Converting Turf Areas to MEADOW Benefits the BUDGET and the ENVIRONMENT

Maintaining mowed areas in township parks can be costly, especially if they are not used for active recreation. By allowing turf areas to convert to meadow, townships reduce the bottom line and create a home for diverse species of flora and fauna.

BY KIRSTEN WERNER / DIRECTOR OF COMMUNICATIONS, NATURAL LANDS TRUST
Areas managed as grass or turf play an important role in municipal parks, providing places for recreation and special events, as well as overflow parking. Mown areas serve as safety setbacks along roads and at intersections, offering additional sight distance and keeping plants and trees from encroaching on the roads. They also provide a tidy, well-kept appearance around structures, which satisfies suburban sensibilities.

As townships cope with smaller staffs and budget cuts, however, it is worth considering the cost of turf management. Nationwide, $480 million is spent each year on turf products and services for parks and recreation areas. Municipal park systems employ an average of nine people to maintain their turf.

In most park settings, very little turf area is watered, fertilized, limed, and aerated unless it is designated for a specific purpose, such as a sports field. Therefore, the primary maintenance costs come from staff time, wear and tear on mowers, and fuel.

Converting a portion of a park’s turf areas to meadow can offer substantial cost savings, most notably by reducing the need for frequent mowing. Once established, meadows require very little maintenance, saving both staff time and money.

In addition to financial incentives, meadows offer environmental, experimental, and aesthetic benefits over turf. They filter groundwater, control flooding, add visual appeal, and provide critical habitat for songbirds and pollinators. Perhaps the best incentive for converting turf to meadow is this: All that’s required is sitting back and watching the grass grow.

The costs of keeping up the grass
America’s love affair with the lawn began as an attempt to copy English aristocrats who first popularized the idea of the green, grassy expanses in the 18th century. The landed gentry planted the farm fields around their estates with turf to send a message: They had more land than they needed and could afford to waste some.

Today, Americans spend about $30 billion every year to maintain more than 32 million acres of lawn — an area roughly the size of Pennsylvania. Lawns in the U.S. consume around 270 billion gallons of water a week. American homeowners apply 10 times more fertilizer, herbicides, and pesticides to their grass than farmers do to their crops, which results in chemically dependent lawns that can negatively affect the health of people, pets, plants, and wildlife.

Consider, too, the impact of mowing. Emissions from gas-powered lawn mowers make up 5 percent of U.S. air pollution. A typical 3½-horsepower gas mower emits about the same amount of volatile organic compounds in one hour as a late-model car driven 340 miles.

Cultivating diversity
Converting turf to grassland or meadow can reverse many of these negative impacts. First, a quick primer: The difference between grassland and meadow is essentially a matter of the species they contain. Both terms refer to areas that are uncultivated, dominated by herbaceous, or soft-stemmed and leafy, plants. Grasslands and meadows also have soils that are not saturated year-round.

Grasslands are covered more than 50 percent by grasses, while meadows are covered more than 50 percent by forbs, a catch-all term for herbaceous plants other than grasses and grass-like plants, such as sedges and rushes. Most forbs are wildflowers, although plants that have no flowers, such as ferns, are often included.

When an area of turf is mowed less frequently, it will initially contain the species that made up the turf, usually non-native cool-season grass species, such as Kentucky bluegrass, fescues, and ryegrasses. They are called cool-season grasses because they do best in the spring and fall, when temperatures are cooler.

Over time and with infrequent mowing, the site’s vegetation will begin to diversify. Additional species of grasses and forbs will appear. Native warm- and cool-season grasses will also colonize. Warm-season grasses, such as little and big bluestem and purpletop, will begin to show after a few years. These grasses, which thrive in the hot summer months, often form clumps, rather than spread out like turf, and provide breeding and foraging spaces for wildlife.

Early forbs species to enter the meadow may include goldenrod and asters. Other wildflowers will follow, depending on what species are seeded by local plants and the digested seeds embedded in wildlife droppings. Varieties such as black-eyed Susan, daisy, yarrow, Queen Anne’s lace, and purple coneflower are common.

