Hey Isabelle,

I hope that you’ve been well and weathering Coronavirus without any problems! I’m sorry that this has taken so long to get to back to you; it’s been busy here, but I hope that you’ll find the analysis was worth the wait.

As before, Nadja, Katie, Adam and I have been working with the simulation results to visualize the variety of patterns that we see in each model. We'd like to share our current plots of TROLL with you, but also to invite you to **understand** **its emergent BEF patterns with respect to the input communities' initial diversity and species composition**. Nadja wrote down her thoughts on the mechanisms behind PPA to provide an example of what we’re looking for, which is attached. The plan for the paper, which we hope to finish drafting during the summer, will be to discuss several key similarities and differences between the models’ BEF patterns, tying them into what it means for the real communities they represent. **All of the documents can be found in my Dropbox,** [**here**](https://www.dropbox.com/sh/e0nkz4u08a3iiwq/AADCBgt5yleaLVkCKvTb_mlEa?dl=0)**.**

This time, rather than relying on linear models, we are using Bayesian models derived with the *brms* package in R, which uses RStan. While the assumptions of the linear models weren’t met, the Bayesian models have largely worked fine. In the attached documents for each biodiversity metric (i.e. realized Shannon diversity, richness, and functional dispersion), you will find the validation process I used for each of the statistical models as well as, at the end of each document, the final model fits. You will also find a document that decomposes how traits within TROLL translate into monoculture biomass, and how competitiveness within the community relates to both the species’ component traits and their monoculture biomass. I hope that you find it useful.

There are two points that we have in addition to our central task for you. They are:

1. Could you look at the additional graph, "64\_speciesCommunities\_overTime.pdf", and help us understand why some species seem to increase monotonically before collapsing, while others are significantly more stochastic?
2. Your prediction that relationship between productivity and biomass is negative or nonexistence without seed rain was true (TROLL\_64\_species\_Productivity\_vs\_Monoculture.pdf). With seed rain, however, it seems that the relationship is positive.

And finally, I would like to point out that there is no valid model for realized richness that includes separate estimates for the planted richness treatments. This is because, with seed rain (of which we used the 100% level throughout), there was no variation within the treatment levels.

We’d like to set a deadline of **26.04.20** to return your thoughts. If that isn’t enough time, let me know and we can arrange something different. In a few days, I will also send a Doodle to everyone in our sub-group to arrange a discussion of the results in preparation to write the manuscript in May.

Don’t hesitate to email me if something is unclear, or you need other graphs from me!

Best,

Mike