tools, protocols, software etc can be accessed. If the data have been deposited in an external repository this section should list the database, accession number and link to the DOI for all data from the article that have been made publicly available. Data sets that have been deposited in an external repository and have a DOI should also be appropriately cited in the manuscript and included in the reference list.

- Competing interests

Please declare any financial or non-financial competing interests, or state that you have no competing interests.

- Authors' contributions

All submissions, other than those with a single author, must include an Authors' Contributions section which individually lists the specific contribution of each author. The list of Authors should meet all of the following criteria; 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published.

All contributors who do not meet all of these criteria should be included in the acknowledgements.

We suggest the following format:

AB carried out the molecular lab work, participated in data analysis, carried out sequence alignments, participated in the design of the study and drafted the manuscript; CD carried out the statistical analyses; EF collected field data; GH conceived of the study, designed the study, coordinated the study and helped draft the manuscript. All authors gave final approval for publication.

- Acknowledgements

Please acknowledge anyone who contributed to the study but did not meet the authorship criteria.

- Funding statement

Please list the source of funding for each author.

Once again, thank you for submitting your manuscript to Royal Society Open Science and I look forward to receiving your revision. If you have any questions at all, please do not hesitate to get in touch.

Sincerely,

Alice Power  
Editorial Coordinator  
Royal Society Open Science  
[openscience@royalsociety.org](mailto:openscience@royalsociety.org)

on behalf of Kevin Padian  
Subject Editor, Royal Society Open Science  
[openscience@royalsociety.org](mailto:openscience@royalsociety.org)

Associate Editor Comments to Author:

Comments to the Author:

Before this paper can be accepted for publication, referee #1's concerns need to be fully and adequately addressed.

Comments to Author:

Reviewer: 2

Comments to the Author(s)

RSOS-170151.R1

Review « Contrasting ecological roles of non-native ungulates in a novel ecosystem » by Gawel et al.

Dear authors,

Thank you for your answers to our questions. After a second evaluation of your paper, I still think that there are major revisions to bring to it.

Please see my suggestions, comments and questions below.

Table 1 and model results

The authors should really present the complete results testing species, time and treatment in a single model and then provide the model retained after the selection process, with the weight and AICc of each model and of the model retained.

The treatment effect for each species is already presented in figure2.

Full model : Species+Treatment+Species:Treatment+time+time:Treatment (to test for the different time length of exposure to ungulates) and not the other interactions time:species as it is not fully crossed, and same for the 3rd order interaction.

Table 2

Pb average seedlings/scat is not an accurate measure, the frequency of presence is a more relevant measure or the average seedling/scat should be assessed only when the species has been consumed (within presence).

Please reshape this table with frequency of occurrence, recalculated average seedling (to be linked to the number of seeds produced per fruit of each species).

L 39Elaphus not elaphas.

L88-89 Please clarify and rephrase, I do not understand ...and especially the absence of scat amongst ????

L122-124 if this is the case, then time will not be significant in the final model. So I do not understand why you put these results in the mat and method section

L159 among instead of between  
 L 189 *P. mariannensis* not *mariana*  
 L231 metrics instead of numbers

Figure 1. is OK

Figure 2. is OK put the \* on top of the bars, and ns for the last two species

If there is a species effect, please show it on the figure with letters (a, b, c ...) species sharing the same letter are not different ...

Figure 3.

The data in that figure are not accurate, because the proportional abundances (as they are defined in the material and methods) of the different species dispersed by wild pigs do not sum to 1 (it is more than 1) and for deer, there is a similar problem (the sum is less than 1)

For the species present in the local flora however (left panel), the data presented seem to be OK.

Figure 4.

Concerning defecation rate, please check Picard et al. 2015 (<http://onlinelibrary.wiley.com/doi/10.1002/ece3.1512/abstract>), where you will see that your statement does not hold as defecation rate is not so different among animal species (for instance between red deer and wild boar).

The density of scats for pigs is very small (from 0 up to 4 per 800m<sup>2</sup> and an outlier with 10 scats per 800m<sup>2</sup>) and variable at all. Putting pig and deer on different X scales lead to ambiguous reading of the results.

I would erase that figure or present it with two boxplots: with and without pig scat. In no manner you can use these results to determine that wild boar has or has no effect on the vegetation.

As I pointed out in my first review I would suggest using linear regressions with both types of scats to see if wild boar can significantly explain something once deer has been taken into account.

The fact that boar do not wallow on limestone karst forest and are not browsing animals just mean that you can not really assess their direct role in this kind of forest.

Then I would conclude that the comparison you do between deer and pigs role is not really relevant.

Reviewer: 1

Comments to the Author(s)

See attached review.

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Abstract: Conservation has long focused on preserving or restoring pristine ecosystems. However, understanding and managing novel ecosystems has grown in importance as they outnumber pristine ecosystems worldwide. While non-native species may be neutral or detrimental in pristine ecosystems, it is possible that even notorious invaders could play beneficial or mixed roles in novel ecosystems. We examined the effects of two long-established non-native species – Philippine deer (*Rusa marianna*) and feral pigs (*Sus scrofa*) – in Guam, Micronesia, where native vertebrate frugivores are functionally absent leaving forests devoid of seed dispersers. We compared the roles of deer and pigs on seedling survival, seed dispersal, and plant community structure in limestone karst forests. Deer, even at low abundances, had pronounced negative impacts on forest communities by decreasing seedling and vine abundance. In contrast, pigs showed no such relationship, and more seeds were found in pig scats than deer scats, suggesting that pigs provide an ecosystem function – seed dispersal – that has been lost from Guam. Our study presents a surprising discrepancy between the roles of two non-native species that are traditionally managed as a single entity, suggesting that ecological

function, rather than identity as a non-native, may be more important to consider in managing novel systems.

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