



Macroscopic Fungal Diversity in The College Woods

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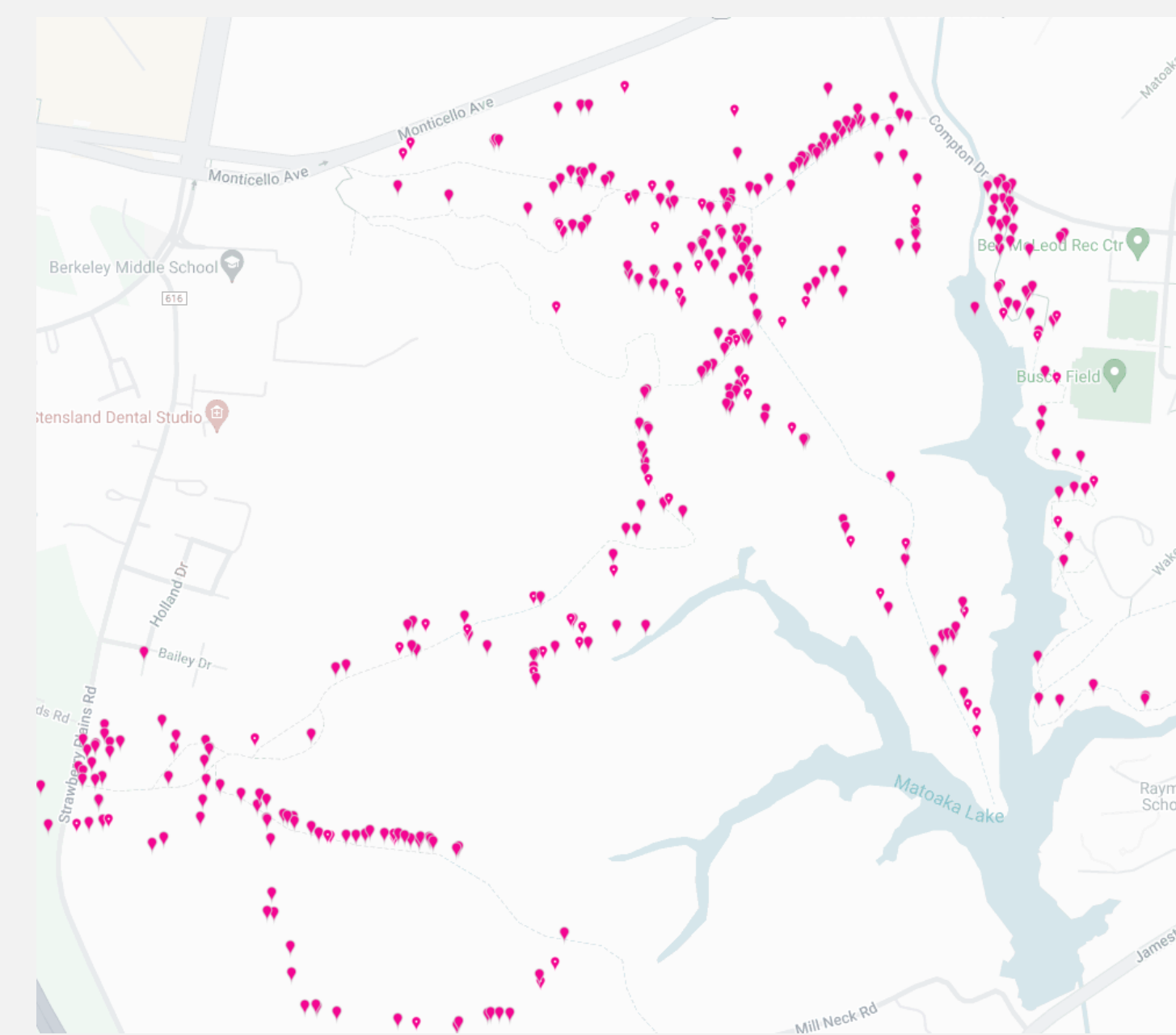
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Introduction

