Penn State **Extension**

PENNSYLVANIA WILDLIFE no. 10

Neighborly Natural Landscaping: Creating Natural Environments in Residential Areas

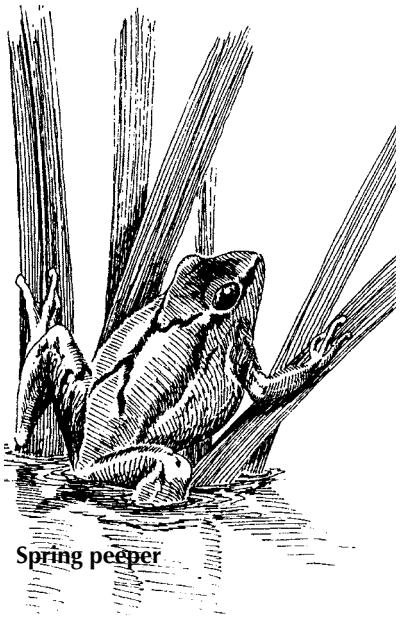
Homeowners across America are changing the face of the typical American lawn. Using gardening and landscaping practices that harmonize with nature, they are diversifying their plantings, improving wildlife habitat, and reducing lawnmower noise, air and water pollution, and yard waste.

Various "natural" landscapes, planned for beauty and ease of maintenance using mainly native plants, are spreading throughout suburbia. These landscapes include wildflower meadows, butterfly gardens, and woodland habitats that attract birds.

Many natural landscape pioneers have discovered, however, that their neighbors sometimes view alternatives to the mowed lawn as untidy, a threat to property values, and even a health hazard. Worse, their township or borough may have a strict "weed law" that challenges their landscaping practices. In this fact sheet, we provide strategies for the natural landscape homeowner who is looking for neighborly ways to garden for nature.

Back to the Future

Perceptions of lawn beauty have changed with the times. In 16th-century England, the lawns of wealthy landowners were wildflower meadows starred with blooms. Grasses were perceived as weeds, and a garden boy's job was to creep among the flowers picking out the grass. Our current love affair with the closely mowed grass lawn dates from the 19th century. Using European grazed pastures and 18th-century formal gardens as their model, the Garden Clubs of America, the U.S. Golf Association, and the U.S. Department of Agriculture embarked on a campaign to landscape American lawns with a carpet of green. With the invention and spread of the lawn mower, the "common man" could have the same cropped turf as that of an aristocrat's mansion.



Spring peeper

Today, at least one American town has come full circle. In Seaside, Florida, turf grass is banned. Only locally native species of wildflowers, shrubs, and trees are allowed in the landscaping of private yards. The result has been verdant neighborhoods of shrub-scrub dune vegetation, with its related birds and wildlife—and the residents love it. In most of America, however, the mowed lawn is still the norm, and weed laws are used to ensure conformity with this ideal.

"Weed Laws"and Why They Exist

Noxious Weed Laws were first written to protect farmers from introduced weeds that could compete with crops or harm livestock. Pennsylvania's first noxious weed law was adopted in 1862 to control the spread of Canada thistle, chicory, Johnson grass, and marijuana. Today,

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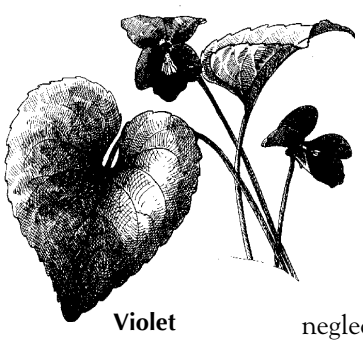
11 plant species are on Pennsylvania's control list: Canada thistle *(Cirsium arvense)*, multiflora rose *(Rosa multiflora)*, Johnson grass *(Sorghum halepense)*, marijuana *(Cannabis sativa)*, mile-a-minute vine *(Polygonum perfoliatum)*, kudzu vine *(Pueraria lobata)*, bull thistle *(Cirsium vulgare)*, musk thistle *(Carduus nutans)*, shattercane *(Sorghum bicolor* ssp. *drummondii)*, jimsonweed *(Datura stramonium)*, and purple loosestrife *(Lythrum salicaria)*. Proposed additions are another variety of purple loosestrife *(Lythrum virgatum)*, giant hogweed *(Heracleum mantegazzium)*, and goatsrue *(Galega officinalis)*.

