Penn State **Extension**

Meadows and Prairies: Wildlife-Friendly Alternatives to Lawn

By replacing all or part of your lawn with native vegetation that provides food and cover, you can create a refuge to attract variety of wildlife. This publication covers alternatives to lawns, planting and preparing for your meadow, maintaining a meadow or prairie, landscape ordinances, and sources of wildflowers and grasses.

In the United States, over 24 million acres of lawn surround our homes. As suburban development continues to spread into open and forested land alike, we lose more and more of our native vegetation and wildlife habitat.

By replacing all or part of your lawn with native vegetation that provides food and cover, you can create a refuge to attract a variety of wildlife. This not only will provide much-needed habitat, but it also will create an opportunity for you to see and learn about wildlife.

Although lawns can provide benefits, large expanses of lawn displace other diverse natural habitats that most wildlife species find appealing. The lawn, clipped short and consisting of very few species, is a rather hostile, sterile environment for most wildlife, being devoid of food and places to hide or nest. Planting and maintaining a lawn also has time, economic, and environmental costs.

As homeowners become aware of the costs of maintaining lawns, both to people and to wildlife, many are choosing to replace all or part of their lawns with more wildlife- and environment-friendly alternatives.

Alternatives to Lawns

Before you begin the process of creating a wildlife-friendly environment, consider how much lawn you would like to retain. For instance, do you want to keep part of your back yard as a play area for children and a small patch of lawn in the front? Once you determine the minimum amount of lawn that you need, then you can start to consider how to convert the remaining lawn into a wildlife-friendly environment.

If you have an open, sunny area on your property, you may want to create a meadow or a prairie garden. Both prairies and meadows contain a mixture of native grasses and wildflowers, although prairies generally have a higher percentage of grasses. In addition, prairies usually are dominated by "warm-season" grasses that grow when the soil and weather are warm, whereas meadows have more "cool-season" grasses that grow in the cooler spring and early summer months. But many of the same species can be found in both prairies and meadows, and the two terms are used interchangeably.

There essentially are two types of meadows or prairies: annual and perennial. Annual meadows grow rapidly the first year, providing an abundance of color quickly. This is the type of meadow you encounter when you buy and plant packaged or canned meadow mixes.

To retain the original color and species mixture, annual meadows generally need to be replanted every year. These mixtures often contain a predominance of nonnative species, some of which can spread into nearby fields. If you decide to purchase a prepackaged mix, inspect the species content carefully for unwanted aggressors. Wildflower mixes may include some perennial species as well, but again, beware of nonnative and aggressive species that will take over your meadow. A list of species to avoid planting is presented in Table 1.

Table 1. Species to avoid planting in prairies or meadows.

Common name	Scientific name
Bull thistle*	*Cirsium vulgare*
Canada thistle*	*Cirsium arvense*
Crown vetch	*Coronilla varia*
Dame's rocket	*Hesperis matronalis*
Nodding thistle*	*Caduus nutans*
Purple loosestrife	*Lythrum salicaria*
Queen Anne's lace	*Daucus carota*
*Species on the Pennsylvania noxious weed list. Planting of these species is not permitted.	

Perennial meadows are the second type. Because perennial plants and prairie grasses take hold more slowly, a perennial meadow usually requires two or three years to establish properly. These plants have very deep root systems and spend the first year directing their energies into root growth. In the second year, perennial meadow and prairie plants extend their roots and begin to grow and spread aboveground as well. By the third year, your meadow or prairie garden is fully established. An established meadow is virtually maintenance free, requiring only occasional weeding and mowing once each year. For more detailed information on establishing meadows and prairies, refer to the list of references at the end of

this publication.

A perennial meadow can be established by carefully selecting and planting perennial wildflowers native to Pennsylvania. Some annuals can be selectively added to provide diversity. A list of some native wildflowers you may choose to plant is given in Table 2. While the list represents a small subset of the species to choose from, you can mix and match to suit your tastes. A list of sources for wildflowers and grasses is provided at the end of this publication.

Table 2. Perennial wildflowers for meadows and prairies.

Plant name	Height	Flower color	Time of bloom	Soil conditions
Black-eyed Susan (*Rudbeckia hirta*)	1-3 ft	Yellow	Summer and fall	Dry to moist
Blazing-star (*Liatris spicata*)	1-5 ft	Purple	Summer and fall	Moist
Butterfly weed (*Asclepias tuberosa*)	1-3 ft	Orange	Summer	Dry
Canada anemone (*Anemone canadensis*)	1-2 ft	White	Spring and summer	Damp
Cardinal flower (*Lobelia cardinalis*)	2-4 ft	Red	Summer and fall	Moist
Common evening primrose (*Oenothera biennis*)	1-5 ft	Yellow	Summer and fall	Dry
Common milkweed (*Asclepias syriaca*)	3-5 ft	Lavender	Summer	Dry to moist
Common sneezeweed (*Helenium autumnale*)	3-5 ft	Yellow to mahogany	Summer and fall	Moist
Goldenrod (*Solidago* sp.)	1-5 ft	Yellow to golden	Summer and fall	Varies
Gray-headed coneflower (*Ratibida pinnata*)	3-5 ft	Yellow	Summer and fall	Dry
Lanceleaf coreopsis (*Coreopsis lanceolata*)	1-2 ft	Yellow	Summer	Dry to damp
New England aster (*Aster novae-angliae*)	3-5 ft	Blue, rose, violet	Summer and fall	Damp

