

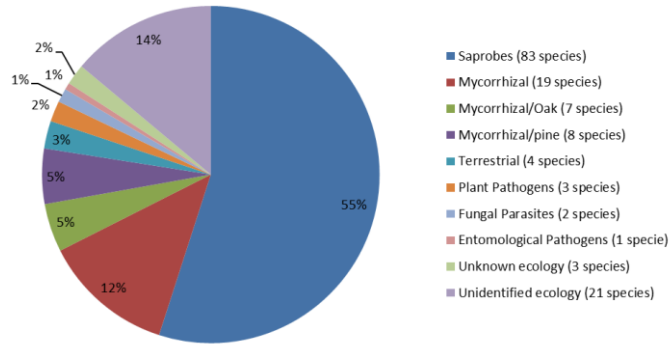
Mycological Survey of a Property in Western Johnston County, NC

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Species surveys are an important tool for monitoring biodiversity and the health of the environment. A difference in the number of species or in the percentage of species per ecological role may indicate changes in the environment. As such, an initial benchmark measurement provides the necessary basis of comparison for future observations. In this project, a list of macrofungal species was compiled for a property in Willow Spring, North Carolina, for the year 2019, over the course of 51 weekly forays, to produce such a benchmark. A secondary objective was to research the ecological roles filled by these macrofungi. This project resulted in a list of 151 species of macrofungi representing three major ecological roles, which has since been used as the basis for continuing research on the property.

Highlights From the List

Observed Ecological Roles Of Fungi



Saprobies



Agaricus vinosobrunneofumidus



Mycena epipterygia var. viscosa



Thelephora terrestris (growing with purslane)



Tricholoma caligatum

Pathogens



Gymnosporangium clavipes



Beauveria bassiana

Mycorrhizal

Unknown Ecology

It is unclear if *N. vitellina* is mycorrhizal or weakly pathogenic with pines. A collection from this property was the first vouchered specimen from North Carolina.



Neolecta vitellina



Above is a map of the property which is 0.92 acres in Johnston County. It is a private residential lot with two soil types and is wooded with loblolly pine, water oak, sweet gum, and red maple. The property was surveyed on the same day of every week, for a total of 51 weeks in 2019, to document every macrofungus possible. Only visible fruiting bodies were listed. Notes included the morphology, growth habits and habitat of the individual fungus. As the project progressed, potassium hydroxide (KOH) and Melzer's reagent were acquired. Field guides with keys and internet resources, as well as occasional professional assistance, were utilized.

Over the course of 51 weekly forays, 151 species were documented. Ninety-eight species (approx. 65% of the total) were identified to at least family or genus; 38 were identified to the species (approx. 25% of the total). The majority of the documented fungi were saprobic with 83 species (55%) identified as saprobies. The next largest ecological group was mycorrhizal fungi with 34 species (22%), with 7 species known to be mycorrhizal with oaks, 8 species known to be mycorrhizal with pine, and 19 species that are mycorrhizal with several host tree species. Other identified ecological groups include plant, fungal, and entomological pathogens. Three of the identified species have ecological roles that are unclear to science as of yet. The ecological roles of the remaining 21 unidentified species could not be determined.

Preliminary comparison with data from 2020: Pending further analysis, it appears up to 80 species that fruited in 2019 were not observed in 2020. Approximately 70 species observed in 2019 were also documented in 2020. More than 60 new species were documented in 2020, potentially growing the cumulative species list for the property to as many as 210 species.

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