But Pennsylvania's law is less restrictive than those of some municipal ordinances. Typically, these ordinances restrict the height or type of plants that may be grown; the word "weed" generally is used to describe undesirable plants. Some ordinances state that if the weeds grow to more than a given height (somewhat arbitrary—examples are 18 inches, 12 inches, or even less), the municipality is authorized to levy fines or even to come mow the property and charge the landowner for time and labor. These municipal weed laws are not intended to protect farmers, but, in theory, to protect neighborhood property values by ensuring a conformity of mowed lawns. Lawn alternatives such as wildflower meadows are sometimes perceived by neighbors and officials as no different from a neglected lot: untidy, a health hazard, and a breeding ground for "vermin."



Violet

Natural Landscapes: Myths and Facts

Myth

"Meadows and natural landscapes are fire hazards."

Facts

This argument is based on the unproven belief that the tall grass and wildflower stems in a meadow are highly flammable. U.S. Forest Service experts state that a grass fire can only sustain high heat for 20 seconds. For a fire to be potentially damaging to a home, it must burn within four feet of the home for seven and a half minutes.

Myth

"Natural landscapes attract vermin."

Facts

The most feared "vermin" are rats and snakes. The vegetation in a natural landscape does not provide the type or quantity of food required to sustain a population of black or Norway rats. These non-native rats do not eat the seeds of our native grasses and flowers. Rats are more likely attracted to human-produced food (corn, grain, pet foods, food scraps) provided in and near structures like barns or garbage dumps. A neglected lot with human-deposited food litter among the untended growth is indeed a rat magnet, but the managed natural landscape is not.

Snakes may find a hospitable habitat in either a traditional or a naturally landscaped yard if prey species, water sources, sunny areas for basking, and shelter are present. Snakes may find shelter under outbuildings, in rock walls, or in log piles; they are valuable neighbors because they eat true pests, such as mice, harmful insects, and slugs. Only 3 of Pennsylvania's 22 snake species are poisonous (Northern copperhead, timber rattler, and the endangered Eastern massasauga).

Myth

"Natural landscapes harbor Lyme-disease ticks."

Facts

Deer ticks *(Ixodes dammini)*, the primary vectors for Lyme disease, can be found wherever there are suitable hosts. Because a benefit of natural landscaping is that it attracts and provides habitat for wildlife, the landscape may also harbor the ticks associated with that wildlife. As deer ticks move through their life cycle from larva to nymph to adult, their preferred hosts progress in size from white-footed mouse, to small woodland mammals, to white-tailed deer. Adult ticks tend to climb vegetation up to three feet high to wait for a large, warm-blooded animal to brush past.

To reduce exposure possibilities, the natural landscape should have setbacks or paths for the human visitor to walk on without brushing against vegetation. The best prevention against Lyme disease is a careful check of body and clothes after being in an area likely to have ticks. More details on Lyme disease are available from your county extension office or health department.

Myth

"Natural landscapes are breeding grounds for mosquitoes."

Facts

Mosquitoes need standing water to breed. Even the fastest-maturing breeds require standing water for at least 10 consecutive days. A turf lawn, with its shallow root system, is more likely unable to soak up all the water from a heavy rain and to have long-standing puddles, than a natural landscape with its deeper-rooted native plants. Natural landscapes tend to be planned to take full advantage of native plants whose water requirements match the local rainfall and soils. Natural landscapes also improve habitat for mosquito predators, like birds.

Owners of ornamental ponds in either traditional or natural landscapes can take steps to control mosquitoes. They can keep mosquito-eating fish, float Bt "dunks" (floating, slow-release *Bacillis thuringiensis* bacteria, which kill only mosquito larva and not beneficial and harmless aquatic life), or use pumps and waterfalls to keep the water moving.

