

Dear Natasha de Manincor,

Your preprint, entitled **Does phenology explain plant-pollinator interactions at different latitudes? An assessment of its explanatory power in plant-hoverfly networks in French calcareous grasslands**, has now been reviewed. The referees' comments and the recommender's decision are shown below. As you can see, the recommender found your article very interesting, but suggests certain revisions.

We shall, in principle, be happy to recommend your article as soon as it has been revised in response to the points raised by the referees.

When your revised article is ready, please:

- 1) Upload the new version of your manuscript onto your favorite preprint server;
- 2) Follow this link https://ecology.peercommunityin.org/user/my_articles or logging onto the *PCI Ecology* website and go to 'your contributions' section and then to 'Your submitted preprints' subsection in the top menu;
- 3) Make your changes to the title, summary, link to the article (or its DOI) and keywords if necessary by clicking on the 'Edit Article' button;
- 4) Write, copy/paste or upload (as a PDF file) your reply to the recommender's and reviewers' comments by clicking on the 'Write, edit or upload your reply to recommender' button. You can also upload (as a PDF file) a revised version of your preprint, with the modifications indicated in TrackChanges mode;
- 5) When you are ready to submit your new version, click on the 'Save & submit your reply' button.

Once the recommender has read the revised version, he/she may decide to recommend it directly, in which case the editorial correspondence (reviews, recommender's decisions, authors' replies) and a recommendation text will be published by *PCI Ecology* under the license CC-BY-ND.

Alternatively, other rounds of reviews may be needed before the recommender reaches a favorable conclusion. He/she also might decide not to recommend your article. In this latter case, the reviews and decision will be sent to you, but they will not be published or publicly released by *PCI Ecology*. They will be safely stored in our database, to which only the Managing Board has access. You will be notified by e-mail at each stage in the procedure.

Thanks in advance for submitting your revised version.

Yours sincerely,

The Managing Board of *PCI Ecology*

Does phenology explain plant-pollinator interactions at different latitudes? An assessment of its explanatory power in plant-hoverfly networks in French calcareous grasslands

Natasha de Manincor, Nina Hautekeete, Yves Piquot, Bertrand Schatz, Cédric Vanappelghem, François Massol

<https://doi.org/10.5281/zenodo.2543768> version 3
Submitted by Natasha de Manincor 2019-01-18 19:02

Abstract

For plant-pollinator interactions to occur, the flowering of plants and the flying period of pollinators (i.e. their phenologies) have to overlap. Yet, few models make use of this principle to predict interactions and fewer still are able to compare interaction networks of different sizes. Here, we tackled both challenges using Bayesian Structural Equation Models (SEM), incorporating the effect of phenology overlap in six plant-hoverfly networks. Insect and plant abundances were strong determinants of the number of visits, while phenology overlap alone was not sufficient, but significantly improved model fit. Phenology overlap was a stronger determinant of plant-pollinator interactions in sites where the average overlap was longer and network compartmentalization was weaker, i.e. at higher latitudes. Our approach highlights the advantages of using Bayesian SEMs to compare interaction networks of different sizes along environmental gradients and articulates the various steps needed to do so.

Keywords: Bayesian model, interaction probability, latent block model, latitudinal gradient, mutualistic network, phenology overlap, species abundance, structural equation model.

Round #2

Decision

by Anna Eklöf, 2019-10-26 10:50

Manuscript: <https://doi.org/10.5281/zenodo.2543768> version 3

Revision round #1

All comments have been addressed and the manuscript reads well. There are only a few minor comments to address from one of the reviewers.

We thank the Editor and the reviewers for the second revision and for the recommendation. We replied to the reviewers in this document and we will submit the revised version.

Reviews

Reviewed by anonymous reviewer, 2019-10-13 20:29

Review of revised "Does phenology explain plant-pollinator interactions at different latitudes? An assessment of its explanatory power in plant-hoverfly networks in French calcareous grasslands" by Manincor et al.

I have read the revised manuscript and authors' response letter. I appreciate the authors' thoughtful response to my comments and their edits to the manuscript. I have no further comments.

We thank Reviewer 1 for the revision and we are pleased that our responses and the edits in the manuscript satisfied his requests.

Reviewed by Ignasi Bartomeus, 2019-10-23 19:38

Thanks for the detailed response. The authors clarified all my comments and I especially appreciate the cross-validation analysis added.

We thank Reviewer 2 for the revision of the new version. We are pleased that our responses to his comments and the new analyses integrated in the main text satisfied his expectations.

In this new version, I only spotted a few editorial errors.

Line 39. maybe is better "phenological"

We replaced the word "phenology" with "phenological" as requested.

Line 455. Something is missing before "evinces a clear effect of PO"

We added the word "this" to complete the sentence.

Fig 2 and 3 species names can be spelled out for publication. It will look nicer.

We modified all the LBM figures and we changed the species names as requested. However, we cannot spell out the entire name of the species since they are too long. We then use the first letter of the genus and we used the entire name of the species. A list with the short and complete scientific names has been added in the Supplementary materials.

Fig S1, I only spot 5 red dots.

Yes, we know, there are only 5 dots since for the two sites in the south France the distance between them at this resolution is not enough to separate the two points. We explained in the legend.