Cultivation NOTES BY SUE THERIAULT

Tips for Planting a Ground Cover Layer that Supports *Life*

Blue-eyed grass (*Sisyrinchium atlanticum*)
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Entomologist Doug Tallamy has taught us much about insects and the need to appreciate them. Because many are primary consumers, insects are the connection between producer plants and the rest of the food web. This is most observed when parent birds are rushing to their nests with soft, protein-rich caterpillars in their beaks to feed their hungry, squawking, fast growing hatchlings. We fill our gardens with native host plants, and super hosts called keystone species to sustain the caterpillars for these birds that we delight in watching. It is easy to forget that some of these caterpillars will survive being eaten and grow to maturity to perpetuate their butterfly or moth species. But first they must pupate. As gardeners we can support insects in this stage as well.

The term pupation may bring to mind a jewel-green monarch chrysalis hanging from a stiff stem far from its host milkweed. According to Doug Tallamy in his book *Nature's Best Hope*, most caterpillars venture away from their host plants to evade predators before pupating, but about 90 percent will actually pupate either underground or under the leaf-littered duff layer that lies on top. This is where, as gardeners, we can provide our support. It's much better for the caterpillar to drop down from a tree, shrub or other plant into a ground layer that is covered with native plants, as opposed to turf grass or mulch, to minimize the need for energy-consuming wandering to find a good pupation site in a predator-filled world. A ground cover layer will provide loose soil for the caterpillar to burrow into as plant roots grow downward and outward and provide pockets of air and space. (Turf grass can lead to compacted soil from frequent mowing, walking and the short depth of root growth.) The introduction of leaf litter, a rotting log or rock arrangements can diversify the pupation site offerings in the garden too.

In addition to increasing the chances that a caterpillar is able to pupate and survive to adulthood, native ground covers themselves are often host plants. For example, the leaves of violets like *Viola pedata* are eaten by the caterpillar of the great spangled fritillary butterfly. The leaves of wild columbine (*Aquilegia canadensis*) are eaten by the caterpillar of the columbine duskywing butterfly. Since many ground covers also flower, they provide support for the adult stage of life too, when an insect's leaf eating is replaced by the need to sip nectar or collect pollen. The ground cover layer is both alive and life-supporting in ways that mulch and turf grass are not.

Plants that are good ground covers tend to grow no more than about a foot high and have a spreading habit. Though one type of plant may be chosen to cover an area, a variety of plants may be used to add different colors, textures and seasonal interest. Combining different plants can ensure that an underground network of native plant roots fills different horizontal and vertical levels of the soil to make it more difficult for weeds to find root space. Also, by combining plants with different spreading methods, species can work together to cover an area, both above and below ground.

Plants spread in three basic ways: through rhizomes (underground roots), stolons (aboveground stems) and seed. By choosing plants from each category, the rhizomatous plants, like wild ginger (*Asarum canadense*), will expand to grow clumps, while the stoloniferous species, like wild strawberry (*Fragaria virginiana*), will send out stolons that reach around to the empty spaces between clumps to grow around and between. Seeds can result in either plant clumps when they drop by gravity near the parent, as with wild geranium (*Geranium maculatum*), or in a more distributed way if they are ejected by the parent, as in bird's foot violet (*Viola pedata*).

The accompanying chart will help you plan your insect-friendly, weed suppressing ground cover layer. The chart includes the plants that will be offered this year at the RIWPS on-line sale and a description of their primary method of spread and growing conditions. Grow a ground cover layer that is alive and supportive of insect life. And don't be too upset when you find holes in the leaves of your flowers. The plants will survive, and you will be ensuring that your perennials and vegetables will be pollinated.

Ground Covers

Wild columbine (*Aquilegia canadensis*)

SPREADING METHOD	RHIZOMES	STOLONS	SEEDS
 Wild blue phlox (*Phlox divaricata*)	**Appalachian barren strawberry** ***(Geum fragarioides)*** To part sun; moist to dry soil; evergreen	**Running foamflower** ***(Tiarella cordifolia)*** To part sun; moist soil; evergreen	**Wild geranium, cranesbill** ***(Geranium maculatum)*** To part sun; moist soil in spring
SHADE	**Wild ginger** ***(Asarum canadense)*** Moist to moderately dry soil	**Partridgeberry** ***(Mitchella repens)*** To part sun; moist to dry acidic soil; evergreen; keep free of debris; slow spreader	**Wild columbine** ***(Aquilegia canadensis)*** To full sun; average but well-drained soil
	Wild blue phlox ***(Phlox divaricata)*** To part sun; moist soil	**Trailing arbutus** ***(Epigea repens)*** To part sun; moist but well-drained acidic soil under pines; evergreen; keep free of debris; slow spreader	**Hairy alum root** ***(Heuchera villosa)*** To full sun with moisture; average soil; divide clumps every three to four years; evergreen
		Virginia creeper ***(Parthenocissus quinquefolia)*** To sun; wet to dry; vine without support covers ground	
 Trumpet honeysuckle (*Lonicera sempervirens*)	**Golden groundsel** ***(Packera aurea)*** To full shade; needs more moisture in full sun; also spreads through seeds; evergreen	**Wild strawberry** ***(Fragaria virginiana)*** To shade; dry and well-drained soil; evergreen	**Bird's foot violet** ***(Viola pedata)*** To part sun; well-drained soil; seeds ejected away from parent
SUN		**Running groundsel** ***(Packera obovata)*** To full shade; moist to dry soil; evergreen	**Blue-eyed grass** ***(Sisprinchium atlanticum)*** Average to moist soil
		Bearberry ***(Arctostaphylos uva-ursi)*** To part sun; well-drained, sandy, acidic soil; evergreen	**Golden Alexanders** ***(Zizia aurea)*** To part shade; moist to moderately dry soil; evergreen
		Trumpet honeysuckle ***(Lonicera sempervirens)*** To part sun; moist; vine without support covers ground	

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