Myth

"Natural landscapes produce pollen that causes suffering for those with allergies."

Facts

Wind-borne pollens are the primary cause of hay fever. Any plant with showy flowers

(like the much-maligned goldenrod) is pollinated by insects, not wind. The main hay fever culprit in our area is ragweed, which thrives in disturbed or eroded areas like roadsides. Other major allergenic plants are pigweed, goosefoot (both non-native "weeds"), and the non-native grasses in turf lawns or pastures— Kentucky bluegrass, Bermuda grass, and timothy. Some tree species with wind-borne pollen, such as oak, also are allergenic.

Perennial native plants and native grasses, the primary components of natural landscapes, generally do not produce wind-borne, allergenic pollen. In fact, encouraging these species to grow crowds out weedy pioneer species like ragweed that germinate and thrive at lawn edges.

Myth

"Natural landscapes lower property values because they are 'messy' and unattractive."

Facts

Real estate with distinctive, well-done natural landscaping actually possesses a marketing edge, and has a positive effect on property values. Developers cite the natural landscapes retained in their developments as an asset, and charge more for naturally landscaped homes than for homes in areas with traditional landscaping. High-quality natural features like woodland corridors can preserve and strengthen a community's unique characteristics. Neighborhood organizations, environmental restoration professionals, landscape architects, and nurseries are turning more often to natural landscaping for aesthetic and economic reasons, as well as for environmental benefits like reduced stormwater runoff and improved wildlife habitat.

Jack-in-the-pulpit

First Steps Toward a Lawn Alternative

The first step in establishing an alternative to lawn is to gain the approval of neighbors and township officials. To find out if your municipality has a weed law, contact your borough or township office and ask about landscaping ordinances. If a law does exist, ask for a copy. Weed laws, if not carefully worded, may equate natural landscaping with unmanaged landscapes. Some communities require that homeowners file an application for natural landscaping and obtain approval from a majority of neighbors. More recently enacted and enlightened weed laws allow natural landscaping "by right" without case-by-case neighbor or municipal permission. These more progressive laws take three main approaches in regulating natural landscapes:

1. A setback or buffer strip on the periphery that is maintained at a maximum height may be required. Vegetation behind the setback is unregulated except for the control of noxious weeds.

2. Broadly worded exceptions may be given for beneficial landscapes. Exceptions may include native plantings; plantings to aid and attract wildlife; erosion control; soil fertility improvement; educational programs; cultivation for consumption, business, or pleasure; and wooded areas.

3. Natural landscaping may be actively promoted. Some townships require that developers include scenic easements, planted with native wildflowers and grasses. Others employ naturalists and biologists to aid homeowners and communities in planning and maintaining natural landscapes.

The next step before beginning work on your landscape is to speak to your neighbors. Explain what you are planning, and why. Be sure to speak of the advantages of attracting songbirds and butterflies, eliminating the use of pesticides, and reducing noise and air pollution from mowing. Share with them literature on the topic, such as Penn State's *Pennsylvania Wildlife No. 5: Meadows and Prairies: Wildlife-Friendly Alternatives to Lawn*. If you tell your neighbors in advance what you are doing and why, it will increase their understanding and reduce their apprehension.

Possibilities for educating your neighbors and municipal officials include:

