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Final Report: An Inventory of NATL's Resident Mosses

## **Introduction**

Mosses constitute one the most overlooked of all the major plant divisions. Despite being more species-rich (~12,000 species) than several major vascular plant divisions such as the ferns, cycads, and conifers, public knowledge of these non-vascular and minute plants is limited. Confounding this further is the fact that very few mosses have well-established common names and those that do are not readily distinguishable to those without a background in bryology. It is not common for natural areas to inventory mosses in their biotas, partly due to the difficulty in identifying species of moss, which often must be done with a microscope, and also due to the lack of recent identification keys for many parts of the world.

This inventory aimed to contribute to the Natural Area Teaching Lab's exhaustive and continually-updated list of plants by working to identify the present species using existing keys for Florida. Importantly, this project also sought to increase public awareness of mosses at NATL by creating interpretive signs with information on the moss diversity present, including defining characteristics that could be used by both scientists and the public to start to get an idea of the different shapes, sizes, and colors of moss, as well as their specialization on different substrata.

## **Methods**

Plants were collected from plots from both NATLe and NATLw, including each public trail (hammock, old field, upland pine, SEEP) and the parking lot. The key used for identification was

Breen's Mosses of Florida (1963), as well as the Flora of North America keys. Most mosses required identification with a high-powered microscope from freshly collected material mounted on glass slides with no additional staining.

## Results

In total, we documented 10 different species at NATL, listed in Table 1, representing an incredible diversity of 10 different families. These 10 species were all native to Florida and generally consisted of common plants with a worldwide distribution (eg *Funaria hygrometrica*), worldwide tropical distribution (eg *Octoblepharum albidum*), or Eastern US distribution (eg *Cryphaea glomerata*). Only in *Funaria hygrometrica* were reproductive structures directly observed, although the observation period was narrow.

## Discussion

Overall, the diversity of moss species at NATL closely matches the vouchered specimens from the University of Florida and Alachua County from the Florida Museum of Natural History Herbarium.

Several species (*Isopterygium tenerum*, *Sematophyllum adnatum*, and *Leucobryum albidum*) were encountered quite frequently, while the others were very sparse or highly constricted to one particular substrate. These differential characters were used as an educational tool for highlighting some practical differences in the species on the interpretive signage. For example, *Octoblepharum albidum* could be distinguished from the superficially similar *Leucobryum albidum* by its habit of only growing on *Sabal palmetto* trunks. Another, *Leptodictyum riparum*, was distinguished by being an emergent aquatic. *Cryphaea glomerata*

was only found on hardwood trees in the hammock area and had a unique “reaching” habit. The glossier species such as *Sematophyllum adnatum* and *Isopterygium adnatum* were distinguished from dull species such as *Thuidium delicatulum* or the silvery *Bryum argenteum* (though, importantly, *S. adnatum* and *I. tenerum* were too difficult to distinguish by naked eye and therefore not addressed). For several of the species, interpretive signs were made (Table 1).

For use as an educational tool, we hope that the NATL moss flora will encourage other student scientists to undertake their own floristic inventories on underrepresented taxa. For example, two species of liverworts were observed but not fully keyed out due to being beyond the scope of the project (a *Frullania* and *Bazzania* species, Jubulaceae and Lepidoziaceae respectively). As more of these projects come to fruition, we believe that NATL will continue to develop as an invaluable tool for scientists interested in biodiversity, ecology, and a variety of other disciplines.

Table 1. List of moss species encountered in the inventory, including family and location within NATL. Species which received an interpretive signed marked with •

<b>Moss species</b>	<b>Family</b>	<b>Location</b>
<i>Bryum argentum</i> •	Bryaceae	parking lot
<i>Cryphaea glomerata</i> •	Cryphaeaceae	SEEP, hammock
<i>Funaria hygrometrica</i> •	Funariaceae	old field, parking lot
<i>Isopterygium tenerum</i> •	Hypnaceae	hammock
<i>Leptodictyum riparum</i> •	Amblystegiaceae	SEEP
<i>Leucobryum albidum</i> •	Leucobryaceae	upland pine, hammock
<i>Octoblepharum albidum</i> •	Leucophanaceae	hammock
<i>Oxyrrhynchium hians</i> •	Brachytheciaceae	old field
<i>Sematophyllum adnatum</i>	Sematophyllaceae	hammock
<i>Thuidium delicatulum</i> •	Thuidiaceae	hammock