Making meadows
A hundred years ago, much of Penn’s Woods was cleared of trees for lumber. Nationwide, $480 million is spent each year on turf products and services for parks and recreation areas.
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and agriculture. The meadows and grasslands that resulted from this practice existed as temporary ecosystems that, if left alone, returned to forest through natural succession. Today, human activities, combined with deer browsing and the proliferation of invasive plant species, continue to interrupt the process, but none do it as frequently as mowing.

Essentially, each time turf is mowed, the successional clock is reset. By changing the frequency and timing of the mowing, we control the species composition and height of the vegetation.

This, in turn, affects the environmental services performed by the land, such as groundwater filtration and stormwater control. It also impacts the birds, animals, and invertebrates that rely on the habitat for food and shelter.

The easiest way to convert a portion of turf to grassland is to simply mow only once or twice a year, allowing the turf grass to mature. Budget permitting, the grass may be augmented by planting and seeding with warm-season species and native wildflowers to give the meadow more color, diversity, and visual interest. Or simply be patient, and allow Mother Nature to diversify the species on her own.

Often the best areas to convert to meadow are those that are difficult to mow, such as wet or steep areas. Other ideal locations include transition areas between turf and woodlands, stream corridors, and areas underused for active recreation.

Benefiting the environment

Nature provides environmental services free of charge, such as controlling flooding, filtering groundwater, and recycling nutrients that are essential to human life. If they do not occur, we must develop costly, engineered systems to do them for us. The less we interfere with the land, the better these processes function. From this perspective, turf is better than pavement, but meadows are far superior to turf.

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meadow species increase infiltration, which in turn support stream base flow during drier seasons and recharge groundwater supplies. In contrast, turf is only slightly better than pavement for getting surface water back into the ground.

Meadows and grasslands also intercept more nutrients, sediments, and pollutants than turf. A 100-foot-wide grassland buffer along a stream can dramatically reduce pollutants and sediment entering waterways. Grasslands also lose less water to the atmosphere through evaporation from the soil and transpiration from plants. The plants shade the water on the ground, lowering its temperature and allowing it to soak in, rather than evaporate into the air.

Providing habitats for wildlife

Wildlife species also benefit when an area is converted from mowed grass to meadow. It is really quite simple: When park grasses are mowed less often, vegetation diversity increases. As the number and types of plant species increase, they attract different insects and other invertebrates, which in turn draw insect-eating species, and so on up the food chain.

For park visitors, this represents a chance to see an increased variety of wildlife. Few birds, except the American robin, are attracted to lawns. By allowing grassy areas to mature, you can attract a diversity of avian species, such as the red-winged blackbird, American goldfinch, eastern bluebird, and various swallows and sparrows.

What’s more, converting a portion of municipal turf areas to meadow by simply allowing the grasses to mature and limiting mowing to twice a year may offer prime habitat for several species of grassland birds whose numbers are declining. Over the last century, changes in agricultural technology and loss of land to development have caused a decline in the quantity and quality of grasslands for wildlife.

These changes have threatened the survival of certain birds, such as the eastern meadowlark, bobolink, and grasshopper sparrow, which depend on large meadows of 25 acres or more. While small meadows will not provide breeding habitat for these threatened species, they do provide important resting and feeding areas along migratory pathways.

Allowing grasses to grow to maturity along waterways has the added benefit of discouraging Canada geese. These birds can make being outdoors unpleasant when their droppings are numerous.
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These droppings may also contribute to high fecal coliform bacteria levels in the water supply. Geese prefer flat, open, mowed grass areas and tend to avoid dense, high grasses. To reduce the number of geese in public parks and recreation areas, maintain a 6-foot-wide buffer of unmowed grasses along the shorelines.

Attracting beneficial pollinators

Another benefit of allowing turf to succeed to meadow is the increase in pollinator species to the area. Pollination — the transfer of pollen from one flower to another — is critical to fruit and seed production and is often provided by insects on the hunt for nectar, pollen, or other floral rewards.

Many of these beneficial pollinators, such as bees, beetles, and butterflies, are currently at risk due to loss of habitat and pesticide use. This is especially troubling considering that pollinators are essential to the production of three-quarters of the staple crop plants that feed humans, as well as 90 percent of all flowering plants in the world.