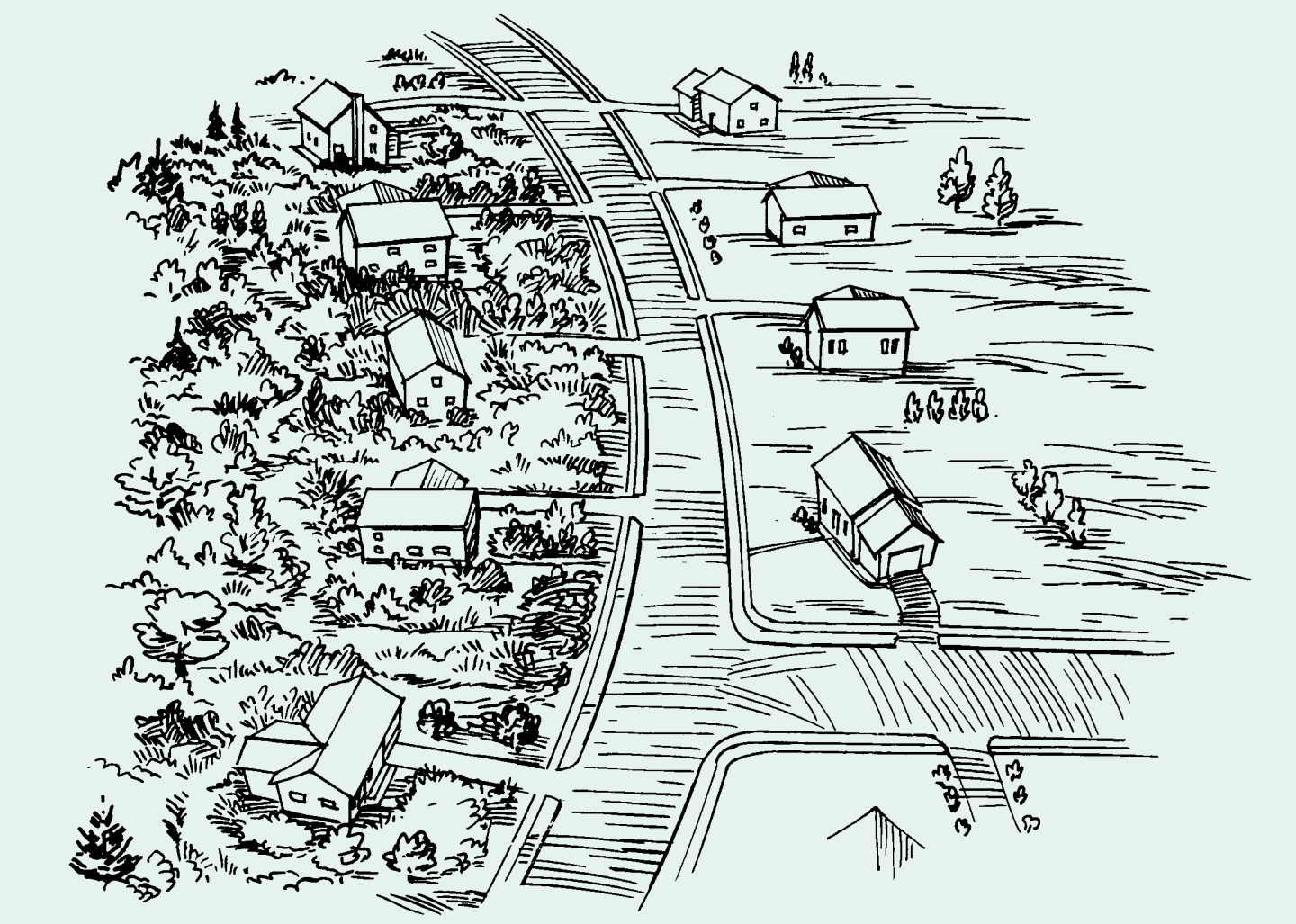
1. Coordinating a meeting to highlight the benefits of natural landscaping. Your county extension office or local conservation-environmental organizations may be able to assist you.

2. Offering tours to homes, schools, corporate landscapes, or nature centers that use or are installing natural landscaping.

3. Making publications and fact sheets on the topic available. They can be obtained from your county extension office or from local and national conservation organizations. (See "Sources of Assistance and Habitat Certification Programs.")

4. Joining forces with like-minded landowners. Open-space management committees or environmental advisory councils can serve both as a voice for

Painted turtle



Natural landscaping (on the left side, above) adds to property values, provides aesthetic benefits, reduces maintenance needs and costs, and creates valuable wildlife habitat.

natural landscaping and as a source of information. The more people who practice natural landscaping, the better for the environment and the more acceptable it becomes. Also, neighbors can link hedgerows and other natural habitats on their properties to form wildlife corridors.

