Garden Moss: Friend or Foe?

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By Valerie Jean Rose

> "A rainy day is the perfect time for a walk in the woods... all the lichens and the mosses have come alive with green and silver freshness."
>
> Rachel Carson, from *The Sense of Wonder* (1965)

Mosses bring an array of green hues to roofs and sidewalks, lawns and rocks. We may get depressed from our region's many moist months, but for mosses, precipitation is always welcome. Anything out in the rain seems fair game for a mossy presence: tree bark, boulders, the edges between shingles, flowerpots, even the occasional car.

In our soggy climate, moss grows mostly on the north side of things, where it enjoys plenty of shade. If you're lost in the woods without a compass or GPS system, just look for moss on trees and rocks – it will generally face north. However, the rest of the directions are up to you.

Back home in your yard, moss may be established in your lawn, between paving stones or in patches of your garden. While I do remove moss from my roof shingles, I welcome these furry green pockets around the yard. Moss has always been a magical part of the landscape, especially in my childhood years of play. The plush green mounds made perfect cushions and flying carpets for dolls and other toys. The clusters of thousands of tiny plants added substance and magic to the miniaturized world of my imagination.

Now I've learned that these tiny plants are called bryophytes, with leaves usually only one cell thick. Minute rootlets connected each plant to a long horizontal tube called a protonema. Thousands of bryophytes, woven together by promonemas, create miniature forest-like clusters that have been using the same reproductive strategy for a very long time.

Life Cycle of Mosses

Until about 450,000,000 years ago, give or take a few millennia, algae were the only plants on the planet. Mosses were among the first land-based plants, along with ferns and horsetails. These primitive plants reproduced by spores - flowers and seeds, birds and bees hadn't yet been invented. Some of those spores are preserved in fossils – their function has literally remained the same for ages.

Reproduction involves two generations of mosses. The first, called gametophytes, are male or female. The female plants provide an egg cell at the top, while male plants develop sperm cells. These cells swim through the film of water on the moss, to find and fertilize the egg cells.

Variegated moss brightens the entrance to the Moss Garden at the Bloedel Reserve on Bainbridge Island. **Photo by Richard Brown / Bloedel Reserve**

The fertilized egg cell develops into the second generation plant, or sporophyte, growing from the top of the female gametophyte. The egg cell develops into a spore capsule. The capsule breaks, spreading tiny, dust-like spores. A spore landing in a moist location will grow into a tube-like protonema, which in turn grow new gametophytes. Both generations will be present in a bunch of moss.

About 12,000 species of existing moss have been identified. Sphagnum moss is a genus of at least 150 species of moss – sphagnum peat moss is the decaying mat of vegetation growing beneath the living layer on top. Compacted over thousands of years, peat is cut from bogs and dried. Since it can absorb 20 times its weight in fluids, peat moss is a perfect material for diapering infants. Until the mid-20th century, peat moss was a dressing for wounds. In arctic climates it's used for insulation, and in many regions is burned as fuel.

Peat moss is commonly used to break up heavy clay soils, a familiar element of many Skagit gardens. But large-scale peat harvesting is not sustainable, taking millennia to compress sphagnum moss into blocks that can be harvested in days. Coco coir, the outer fiber of coconut shells, is an absorbent material that serves gardeners as an effective substitute.

Friend or Foe?

Some people curse moss for interrupting the carefully cultivated grassy monoculture around their house. During summer's inevitable dry spell those lush, green mosses become dormant, dry and brown. People complain, "The moss is killing my grass!" But moss is the symptom, not the cause. It flourishes wherever water accumulates in a lawn, where soil is compacted, drainage is poor, and sunlight is rare.

These common conditions can be changed by adding a small pond where water already accumulates, or creating a rain garden with a properly sloped channel for drainage. And if you replace the lawn with a garden, there's no grass to maintain or defend.

Gardens of Moss

If you are inspired to welcome moss to your garden, or add to existing patches, this is the perfect time of year to make mosses feel at home in your yard. You can prepare the chosen site by weeding and raking the surface, or by smothering existing plants under sheets of cardboard, covered by at least six inches of mulch. Water the mulch or soil thoroughly.

