

FUNGI OF THE NATL

Introduction

The purpose of this project was to inventory macrofungi from the different ecosystems within the University of Florida's Natural Area Teaching Laboratory: Hammock, Upland Pine, Old Field Succession, Stormwater Ecological Enhancement Project (SEEP), Walker Conservation Area, and NATL-East. After fungal specimens were collected from the various ecosystems, they were identified at least to genus, and to species if possible. Specimens were then dried for preservation and deposition in the UF Herbarium to serve as reference material for future projects.

The project was funded by the 2013 NATL Minigrant Program. The research team was comprised of Sonja Mullerin, who received the Master of Science degree in Forest Resources and Conservation in August 2013; Nina Zagvazdina, a joint M.S. (Entomology) and Doctor of Plant Medicine student ; and Kshitij Khatri and Naweena Thapa, current graduate students in the Department of Plant Pathology at UF. They were advised by Matthew E. Smith, Ph.D., Assistant Professor in the UF Plant Pathology Department and the students' Mycology professor in Fall 2012.

Materials and Methods

The different ecosystems within the NATL were surveyed at different times by team members between February and October 2013, with special attention after rain events, when fungal fruiting bodies are more likely to appear. When fungi were observed, location, substrate, date, collector's name, and any distinctive observations were recorded. The fungi, primarily basidiomycetes (mushrooms) as well as a few ascomycetes (lichens) and oomycetes (water molds), were hand-collected, assigned a catalog number, and photographed. Since mushrooms

(the fungal reproductive structures of some basidiomycetes) often emerge in aggregated clumps, multiple fruiting bodies that clearly belong to the same species were treated as a single specimen and assigned the same number. Specimens were placed in plastic bags and either identified in the laboratory immediately after collection, or refrigerated for possible later identification.

Fungi were identified using dichotomous keys provided in the works listed in the bibliography. These keys depend on evaluation of a number of characters, such as presence (or absence) of a stipe; shape and type of attachment (central or lateral) of any stipe; size, color, and ornamentation of cap and stipe; gilled, tubal, or hydroid hymenium; habitat; smell; and sometimes taste. Spore prints are often invaluable in identification, and were made by slicing off the stipe flush with the cap, and placing the cap on a piece of white paper with the hymenium facing downward for one to two days. Often the use of both dissecting and compound light microscopes was necessary, as well, to determine spore size, shape, and color. Identifications were confirmed by Dr. Smith.

In addition to the team's 2013 collection, dried fungi collected from the NATL by other students in Dr. Smith's Fall 2012 Mycology course were examined and their identification confirmed using the literature or Internet sources. These fungi were added to the spreadsheet, even though many did not have specific ecosystem information. Other fungi found by Dr. Smith in NATL East in December 2013 were also added to the inventory.

Results:

Table 1. Macrofungi Inventory, 2012-13.

