2025 PhD Daily Log

Mao

2025-09-23

Contents

September 16, 2025

Tasks for the Day

- Finish the phylo tree for mastTrait
- Bayes meeting
- Figured out the DPI problem

Notes / Study Summary

Figured out how to make a circular tree. You can do it in the fancy way by using ggtree package, but I didn't get it working for me sadly. I used the basic plot function, just make the type to be "fan", and you can get a circular tree!
Jenna presented at the Bayes meeting today on bumble bee foraging. Her key question is that she has data collected at different time which is closely related to flora resources quality etc.. The final suggestion she got is adding a weighed term account for the proportion of data collected in certain time.
Didn't really get too deep into the DPI problem, I will try to test on a few tmr see if it worth doing the hand measuring or just redo all the scanning.

Challenges / Questions

- Do I want to calculate the DPI, which might not be that accurate. Or re-scan everything...

Ideas / Next Steps

- I will do some calculation on DPI for now, let's see if it works...

September 17, 2025

Tasks for the Day

- Finish the phylo tree for mastTrait
- Figured out the DPI problem

Notes / Study Summary

Made the tree with masting info for mastTrait and updated the tree for egret. Learned some new plotting techniques which I will add to my cheatsheet soon.
Ended up wfh today because I planned for lunch with Miah, I will continue with the DPI problem tmr.

September 18, 2025

Tasks for the Day

- Clean the flowering time data
- Finished the first chapter of Probability
- Prepare some flash card on cone reproduction

Notes / Study Summary

I ended up realize that there are more data available on the USDA Fire Effects Information System website, including more masting information, soil and climate info. I decided that I would record the climate (moisture and temperature) and soil (dry/wet) to account for the different environments. I also read about the vegetation types in North America which I wonder if I can also use for my analysis. Anyway, I think the collecting and cleaning data might take me another week.
I finally decided to rescan all the tree cores just for a more confirmed DPI without introducing too much error.

Challenges / Questions

- How to classify these species into different environment categories? Now I have climate, soil (dry/wet), biome and elevation maybe?

September 19, 2025

Tasks for the Day

- Continue getting more data for mastTrait
- Catch up on climategrowth repo

Notes / Study Summary

Got more data for mastTrait, decided to get data on whether they have an effective seedbank as well since that data is available on USDA. This can be used as an indicator of seed longevity maybe.
Didn't really get too much on the climategrowth repo, I think I am a bit confused.

Challenges / Questions

- I think I have too much to catch up on climategrowth repo.

Ideas / Next Steps

- Maybe try to read the issues and talk with Victor?

September 22, 2025

Tasks for the Day

- Continue getting more data for mastTrait
- Catch up on climategrowth repo
- Training on 3322
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Notes / Study Summary

Got more data for mastTrait, found another new website providing some lifespan and reproduction age data: The Gymnosperm Database. Lizzie ask for generation time for some species on climategrowth project and gave me another paper to look at.
I finally got back on scanning again. To make sure we can always check the DPI later, we captured an image of the scaler at the end of the batch. However, it seemed that adding the scaler as a sample was a bad idea. I only need to capture single sample and it would appear in the folder.
Didn't have time to work on egret

September 23, 2025

Tasks for the Day

- Continue getting more data for mastTrait
- Refine egretTree, finish my tasks on USDA

Notes / Study Summary

Challenges / Questions

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Ideas / Next Steps

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