You can buy mosses from nurseries, or, if you have legitimate access to woods where large amounts of moss can legally be removed, you can harvest patches of moss. Transplant them about one foot apart. They will grow into a solid carpet, though you will need to weed and water. Until they fill in the bare spaces, you can secure the patches by spreading chicken wire on the ground, pinning it with rocks or large wire staples.

Friend or foe, moss is a permanent part of the northwest ecosystem. After all, it's been on the planet much longer than anyone reading this article. Enjoy the emerald hues that mosses add to our world, even if you're pulling it off the roof or realizing it may be better suited to our rainy world than your favorite turf.

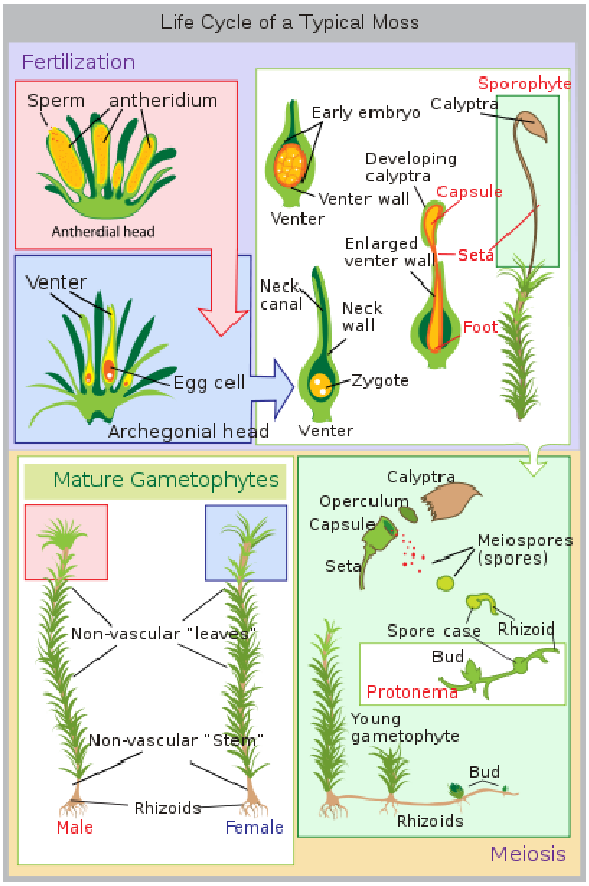

Diagram at left:

Mosses reproduce through a complex system of male and female plants, spreading by spores instead of seeds. Illustration by Mariana Ruiz Villarreal, courtesy of Wikimedia Commons.

Moss-removal techniques

If you decide to control the moss in your lawn, remember that your efforts will be temporary at best unless you change the environmental conditions that allowed the moss to thrive in the first place. Here are the basic steps to follow:

- Rake out existing moss with a stiff metal rake. If moss is very thick and heavy, a lawn de-thatcher or power rake will make removal easier.
- Correct poor drainage, and fill in low areas where water may gather.
- Thin out tree canopies to allow more light onto the lawn.
- If the soil pH is too low (below about 5.5) add lime to improve the condition of your turf and help it to outcompete weeds. The lime will not kill the moss directly.

Also note: Two plants called moss aren't technically mosses: Irish moss is really a kind of seaweed, reindeer moss is really a kind of lichen**,** and club mosses are related to ferns.

- From "Tales from the North Side: Problems With Moss," by Maria Mergel and Phillip Dickey, Washington Toxics Coalition: http://watoxics.org/files/moss.pdf

Resources:

- Moss Gardening, George Schenk, Timber Press, 1997
- How to Get Your Lawn Off Grass by Carole Rubin, Harbour Publishing, 2002
- Lawn Moss: Friend or Foe? Virginia Cooperative Extension: http://pubs.ext.vt.edu/430/430-536/430-536.html
- Bryophyte Ecology, Dr. Janice Glime, Michigan Technological University: www.bryoecol.mtu.edu