Plant name	Height	Flower color	Time of bloom	Soil conditions
New York ironweed (*Vernonia noveboracensis*)	3-10 ft	Purple	Summer and fall	Moist
Obedient plant (*Physostegia virginiana*)	3-5 ft	Pink	Summer and fall	Moist
Pearly everlasting (*Anaphilis margaritacea*)	1-3 ft	White	Summer and fall	Dry
Purple coneflower (*Echinacea purpurea*)	2-4 ft	Purple-pink	Summer and fall	Moist
Queen-of-the-prarie (*Filipendula rubra*)	2-9 ft	Pink	Summer	Moist
Sundrop (*Oenothera fruticosa*)	1-3 ft	Yellow	Summer and fall	Dry
Wild bergamont (*Monarda fistulosa*)	2-3 ft	Pink	Summer	Dry
Wild geranium (*Geranium maculatum*)	1-2 ft	Rose-purple	Spring and summer	Moist
Wild lupine (*Lupinus perennis*)	1-2 ft	Blue	Spring and summer	Dry, sandy

You can make your meadow or prairie more authentic by adding some native grass species. The dense root systems of grasses squeeze out weeds, helping to keep your meadow low maintenance. Grasses also support wildflowers, and provide cover and seeds for birds. In the fall, grasses turn to beautiful shades of gold, orange, and bronze. A list of potential native grass species to include is presented in Table 3. These provide excellent cover for wildlife and also produce seeds that serve as food for wildlife.

Table 3. Native grasses for prairies and meadows.

Plant name	Height
Big bluestem (*Andropogon gerardi*)	4-6 ft
Little bluestem (*Schizachyrium scoparium*)	2-3 ft
Indian grass (*Sorghastrum nutans*)	2-3 ft
*May eventually outcompete other grasses and wildflowers. Some people suggest that this species be planted alone.	

Plant name	Height
Switchgrass* (*Panicum virgatum*)	4-7 ft
*May eventually outcompete other grasses and wildflowers. Some people suggest that this species be planted alone.	

By creating a meadow or prairie you provide habitat for a variety of wildlife species. Some flowers provide nectar and larval food sources for butterflies and nectar for hummingbirds. Others supply seeds for songbirds to eat and shelter for insects. Insects in turn provide additional food for birds and small mammals like the short-tailed shrew and meadow jumping mouse. Rabbits build nests at the base of grass clumps and feed on tender shoots of grass.

Planting and Preparing for Your Meadow

Most companies that sell seeds and plants also give detailed instructions on site preparation and planting. We have summarized these instructions below.

Getting Rid of Your Lawn

The first step in preparing for your mead- ow or prairie is to remove the existing lawn or vegetation. One way to remove your lawn is to cut the sod into strips with a shovel, undercut it, and remove the strips to a depth of 1 to 1½ inches. Once the sod is removed, the soil must be prepared and planted immediately.

Another way to remove your lawn is to solarize the vegetation by covering it with black plastic, plywood, 6 inches of wood chips, 4 by 8 pieces of plywood, or a layer of newspapers 20 sheets thick with wood chips on top. Solarizing should only be used on small areas (a few thousand square feet or less). Solarization kills plants by speeding germination, then baking the plants. Coverings should be applied in late spring and kept in place for at least two months. Once the plants are dead and the soil is dry, remove the covering and till the soil or rake away the dead thatch. If you do not plan to plant your meadow until spring, be sure to mulch the solarized area with wood chips, shredded bark, or shredded leaves to prevent soil erosion and to keep weeds from sprouting.

Herbicides, such as Roundup, also may be applied to kill lawn, provided that you use them as directed. Appy Roundup to actively growing vegetation. Allow one to two weeks for Roundup to work, then retreat any areas that remain green. Mow dead vegetation very low to remove and thoroughly chop dead plant material. Rototill the area to a depth of 1–2 inches to prepare a seed bed.

If you have a large area of land that you would like to convert to meadow or prairie, the easiest way is to till the soil and plant a cover crop, such as buckwheat. The cover crop will effectively shade out and outcompete the existing vegetation. Harvest the mature crop, then till again during hot, dry weather to dry out the roots of any persistent weeds and grasses. If you don't have a plow or rototiller and you are applying this method to a smaller area, you can use a spade to turn over the soil. Whatever method you choose, your meadow or prairie will be most successful if you begin with smooth, weed-free soil.

