



Sporophytes that grow in moss produce spores in capsules.

MOSS IS BOSS!

Appreciate the resilience, beauty and ecological utility of these prehistoric organisms

ARTICLE AND PHOTOS BY NICOLE ZEMA

Algae emerged from ancient oceans and became moss that colonized barren land 400 million years ago. Mosses are bryophytes that carpeted terrestrial landscapes long before other plant life evolved.

With hair-like rhizoid filaments instead of roots, mosses attach to surfaces, absorbing nutrients directly through surface tissues, unlike vascular plants. Spindly sporophytes produce spores within a capsule, eventually released and dispersed by wind and rain.

"I like mosses because they're so ancient that they pre-date flowers," said Samantha House, education specialist at Shenandoah River State Park. "It can grow on just about anything it can grab on to."

Though tiny, the ecological role of moss is outsized—providing habitat for insects and other invertebrates, or nesting materials for some bird species. Bryophytes help stabilize soil, reduce erosion, and are natural sponges for water retention. Mosses also improve water infiltration for soil, supporting plant growth and overall ecosystem health. Though resilient enough to sequester carbon, moss can indicate the presence of pollution or contaminants.

To fully appreciate the diversity of Virginia mosses, go slow and get low.

Shenandoah's emerald exhibition

Two "March Moss Madness" hikes took moss-spotters along the state park's Cottonwood Trail around St. Patrick's Day.

"What better way to celebrate St. Paddy's Day than hiking to search for moss—nature's green carpet," House said.

The park supports 208 species of moss and 58 species of liverwort. These nonvascular plants grow on soil, rocks and bark in a range of environmental conditions.

"Especially wherever there is moisture and shading," House said. "Even in Arizona, I was surprised to see it growing right there in the sun, where water from a natural bridge fell into the creek."



Shenandoah River State Park education specialist Samantha House leads moss-spotting hikes, where enthusiasts can find over 200 species of moss.

Her Moss Madness hikers stopped to admire species along the woodland trail.

Seductive entodon moss (*Entodon seductrix*) is versatile, thriving in both shade and sun, and looks like small wires with tapered leaves forming sharp points.

"You've got to love the name!" House joked.

The species is commonly used in green roofs, living walls and moss lawns.

Cultivating a backyard carpet

The botanical simplicity of moss ironically makes it hard to eliminate.

"So why work against Mother Nature?" mused Virginia Tech professor Mike Goatley, a turfgrass specialist with the School of Plant and Environmental Sciences. "If moss is already growing on your property, it indicates that environmental conditions are favorable for it."

Elizabeth McCoy, a former Master Gardener with James City County Williamsburg Master Gardener Association, began encouraging moss as a groundcover in shady parts of her garden several years ago.

"I picked up small bits of moss and transplanted them to where I wanted more to grow," she said.

Transplanted moss can be secured with a small stick or floral pins.

"Then you press or step on it firmly to ensure there is good adhesion between the bottom of the moss and the new surface," McCoy said.

Some nurseries sell living moss.

"But most of us can easily collect small bits recovered from the spaces in a sidewalk or along a foundation to propagate larger areas of cultivated moss."

Happy moss will tend to itself, McCoy said.

"Moss brings beauty and calm to our garden spaces," she concluded. "It doesn't need fertilizing or mowing to stay beautiful year after year. Gardening with moss is gardening with nature in its purest form!"

Other moss species along the Cottonwood Trail:



Spoon-leaved moss



Pincushion moss



Common fern moss

Spoon-leaved moss (*Bryoandersonia illecebra*) is abundant, with sprawling mats of worm-like leaves.

Pincushion moss (*Leucobryum glaucum*) forms cushion-like dome shapes in dense clusters.

Common fern moss (*Thuidium delicatulum*) boasts feathery fronds that form a carpet across grass or bare patches of ground.

Seductive entodon moss (*Entodon sedatrix*) sprouts sporophytes that produce spores within a capsule.

Rose moss (*Rhodobryum ontariense*) grows in clusters of toothy green flower-like shapes.



Seductive entodon moss



Rose moss

Become a moss boss in your garden

- Mosses should be watered with rainwater or distilled water.
- When establishing a new moss planting, mist it frequently.
- Remove unwanted vascular plants as they appear.
- Regularly blow yard debris away from mossy areas.
- Do not remove moss from public parks or private property.
- For successful transplanting, find a spot that matches the original environmental conditions.
- Be patient as it may take several growing seasons to get a lush carpet of moss.
- Consider stepping stones in the most trafficked areas of moss gardens.

— *Tips compiled from JCCW Master Gardeners and Virginia Cooperative Extension*

Mosey Virginia's mossy trails

Future Moss Madness hikes are planned at Shenandoah River State Park.

Visit:

dcr.virginia.gov/state-parks/events to see all upcoming events.

Or take a self-guided moss hike from the Massanutten Shelter parking lot at 350 Daughter of Stars Drive in Bentonville.