Beneficial pollinators have very basic habitat requirements: flowers to forage, host plants on which to lay their eggs, and an environment free of pesticides. Grasslands and wildflower meadows offer these essentials in spades.

Feeding the senses

While closely cropped turf has a certain visual appeal, meadows are much more of a sensory experience. A large field of tall, waving grass is a beautiful site on a breezy July day. In midsummer, a meadow is literally buzzing with activity. There is much to see and hear: a bird looking for a meal, bees flying from flower to flower, iridescent butterfly wings flashing in the sun, or the steady chatter of crickets punctuating the peace and quiet.

Many meadow wildflowers persist into fall and attract songbirds that feast on drying seed heads. Even in winter, the dried stalks of meadow grasses and perennial flowers are striking and may even act like snow fencing along roads, reducing winter plowing needs.

Often, however, when a municipality allows vegetation to grow beyond the height of a lawn, the public perceives it as untidy or neglected. To visually communicate that a meadow is intentional and managed, maintain a mowed turf swath as a sharp path around the edges and consider incorporating a trail network. Well-maintained trails encourage people to get into the meadow and discover its beauty up close.

Timing is everything

In designing and maintaining any natural area, such as a grassland or meadow, it is important to recognize that landscape maintenance is a compromise between what nature wants to do and what we want nature to do. Though far less labor-intensive than turf, a meadow requires judicious, periodic maintenance in the process of meeting nature halfway.

Because a meadow is a temporary stage in the ecological parade of succession, we must interrupt the process by mowing, grazing, or burning to delay it from returning to woodland. The frequency and timing of mowing will have a dramatic effect on the composition of a meadow and its wildlife.

Generally, two cuttings per year are recommended. Once-a-year mowing is sufficient to keep a meadow from reverting to woodland but may not be sufficient to discourage woody seedlings, brambles, invasive vines, and multiflora rose, an aggressive grower that has been designated a noxious weed in Pennsylvania.

The best times to mow are between March 1 and April 1 and again in early July. Mow meadows when the ground is dry, and cut to a height of 6 to 8 inches.

The first mowing in March will minimize the amount of time birds and animals lack cover because next year’s growth will be on its way with the onset of warmer weather. Mowing again in early July will remove the cool-season species that begin to die back in early summer and make space for the warm-season species to grow, flower, and provide habitat for the remainder of the year.

Mowing on this schedule is very important. Waiting to do the first mow-
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ing until after April 1 is detrimental to wildlife; it removes nesting cover, destroys nests and eggs, and kills young birds and animals.

Likewise, mowing too late, between mid-July and late October, does not give the vegetation enough time to renew itself and therefore provides scant food and cover for wildlife during the winter. Mowing at this time of year is best avoided unless there is a noxious weed species that you want to control.

Monitoring meadows for invasive plants is also important. Eliminate these pest plants by spot mowing, selective spraying or wick application of an appropriate herbicide, or manual or mechanical pulling. A combination of strategies may be the best approach.

Use only aquatic-approved herbicides within 50 feet of streams.

An easy option

The myriad benefits of replacing turf with grassland or meadow — saving time and money, improving stormwater management and water quality, creating a rich and diverse habitat for songbirds and pollinators, discouraging geese, and adding visual appeal to public areas — make it an option worth considering. Land managers may start small, adding a few acres of meadow in areas that are difficult to mow, but beware: Making meadows can be addicting. After a few seasons of observing the flourishing grasses and forbs, you’ll never look at turf the same again.

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WHY MAKE A MEADOW?

Converting turf to meadow benefits more than just the bottom line

Allowing a mowed turf area to go natural and become a meadow offers many benefits for the community. Here are a few of them:

• Saves time and money on mowing and maintenance.
• Reduces emissions from lawn equipment.
• Encourages diverse species of grasses and wildflowers.
• Provides environmental services, such as groundwater filtration, stormwater control, and nutrient and sediment reduction.
• Creates habitats for wildlife, including birds and beneficial pollinators, such as bees and butterflies.
• Provides an aesthetic and sensory experience for residents.

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