Planting Your Meadow or Prairie

Meadows can be planted using seeds or plants. In most areas, the best time to plant is in the spring. In Pennsylvania, April is the ideal month to plant. Once your meadow has been planted, add a light layer of mulch and water as needed during the first six weeks.

An alternative to planting a meadow or prairie is simply to stop mowing and allow nature to take its course. Many wildflowers, including goldenrods, asters, ironweed, joe-pye weed, and milkweed, will come in on their own. To maintain a good balance of species and control the most aggressive species in your meadow, you can pull out excess plants or remove the seed heads before the seed pods burst. This natural method of establishment is inexpensive and will result in a meadow that is attractive to many wildlife species, from butterflies and birds to rabbits and red foxes. The only disadvantage is that you have little control over which species will colonize your meadow.

Maintaining Your Meadow or Prairie

The first three years of a meadow or prairie garden require the most time and money. Once established, however, your meadow or prairie will be virtually maintenance and expense free, requiring only an occasional weed inspection and mowing once a year.

During the first year, while your plants are small, you will need to mow several times to control weeds. Mow the first time before the weeds reach 8 inches in height. Mow to a height just above the level of the desired plants (about 4 inches). Mow often enough to prevent weeds from growing taller than 8 inches or from developing seed heads. At the end of the growing season, discontinue mowing in order to give the young plants overwinter protection.

In the second spring, whatever vegetation was left over winter should be mowed to the ground before the start of the growing season. During the growing season, watch for invading weeds and remove any undesirable plants by pulling them out or cutting them off at ground level. From the second year on, mow your meadow annually late in winter or early in spring before the next year's growth begins.

Landscape Ordinances

Although more and more homeowners are beginning to realize the environmental, aesthetic, and health benefits of replacing lawns with wildlife-friendly alternatives, "weed" ordinances occasionally can lead to controversy over natural landscaping. These laws, which are usu- ally set by county or local governments, restrict the height or type of plants that may be grown. Recently, many of these laws have been challenged, and in some instances changed, by people who wish to abandon the traditional lawn concept. If you live in an area where most residents still cling to the traditional lawn ideal, you may want to take the following steps to avoid conflicts:

- Research your local ordinances to find out what local laws are in existence.
- If there are local laws that may conflict with your goals for your property, apply for a variance.
- Start with smaller plantings in the backyard, and expand from there.
- Share your plans with your neighbors, explaining to them the benefits of what you are doing.

Most likely, any objections that you receive will come because your property does not conform to the norm of a manicured lawn. However, some neighbors may discover that they find your alternative more appealing and may subsequently follow your lead.

Suggested Readings

Daniels, Stevie. *The Wild Lawn Handbook: Alternatives to the Traditional Front Lawn*. New York: Macmillan, 1995.

Hadden, Evelyn J. *Shrink Your Lawn*. Plymouth, Minn.: Less Lawn Press, 2008.

Tallamy, Douglas W. *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants*. 2nd ed. Portland, Ore.: Timber Press, 2009.

Tufts, Craig, and Peter Loewer. *The National Wildlife Federation's Guide to Gardening for Wildlife*. Emmaus, Pa.: Rodale Press, 1995.

Sources of Wildflowers and Grasses

Appalachian Wildflower Nursery
723 Honey Creek Road
Reedsville, PA 17084
Telephone: 717-667-6998 (Plants only)

Ernst Conservation Seeds [http://www.ernstseed.com]
9006 Mercer Pike
Meadville, PA 16335
Telephone: 800-873-3321
(Seeds: grasses, wildflowers)

Prairie Nursery [http://prairienursery.com]
PO Box 306
Westfield, WI 53964
Telephone: 800-476-9453
(Seeds, plants: grasses, wildflowers)

North Creek Nurseries [http://www.northcreeknurseries.com]
388 North Creek Road
Landenberg, PA 19350
(Plants: grasses, wildflowers)

Doyle Farm Nursery [http://www.doylefarm.com]
158 Norris Road
Delta, PA 17314
Telephone: 717-862-3134

Edge of the Woods Native Plant Nursery [http://www.edgeofthewoods.biz]
8718 Clausville Road
Fogelsville, PA 18051
Telephone: 610-442-2495 or 610-442-2496

Redbud Native Plant Nursery [http://www.redbudnativeplantnursery.com]
1214 N. Middletown Road
Glen Mills, PA 19342
Telephone: 610-358-4300

Sylva Native Nursery
1683 Sieling Farm Road
New Freedom, PA 17349
Telephone: 717-227-0486

Yellow Springs Farm [http://www.yellowspringsfarm.com]
1165 Yellow Springs Road
Chester Springs, PA 19425

Telephone: 610-827-9204
Fax: 888-522-5616

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