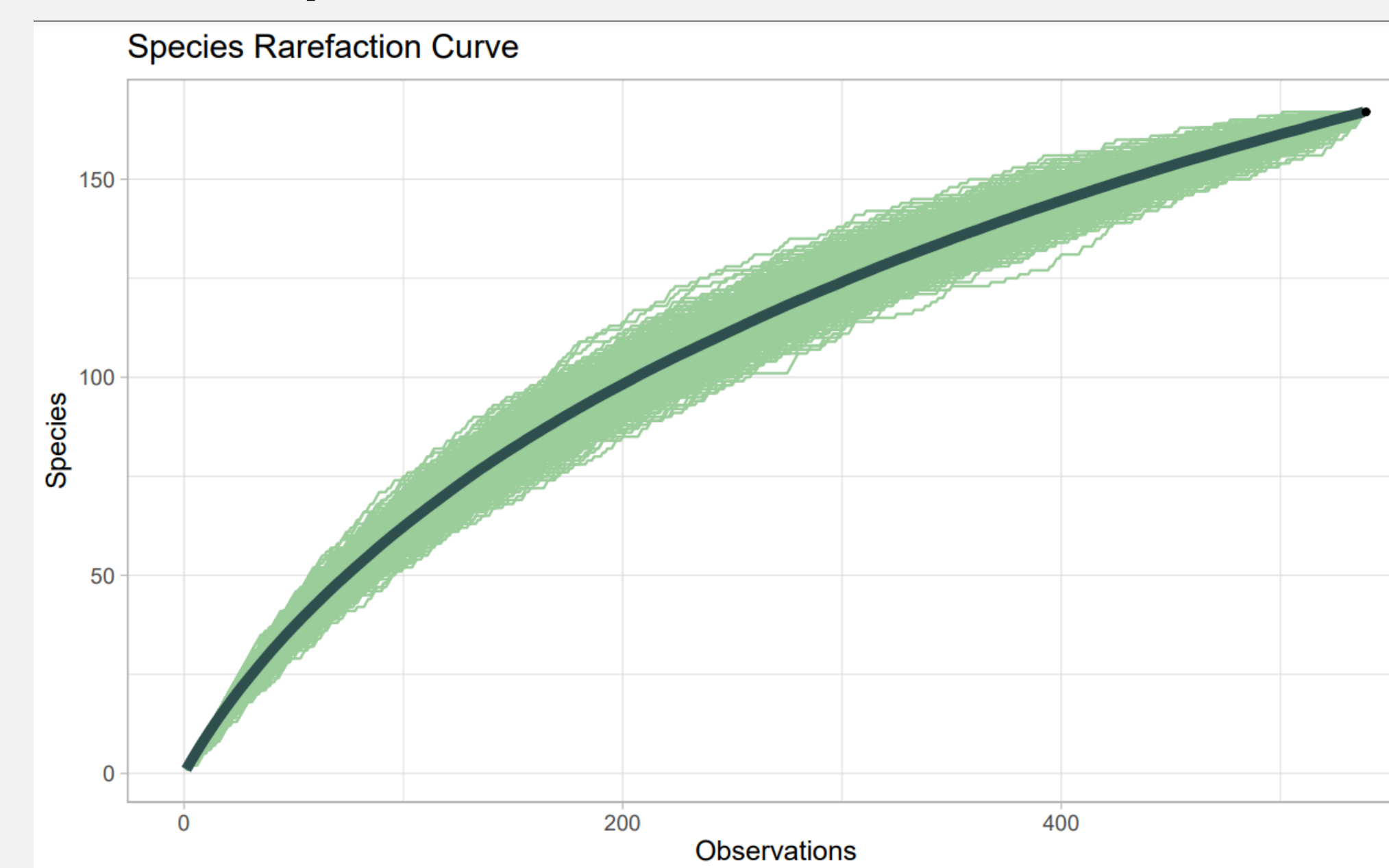
- The College Woods is a site of high biodiversity, where many plant and animal species have been documented, some of which are rare or endangered
- No formal documentation has been done on terrestrial macrofungi, reflective of how fungi have been traditionally understudied
- Fungi play important roles as pathogens, decomposers, and mutualists
- **The goal is a preliminary checklist of species and an idea of diversity**
- **Will set a baseline for future conservation efforts in the wake of development and climate change**