5. Offering to work with municipal officials to revise weed laws.

Benefits of Natural Landscapes: Points to Stress

When you speak with neighbors and municipal officials, emphasize these benefits:

■ *Reduced maintenance costs*. Natural landscapes require no or infrequent watering once established, need no or infrequent mowing, and need no commercial lawn maintenance services. The National Wildlife Federation estimates that the typical lawn costs $700 per acre per year to maintain. A wildflower meadow can be maintained for $30 per acre.

■ *Low maintenance*. Instead of requiring intensive fall preparation, natural landscapes function best if stalks and seedheads are left standing and leaf litter is not raked away. Seedheads provide winter food for songbirds; stalks make winter shelter for beneficial insects. Leaf litter enriches the soil, shelters overwintering insects and spiders, and insulates hibernating amphibians. Limbs of dead trees may need to be pruned for safety, but non-hazardous snags (dead trees)

can be left standing as habitat for cavity-nesting birds, such as woodpeckers, bluebirds, tree swallows, chickadees, and wrens. Constructing brush piles, instead of running dead branches through a chipper, can provide winter shelter for a variety of wildlife species, including Carolina wrens, white-throated sparrows, and song sparrows. Salamanders find shelter under downed logs.

■ *Less yard "waste."* The National Wildlife Federation estimates that 18 percent of municipal solid waste collected is organic yard waste: cut grass, raked leaves, branch trimmings, and dead ornamentals. All of this material can be used in the natural landscape for compost, mulch, brushpiles, or wildlife food or shelter.

■ *Water savings*. Most turfgrasses, including Kentucky Bluegrass, are actually northern European species best suited to a cool, damp climate, and they need heavy irrigation during hot, dry summers. The National Wildlife Federation estimates that 30 percent of the water consumed on the East Coast goes for watering lawns. Natural landscaping conserves water that would otherwise be used on lawn irrigation because native plants are adapted to local rainfall levels.

■ *Improved water quality*. The Environmental Protection Agency (EPA) estimates that homeowners apply 10 times as much chemical pesticide to their lawns as farmers apply to cropland. Excess chemicals run off with rainfall into local waterways. Native plants need fewer or no fertilizer and pesticide applications. EPA research also proves that native vegetation out-performs turfgrass in filtering contaminated water.

■ *Improved soil aeration*. National Wildlife Federation studies show that where pesticides are applied, 60–90 percent of earthworms are killed. Non-pesticide-treated soil has a healthy population of worms and other organisms that mix and aerate the soil as they feed on decomposing organic residues.

■ *Reduced stormwater runoff and improved water table*. Native plant landscapes outperform turfgrass in absorbing runoff and replenishing groundwater supplies.

■ *Reduced soil erosion*. Native meadow plants and grasses have longer roots (up to 5–10 feet) than turfgrass (4–6 inches) to better hold soil in place.

■ *Reduced air and noise pollution because less mowing is required*. Lawn mowing equipment is noisy and a heavy air polluter. The EPA estimates that the average lawn mower emits 11 times the air pollution of a new car for each hour of use.

■ *Reduced electric use and cost*. Natural landscaping with trees and shrubs can provide shade and windbreaks to lower the costs of home air conditioning and heating.

■ *Creation of distinctive and attractive properties that preserve local identity*. With a natural landscape, your property can reflect Pennsylvania's unique ecosystems.

■ *Greater visual interest and diversity throughout the year*. Ornamental grasses look spectacular in winter. Ornamental berries on native shrubs provide color and attract a variety of birds through fall and winter.

■ *Habitat restoration and protection*. Natural landscaping preserves plant biodiversity lost to suburban sprawl and provides habitat for attractive and beneficial wildlife. In some regions, backyards may be the last sanctuary for at-risk plant species.

■ *Recreation*. The fastest-growing outdoor sport in America is birdwatching. A natural landscape attracts more bird species and affords opportunities for photography, painting, and quiet relaxation.

■ *More leisure time*. Natural landscapes can reduce or eliminate the need to spend precious free time mowing during the growing season.

