Bryophytes, numbering about 16,000 species in three phyla of the Kingdom Plantae, are second only to flowering plants (about 250,000 species) in the number of plant species known to exist on earth. Mosses (Phylum Bryophyta) are the most abundant of the three bryophyte groups worldwide, with nearly 10,000 species. Liverworts (Phylum Marchantiophyta), account for approximately 5,000 species, and hornworts (Phylum Anthocerotophyta) species number about 200. Illinois' flora includes an excellent array of bryophytes, with approximately 250 species of mosses, 160 species of liverworts, and four species of hornworts. Bryophytes are found statewide in Illinois occupying diverse habitats, including disturbed ones, like plowed fields and roadside banks, as well as native woodlands and grasslands. They commonly grow clumped together in mats or cushions on trees, logs, rocks, and soil, and may be submerged in or floating on water. The majority of the state's bryophytes grow in mesic woodlands and canyons, where small, specialized environments, known as microhabitats, exist. Many bryophyte species are found in only one microhabitat, although some species are widespread. The 25 species on this poster illustrate both the diversity of Illinois bryophytes and the variety of microhabitats in which they grow. The major conservation concern for bryophytes is loss of microhabitat diversity.

**Species List**

**Kingdom Plantae**

Mylon Marchantiophyta Liverworts

- *Aneura pinguis* greasy liverwort
- *Conocephalum conicum* great scented liverwort
- *Pellia epiphylla* common feather liverwort
- *Radula obconica* scraper liverwort
- *Reboulia hemisphaerica* half sphere liverwort
- *Trichocolea tomentella* rivulet liverwort

Mylon Bryophyta Mosses

- *Atrichum angustatum* narrow-leaved Atrichum moss
- *Aulacomnium heterostichum* touching star moss
- *Bartramia pomiformis* spoon-leaved moss
- *Bryoandersonia illecebra* wind blown fork moss
- *Dicranum scoparium* wheat grain moss
- *Diphyscium foliosum* golden thread moss
- *Ditrichum pallidum* glossy moss
- *Entodon seductrix* Bush's flat moss
- *Fissidens bushii* hairy Grimmia moss
- *Grimmia laevigata* white cushion moss
- *Leucobryum glaucum* pear-shaped urn moss
- *Physcomitrium pyriforme* woodsy Mnium moss
- *Plagiomnium cuspidatum* juniper moss
- *Polytrichum juniperinum* compact peat moss
- *Sphagnum compactum* Alleghany bushy moss
- *Thamnobryum alleghaniense* woods Scapania liverwort
- *Scapania nemorea* woolly liverwort

Mylon Anthocerotophyta Hornworts

- *Phaeoceros carolinianus* Carolina hornwort

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**Anatomy**

The thallus of *Leucobryum glaucum* is a cylindrical stem with spirally arranged leaves, while the thallus of *Plagiochila porelloides* is a simple thallus without leaves. In both species, the thallus is dikaryotic, having two nuclei per cell. The thallus of *Leucobryum glaucum* is more branched, while the thallus of *Plagiochila porelloides* is more cylindrical. Both species have distinct dorsal and ventral surfaces. In *Leucobryum glaucum*, the dorsal surface is green and the ventral surface is white. In *Plagiochila porelloides*, the dorsal surface is yellow and the ventral surface is white.

**Life History**

Bryophytes begin their life cycle with the germination of spores, which have been produced in the sporophyte. The sporophyte is a孢子体, a diploid structure that produces spores. Spores are released and disperse in the wind or water. If the spores land in a suitable habitat, germination occurs and a new life cycle begins.

**Common Illinois Species**

There are several endemic bryophytes in Illinois, including *Bartramia pomiformis*, *Entodon seductrix*, and *Plagiomnium cuspidatum*. These species are found in various habitats, including wetlands, forests, and bogs. They are important in the ecology of these habitats and are used for monitoring environmental changes.

**Resources**

Additional information on bryophytes and their habitats can be found on the websites of the Illinois Natural History Survey and the University of Illinois. These websites provide detailed information on the species found in Illinois, their habitats, and conservation efforts.

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