Results

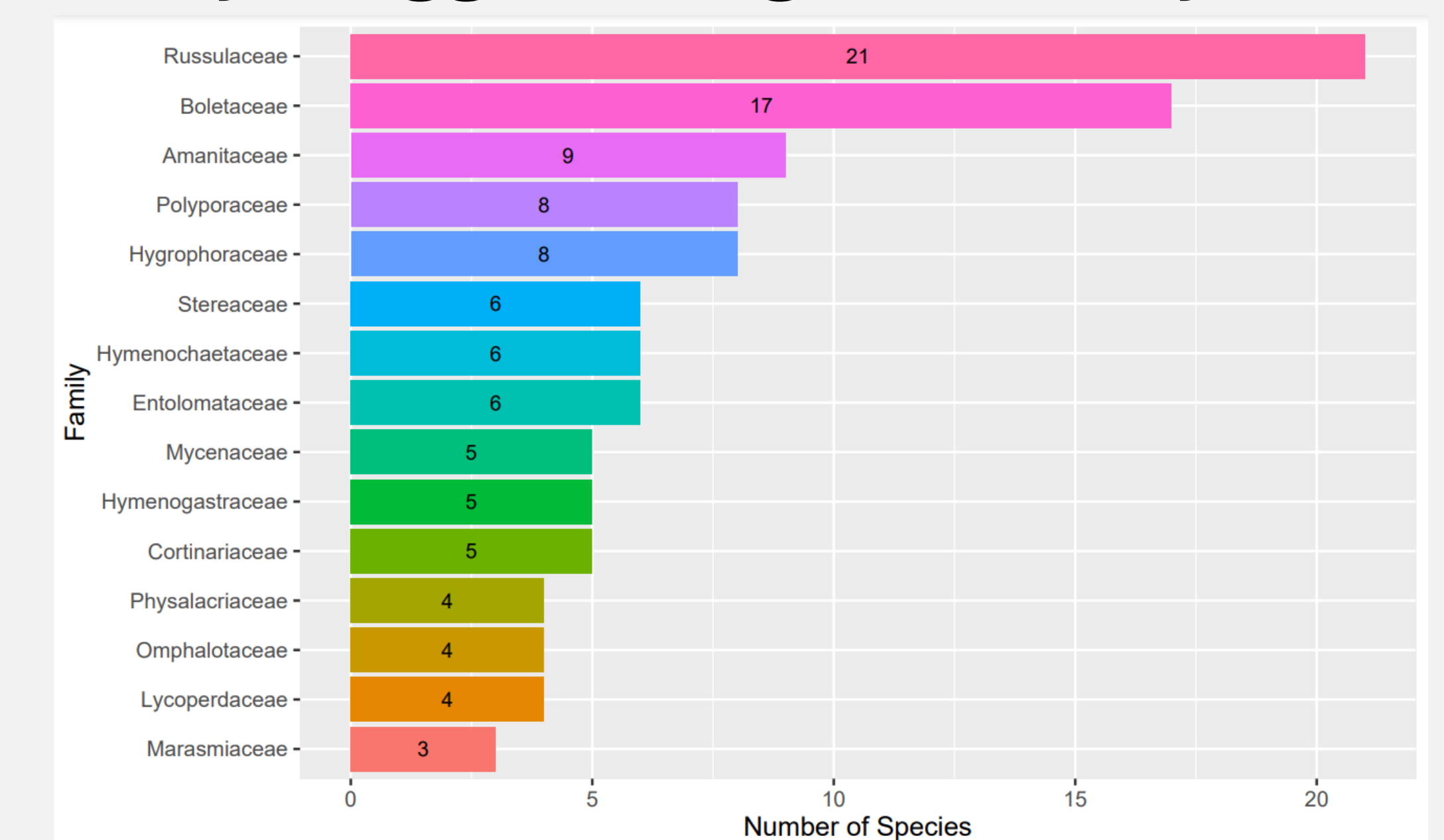
- 752 observations comprising **2** phyla, **66** families, and **198** species so far
- Wide range of ecological roles such as plant parasites, fungi parasites, ectomycorrhizal and saprotrophic (wood decaying) fungi
- Potentially undescribed species found and underrepresentation of cryptic species
- Likely a substantial number of species still not recorded in the study, suggests high diversity



Map of The College Woods and location of all observations. The woods are surrounded by developed land and bounded by roads and the William & Mary campus.



Species rarefaction curve created from the first 538 observations. Analysis was done with R version 4.2.1. The data was randomized and simulated curves were generated, producing the average curve in dark green and 1000 simulated curves represented by the light green lines.



Most common families. The abundance is based on how many species were found for each family. Russulaceae is the most abundant followed by Boletaceae. The graph is limited to the 15 most abundant families, however others were found and not included on this list.

Methods

- Study started in September 2023
- Opportunistic sampling approach
- Routes chosen to avoid area previously sampled, teams of 2 walked side by side recording any fruiting bodies found
- For each observation, multiple photos were taken and information recorded like what trees were nearby or growing substrate
- Uploaded to iNaturalist (a database), identified using keys and field guides
- One sample from each species collected, dried for 24 hours, and will be stored in William & Mary herbarium

Discussion

- Macrofungal surveys are the only way to reveal what species are producing sporophores (mushrooms) at any given time
- The woods are home to rare, unique, and commercially important fungi, which can now be monitored
- A key limitation is lack of genetic information, which would reveal cryptic species and those not producing mushrooms when sampling occurred



A sample of the fungi found in The College Woods. Top left (*Multifurca ochricompacta*), a rare fungi, top right (*Laetiporus cincinnatus*) a choice edible, bottom left (*Tolypocladium capitatum*) a truffle parasite, bottom right (*Ramaria sp.*), a poorly described species

Future Directions

- Verify identifications with DNA analysis
- DNA based survey in the woods
- Continue to survey to assess changes in populations

Acknowledgements

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References:

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