Collection Date	Genus	Species	Ecosystem
9/22/2012	<i>Xeromphalina</i>	<i>campanella</i>	
9/4/2012	<i>Armillaria</i>	<i>tabescens</i>	
11/9/2012	<i>Nectria</i>	<i>cinnabarina</i>	
9/14/2012	<i>Ganoderma</i>	<i>lucidum</i>	Upland Pine; Hammock
9/30/2012	<i>Hexagonia</i>	<i>hydnoides</i>	
9/14/2012	<i>Cryptothecia</i>	<i>rubrocincta</i>	
11/22/2012	<i>Myriostoma</i>	<i>coliforme</i>	
9/14/2012	<i>Lentinus</i>	<i>lepideus</i>	
4/26/2013	<i>Gymnopilus</i>	<i>sp.</i>	
9/14/2012	<i>Daedalea</i>	<i>quercina</i>	
9/2012	<i>Trametes</i>	<i>versicolor</i>	
9/16/2012	<i>Cortinarius</i>	<i>perferrugineus</i>	
11/9/2012	<i>Trichaptum</i>	<i>biforme</i>	
9/14/2012	<i>Hydnellum</i>	<i>aurantium</i>	
07/27/13	<i>Gaestrum</i>	<i>saccatum</i>	Hammock
10/9/2012	<i>Hydnellum</i>	<i>concreescens</i>	Hammock
11/7/2013	<i>Tylopilus</i>	<i>violantinctus</i>	
11/7/2013	<i>Phylloporus</i>	<i>rhodoxanthus sp americanus</i>	
7/16/2013	<i>Cantharellus</i>	<i>cibarius</i>	Upland Pine
4/26/2013	<i>Phellinus</i>	<i>sp.</i>	Hammock
2/16/2013	<i>Stereum</i>	<i>ostrea</i>	Hammock
5/24/2013	<i>Polyporus</i>	<i>cf. arcularius</i>	Hammock
7/27/2013	<i>Collybia</i>	<i>iocephala</i>	Old Field Succession
7/27/2013	<i>Clitocybe</i>	<i>hydrogramma</i>	Old Field Succession
6/28/2013	<i>Lentinus</i>	<i>crinitus</i>	Hammock
7/26/2013	<i>Amanita</i>	<i>spp.</i>	Hammock
7/18/2013	<i>Cantharellus</i>	<i>cinnabarinus</i>	Hammock
10/9/2012	<i>Lactarius</i>	<i>psammicola var. psammicola</i>	
9/14/2012	<i>Lactarius</i>	<i>luteolus</i>	
10/9/2012	<i>Lactarius</i>	<i>volemus var. volemus</i>	
9/6/2013	<i>Austroboletus</i>	<i>subflavidus</i>	SEEP
7/26/2013	<i>Scleroderma</i>	<i>areolatum</i>	
9/14/2012	<i>Strobilomyces</i>	<i>sp.</i>	
9/14/2012	<i>Boletus</i>	<i>sp.</i>	
2/16/2013	<i>Stereum</i>	<i>sp.</i>	Hammock
6/13/2013	<i>Pleurotus</i>	<i>spp.</i>	Hammock
6/13/2013	<i>Agaricus</i>	<i>pocillator</i>	Hammock
7/26/2013	<i>Amanita</i>	<i>cf. flavoconia</i>	Hammock
7/26/2013	<i>Gaestrum</i>	<i>sp.</i>	Hammock
7/26/2013	<i>Agaricus</i>	<i>subalachuanus</i>	Hammock
7/26/2013	<i>Lactarius</i>	<i>spp.</i>	Hammock
12/4/2013	<i>Suillus</i>	<i>cv. subalutaceous</i>	NATL East
12/4/2013	<i>Inocybe</i>	<i>fastigiata group</i>	NATL East
12/4/2013	<i>Tricholoma</i>	<i>caligatum</i>	NATL East

12/4/2013	<i>Hypholoma</i>	<i>fasciculare</i>	Upland Pine
1/8/2013	<i>Amanita</i>	<i>muscaria</i>	SEEP

Discussion:

Despite the generally stimulating effect of rain on fungal fruiting, much of the six-month project period was so rainy that collection capability, and possibly even fruiting, were more limited than they might otherwise have been. In contrast, the earliest days of the project, the beginning of summer, were hot and dry, so there were few or no fruiting bodies for that reason, except for polypores (conks), which are perennial. Another factor in any record of diversity is the necessity for speedy identification of samples, since they deteriorate quickly.

Even so, 50 different species of macrofungi were confirmed present in the NATL. Of those where habitat was documented, 15 were found in the Hammock, two in Old Field Succession, three in Upland Pine, and two in SEEP. Another three were found near the Entomology Building, effectively part of NATL East. The other 25 species did not have specific ecosystem information. Most of the specimens were identified to species, with nine identified only to genus.

In addition to this report, team members have created a new page for the NATL website, where photographs of the fungi can be viewed in conjunction with the collection data.

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