

Myths About Moss

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Clarifying a few misconceptions

Whether you admire moss for its utility and virtue or curse its colony on your roof, you are looking at a very ancient plant. Along with its close relatives, the hornworts and liverworts, true moss dates in the fossil record to 330 million years ago, to a time when the earth's crust was still quite young, when colonies of life had yet a very tenuous foothold. Mosses formed a living bridge, helping transform barren earth into land able to support complex plant communities and intricate food chains.

Those of us who live in the Pacific Northwest know that mosses thrive in a rainforest. But did you know that mosses can be found clinging to rock, thick volcanic ash or compacted ground that is barren, nutrient-poor and ravaged by sun and wind? The estimated 12,500-15,000 species worldwide have been found thriving at all times of year, on all soil substrates, in arid climates and rainforests, from sea level to alpine elevation, even submerged in water. They are known to provide homes for invertebrates. The moss *Daltonia angustifolia*, for example, grows on the back of a New Guinea beetle, a hard shell characterized by ridges, depressions and hairy surfaces that aid in trapping moss spores. The beetle enjoys it as camouflage.

Moss lacks true roots. It has rhizoids which serve to anchor the plant but do not actually extract minerals and water. Nor does it have a vascular system to conduct nutrients within itself. Instead, nutrients pass directly through its leaves. Virtually all mosses contain chlorophyll; none have flowers; and all produce spores rather than seed.

In a garden, mosses continue to serve very important functions as nutrient recyclers, moisture retainers, erosion preventers, habitat for beneficial insects and organisms, and living mulch. As a lawn alternative, between stepping stones in a walkway, or as contrast in a rock garden, their low-maintenance, softening possibilities are infinitely worthwhile.

Unfortunately, myths about moss abound, or we would see moss more commonly among our favorite plants. Allow me to clarify a few misconceptions.



Left: Haircap mosses can be found on gravelly soil, not on weed. The stalks vary in height and carry the spore capsules. **Center:** Hanging moss or “balloon moss” can be found on living or dead trees in mixed deciduous/coniferous woodland, where it thrives with winter light and moisture. **Right:** The picturesque roof on this garden shed was covered in moss for more than 30 years before the excess weight and moisture began to cause leaks. *Photos by Christine Farrow / WSU Skagit County Master Gardeners.*

Myth 1: Moss is slippery and dangerous to walk on when wet.

Not exactly. Moss itself is not slippery, but in some circumstances, moss can grow alongside algae or lichen (which has a symbiotic relationship with algae). It is algae that can be slippery, particularly on concrete sidewalks and decking in wet weather that may account for the association.

Myth 2: Moss kills a lawn.

Mosses grow anywhere they are well-adapted and lack competition, including a lawn. However, they are not harmful to grass or other plants. If your lawn is losing ground to moss, it may be due to cultural factors that create an unhealthy lawn, like deep shade, high soil moisture, poor drainage, soil compaction, and/or high acidity. Some mosses thrive in these conditions. To rid your lawn of moss, focus first on optimal growing conditions.

Myth 3: All that appears to be moss is moss.

Not all moss-like plants are moss:

- **Sphagnum**, commonly peat moss, is a small class of the phylum Bryophyta and, therefore, a true moss.
- **Spanish moss**, *Tillandsia usneoides*, is a flowering plant that grows on trees and is biologically unrelated to moss; it is an angiosperm in the Bromeliad family.
- **Scotch moss**, *Sagina subulata*, is also a flowering plant, an angiosperm.
- **Club mosses**, of which there are several in the PNW, and which are thought to be structurally similar to the earliest vascular plants, are nonetheless lycopodium.
- **Sea moss**, also called Irish moss, is *Chondrus crispus*, a species of red algae.
- **Reindeer moss**, *Cladonia rangiferina*, is a lichen.



Left: Sphagnum moss, or bog moss, is an increasingly rare wetland plant in the wild. The moss has a tremendous ability to hold and retain water. It also creates very high acidity in the soil. **Above:** Several thousand varieties of moss and lichens grow in the Northwest. This cedar fence rail in Mount Vernon has become a mini-sampler garden with at least a dozen different species. *Photos by Christine Farrow / WSU Skagit County Master Gardeners.*

Myth 4: Moss releases spores that aggravate allergies.

It is the pollen (which are not spores) of trees, grasses and weeds, as well as fungal spores that aggravate allergies. Moss spores are generally non-allergenic.

Myth 5: If you have moss, you will have mold.

That moss and molds are related is not true. However, molds (which are fungi) may attack moss as it might attack anything organic. Mold infested moss will die back and decay.

Myth 6: Moss makes an attractive living roof.

While many people enthusiastically desire moss as a living surface on rooftops, roofing professionals say that growth of moss rhizoids into tiny cracks in the roofing materials, accelerates their degradation and eventually causes leaks. This is particularly true of cedar shingles. It evidently grows under the edges of shingles, loosening them and producing roof leaks. Moisture held by the moss, if allowed to wick beneath the roofing material, may enable mold to develop. (Oregon State University Extension and Experiment Station Communications; Niemiec & Brown 1993). So while a green roof may be appealing, it may negate the purpose of your roof.

Myth 7: A blended concoction of buttermilk and moss sprayed or painted on the desired surface is the best way to grow moss.

There is little available research on starting moss using a blended concoction. If a buttermilk slurry doesn't become a moldy mess, it may work only for certain species. The best available sources suggest that transplantation of divisions, filling in with a slurry of blended water and moss fragments, offers the best results. Potter's clay with fish emulsion or buttermilk with egg have been suggested as blender additions, possibly as sticking agents for rock and clay surfaces. You may certainly try them, but there is no guarantee of the result.

To learn more about mosses, attend the upcoming Know and Grow Workshop, February 18 at 1 PM in the WSU Mount Vernon Northwestern Washington Research and Extension Center auditorium at 16650 State Route 536 (Memorial Highway). Master Gardener Deborah Smeltzer will include them in her talk, "Lichens, Moss, Mold and Mildew."

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