Working with Officials to Improve Weed Laws

If you are faced with a restrictive weed law, your most constructive option is to work cooperatively with local officials to improve the law. Older, more restrictive weed laws were written to protect public health and safety based on the best knowledge of the day. However, new knowledge has replaced outdated beliefs about the "hazards" of natural landscaping (see "Natural Landscapes: Myth and Fact"). Educating your municipal officials can help to create a more enlightened

law. Conservation organizations in your area can be valuable allies in your education efforts.

What Will Your Improved Weed Law Contain?

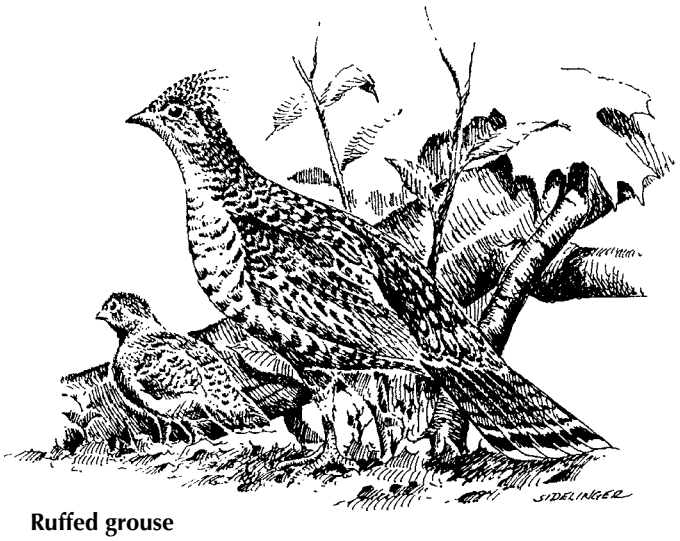
A progressive weed law protects residents' fundamental rights to choose their own landscaping. Ideally, no filing of applications or payment of fees is required for residents to engage in legitimate natural landscaping. Restrictions in the ordinance have an up-to-date, rational basis founded on protecting public health, safety, or welfare, or addressing truly neglected properties. Property owners are required to address clear-cut nuisances, such as ragweed that is allowed to flourish, or noxious weeds that are not controlled.

The ordinance does not legislate conformity or aesthetics, or allow residents to control their neighbors' landscapes. Neighbors do, however, have a right to complain about a property so covered with brambles or vines that it looks totally neglected. "Weed commissioners" are trained to recognize the difference between natural landscapes and neglected properties. If a property is clearly neglected, the municipality can still reserve the right to levy fines and/or cut the vegetation. Addressing violations at a zoning hearing allows the property owner due process of law before the municipality takes action.

An enlightened ordinance recognizes that natural landscaping is less ecologically damaging than the traditional, high-maintenance lawn. Such an ordinance may recommend that the property owner refrain from indiscriminate use of pesticides, fertilizers, and irrigation in turfgrass management. A good ordinance encourages the preservation and restoration of diverse, natural plant communities along with environmentally sound practices. It recognizes that this approach may reduce environmental contaminants like pesticides and help to reduce yard waste.

Sample Natural Landscape Ordinances

Brandywine Conservancy in southeastern Pennsylvania is working with municipalities in its region to draft natural landscape ordinances. For example, East Pikeland Township (Chester Co.) includes in its ordinances a subsection, "Vegetated Area Maintenance Standards in Residential Areas." For grassed areas of developed properties, a maximum height level of 12 inches is specified, and mowing times are recommended to set back invasive species like ragweed. The ordinance mentions specifically that "areas of significant natural value" should not be subject to excessive maintenance standards, such as height requirements. These areas of natural value include wildflower or grass meadows, berry patches, hedgerows, and areas undergoing a directed process of natural succession. A buffer strip is required at the edge of public roads, and invasive plants must be controlled. The township zoning officer charged with administering and enforcing the ordinance has the leeway to consult with organizations or individuals with conservation expertise to determine the terms' applicability in specific situations.



