



A moss garden was a natural solution to the problem of a formerly dank, muddy hillside where little would grow. Landscape designer Cynthia Gillis collected native mosses to create this verdant, shade- and moisture-loving garden.

Making a Moss Garden

An innovative treatment for shady, moist sites

by Cynthia Gillis

It was the owner of the property who first suggested a moss garden for the steep, shaded hillside near the swimming pool cabana. As we stood sighing at the unfortunate area, he asked tentatively, "Could we plant moss here...like a lawn?" Indeed we could. Scattered patches of moss were already thriving there.

I'm a landscape designer, and I'd been working with the owners of this four-acre, wooded property in West-

chester County, New York (USDA Zone 7), for a couple of years. I was landscaping their grounds in gradual, wallet-protecting stages. So far, this particular area, a 15-ft. x 35-ft. cul-de-sac, had utterly daunted me.

Deep shade obscured the area, no breeze refreshed it, and it sloped so steeply that soil erosion was also a problem. In addition, the site was invaded by straggly forest understory trees and weeds. For guests on their way to the swimming pool changing rooms, it was a dreary trip along a dank, dark, too-narrow path.

A moss garden was the perfect solution to my clients' problem. Mosses grow best in the kind of moist, acidic,

low-nutrient soil found on the site. And there was already plenty of moss growing on the property. I just needed to collect it and transplant it.

Testing the idea

I did some test patches to see if the area would, indeed, sustain moss before I began any large, wholesale weeding and planting. I transplanted small pieces, about 6 in. to 8 in. in diameter, of five different kinds of moss that I found growing elsewhere on the property. Then I waited for two weeks, watching the mosses to find out which ones would grow well in the new location. One moss failed. The others, smooth-stalked yellow feather



Gillis collected four types of moss from the property: (left to right) smooth-stalked yellow feather moss, round-stemmed entodon, narrow-leaved crane's-bill moss and woodsy mniium.



Before planting, Gillis added water-absorbent polymer crystals to the soil. When wet, the crystals swell to 400 times their dry size, providing moisture for up to five weeks.

moss (*Brachythecium salebrosum*), round-stemmed entodon (*Entodon seductrix*), narrow-leaved crane's-bill moss (*Atrichum angustatum*) and woodsy mniium (*Plagiomnium cuspidatum*), all survived transplanting and were green and growing after two weeks, so I felt safe proceeding.

Planting the moss garden

The planting process was neither long nor complicated. Aside from the two-week test period, the whole project—weeding, soil preparation, moss harvesting and transplanting—took me about three days with the help of one assistant. That would make it a long-weekend project for other gardeners—and a very satisfying one.

Preparing the site—I thoroughly hand-weeded the area, removing all herbaceous weeds and many of the small saplings. I'd decided not to use weed-killers because I wanted to proceed immediately with planting instead of waiting for the herbicide's effect. I also didn't want herbicide drift to kill mosses already growing in the area, or the sweet woodruff (*Gallium odoratum*) and dwarf dead nettle (*Lamium*) growing nearby. I planned to incorporate more of these two shade-loving perennials into the moss garden.

When the planting area was as weed-free as I could make it, I added generous amounts of water-absorbing polymer crystals. I find these crystals useful for every kind of planting

SOURCES

It's best to collect live moss locally. The few commercial sources of live moss or moss spores sometimes sell unidentified moss, or list mosses by common names only. Buying and trying should be considered an experiment.

The following sources distribute live moss or moss spores, or water-absorbent crystals.

Allgrove Farm Inc., P.O. Box 459, Wilmington, MA 01887. Live moss. Catalog \$1.00, refundable with purchase.

Bonsai Farm, P.O. Box 130, Laveria, TX 78121. Moss spores. Catalog \$1.00.

Carolina Biological Supply, Inc., 2700 York Rd., Burlington, NC, 27215, 1-800-334-5551. Live moss and spores. Catalog \$16.95.

Connecticut Valley Biological Supply Co., Inc., 82 Valley Rd., P.O. Box 326, Southampton, MA, 01073, 1-800-628-7748. Live moss and spores. Catalog free.

Gardener's Supply Co., 128 Intervale Rd., Burlington, VT, 05401, 800-863-1700. Water-absorbent crystals. Catalog free.

A. M. Leonard, Inc., 6665 Spiker Rd., P.O. Box 816, Plaquemine, OH 45356-0816, 1-800-543-8955. Soaker hose. Catalog free.

Mellinger's, Inc., 2310 W. South Range Rd., North Lima, OH 44452, 800-321-7444. Water-absorbent crystals. Catalog free.

Ringer Corp., 9959 Valley View Rd., Eden Prairie, MN, 55344-3585, 612-941-4180. Water-absorbent crystals. Catalog free.

Stark Bro's Nurseries & Orchards Co., Highway 54 West, Louisiana, MO 63353-0010. Water-absorbent crystals. Catalog free.

Urban Farmer Store, 2833 Vicente St., San Francisco, CA 94116, 1-800-753-3747. Water-absorbent crystals. Catalog free.

or transplanting. They absorb about 400 times their volume in water, expanding to look like little, clear cubes of gelatin. As the soil dries out, the crystals slowly release the moisture they've absorbed, keeping the soil evenly moist. And as the crystals expand and contract, they also keep the soil friable and aerated. The brand of crystals I use, Terra-Sorb, comes in three sizes. I prefer the medium size for all plantings except the tiniest containers or planting holes for large trees. The medium crystals expand to about the size of a pencil eraser when wet, and are invisible in the soil when used in the recommended quantities.

At the same time, to improve soil texture, I spread 2 in. of peat moss over the area and turned it under. To increase the humus content, I also turned under a ½-in. layer of dried manure, which turned out to be a mistake. It led to the only problem we had with the planting—mushrooms, which grew from spores in the manure. The mushrooms emerged beneath the moss, lifting patches of it. The elevated patches dried out and had to be replaced.

After weeding and improving the soil, I dug shallow trenches running across the slope and buried porous soaker hose (Hydro-Grow brand, sold by Gardener's Supply Company; see Sources at left). I had used this type of soaker hose successfully before. I like the fact that it can be left in place permanently because the hose is porous, water leaks out, and none is left inside to freeze and swell. I knew that, even on a steep slope, the soaker hose would ensure the constant moisture needed to maintain a moss garden.

Transplanting the moss—As I was making plans to harvest moss, a roofer, hired to repair the roof of my clients' garage, made the happy discovery that the roof was covered with moss. I removed this moss—smooth-stalked yellow feather moss and woodsy mniium—by carefully slipping a wide kitchen spatula under it. The moss came up from the tar-and-gravel roof easily, in huge, lovely, sopping wet sheets with ½ in. to 1 in. of soil attached. I rolled it like a rug, then used large, commercial cookie sheets to transport it to the hillside.

I laid the moss just like carpet, stretching the rolls slightly to fit around rocks and the trunks of the few remaining trees. I found it easy to mold the moss sheets to the sometimes-

rugged grade changes on the hillside. I mixed the four types of mosses randomly, fitting the pieces into place like a jigsaw puzzle. The result was a patchwork of subtle shades of green. I surrounded the dead nettle and sweet woodruff plants with moss as if I were mulching them, and now their white leaves and flowers contrast with the carpet-like background of green.

If this garden site had been a flat piece of land, I'd have rolled the moss with a lawn roller after placing it. But the hillside I planted was much too steep and irregular for rolling. Where the ground was fairly flat, I walked on the moss, trying to press every piece evenly against the soil. On the steep places, I pressed the moss to the soil as hard as I could with my hands.

In some places, the slope was so steep that I was afraid the moss would slip off the hillside during a heavy rain. Here I pegged the moss patches to the soil, using short pieces of twigs. This technique held the moss firmly against the soil until it could develop root-like rhizoids to anchor itself.

Making more moss

Even with the bonanza on the garage roof, I eventually ran out of moss before reaching the end of my planting. Then I simply made more.

Because mosses reproduce from stem pieces and spores, propagating them is easy. A bed of moss of considerable size can be rapidly grown from a small patch if you use the following moss starter. My recipe calls for a handful of moss, a can of beer and ½ teaspoon of sugar mixed briefly in a blender until a thick purée forms. This creates many potential plant-forming stem pieces and the union of any fertile spore-forming parts. (Before blending, I shook the moss free of soil, but it's not necessary to rinse off clinging soil.) I've read similar recipes for starting moss that call for buttermilk instead of beer, and I have also heard that water works equally well (and less aromatically). I spread the moss and beer mixture about ¼ in. thick in the bare spots between the transplanted moss patches. In five weeks, moss had begun to grow. By autumn, the new moss was indistinguishable from the transplants, and was firmly attached to the ground.

A method for growing moss in sod-like sheets calls for putting bricks in a container of shallow water and spreading the moss purée over the surface of the bricks. Place the con-

tainer in a cool, shady place. The bricks will absorb enough water to keep the moss moist as it grows. If you spread the mixture on cheesecloth laid on the bricks, it will be easy to remove the moss after it has formed a lush, green carpet. Just peel the moss, cloth and all, off the bricks and lay it on the ground where you want it to grow. The cloth will decompose as the moss attaches itself to the soil.

Maintaining the moss garden

Because I prepared the soil so thoroughly before planting, the moss garden now requires very little maintenance. During the first summer, I weeded consistently and watered regularly with the soaker hose between rains. The combination of the soaker hose and the absorbent crystals works perfectly to maintain an evenly-moist soil, without puddling or creating wet spots. An irrigation system isn't necessary to grow and maintain a moss garden, however. Conscientious watering by any means will do just fine.

Although we had to remove some mushrooms soon after planting, there are fewer fungi now, and the moss is

adhering well to the underlying soil. A few weeds continue to appear, especially between the patches of moss. I pull them out gently. In time, as the pieces grow together, there will be fewer places for weeds to take root.

The only other chore is leaf removal. Because a rake would tear the moss up, I used a blower to push the accumulating blanket of leaves down the hillside to the sidewalk, where I swept them into leaf bags.

The effect of laying this garden was immediate. Even though the area wasn't any larger after planting, the unbroken stretch of cool-looking moss made it seem so. The once dank, untidy site, closed in by the steep hillside, is now open to view, clean and fresh looking. It even smells wonderful!

Since making the garden, I've found that almost everyone I speak to about it has a similar, hopelessly shady spot where nothing ever grows but moss. I say that the solution to this problem is moss. □

Cynthia Gillis has a landscape and garden design business in Brooklyn, New York.



Dappled light from the afternoon sun warms the moss garden, highlighting velvety, green hummocks. The brown stalks bear capsules containing spores, which will scatter in the wind, settling in damp places to produce new plants.