Ruffed grouse

The proposed College Station, Texas, landscape ordinance is another example of a good and fair weed law. Its purpose is to promote the use of native vegetation, including grasses and wildflowers, in managed yards and landscapes. The ordinance specifically states that it is not its intent to allow vegetated areas to be unmanaged or overgrown when such growth provides either a direct health hazard or a demonstrated breeding ground for fauna known to create a safety or health hazard. This ordinance and others are available on the Web at **www.epa.gov/glnpo/greenacres/weedlaws/index.html**.

Designing a Natural Landscape "Garden"

One of the best ways to win approval and keep your neighbors happy is to design your lawn alternative as an easily recognized "garden" that looks intentional, not unkempt. People like order, purpose, and tidiness. The following strategies can help your landscape look "tended":

- *Use borders.* A border can be a mowed edge or "setback" (some townships specify widths in setback ordinances), a hedge, a fence, an edge of low plants, or a path of stone or woodchips. The border acts as a buffer, keeping plants from obstructing sight lines or from "flopping" onto your neighbor's lawn, the sidewalk, or the street. It also acts as a frame, adding to the tended look of the landscape.

- *Use curved lines for borders, if possible.* The human eye enjoys, and responds positively to, curved lines; natural areas tend towards curves.

- *Start small.* Changing your entire yard in one fell swoop may alarm the neighbors and outrun your learning curve! Start by having a small wildflower garden or by recreating the native forest understory under your trees. Expand gradually, imitating nature's processes of gradual succession, rather than sudden takeover.

- *Determine your site conditions and match them with appropriate plants.* Attempting to plant a sun-loving meadow under trees where a forest understory is more appropriate will be frustrating, probably unsuccessful, and the result unattractive. Rather than fighting to overcome a wet or a shady area, find plants that will thrive in those conditions.

■ *Use native plants wherever possible.* Some ornamentals, though once highly recommended, have proven to be highly aggressive and to displace native species. Invasive nonnatives have spread to become serious problems in Pennsylvania's nature centers and parks. The Federal Interagency Committee for the Management of Noxious and Invasive Weeds estimates that the total economic impact of invasives on the U.S. economy equals or exceeds $13 billion per year! Also, nonnative species generally have less wildlife value.

■ *Manage invasives.* Be alert for the species on the Pennsylvania Noxious Weed Control List, and remove them promptly. Your neighbors will not welcome these invasive plants into their property. A properly managed, well-established wildflower meadow will need to be mowed once a year, at the appropriate time, to discourage invasives. Hand-pulling, mechanical removal, and trimming may be needed to control some species. The least-preferred method, use of herbicides, may be indicated in some cases.

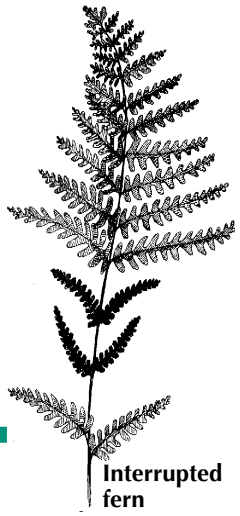
■ *Humanize.* Human elements are welcoming, and invite the viewer into the landscape. Options are paths, benches, birdfeeders, birdbaths, sundials, gazing balls, artifacts like an old farm tool, or ornamental statues. They add to the perception that the landscape is planned and not untended.

■ *Advertise.* Signage to inform passersby of your project can be placed on your property before, during, and after the landscaping project (see list of lawn sign sources below).

■ *Certify your landscape as a wildlife habitat with a local or national conservation organization.* The certifying organization may then provide you with either a certificate or a sign for public display (see "Sources of Assistance and Habitat Certification Programs").

■ *Share your enthusiasm with your neighbors* by drawing a map of your natural landscapes and making it available in a brochure box in your yard. You might even include a listing of the plants you used and where you got them.

■ *Respect your neighbors' rights.* Just as you have a right to a natural landscape, your neighbor has a right to turf. Being self-righteous does not win converts!



Interrupted fern

Last Resorts: Challenging Weed Laws

What if you have researched your local laws and found them restrictive? And what if you've applied for and been denied a variance, and all efforts to educate your municipal officials have failed? Installing a natural landscape in defiance of your local weed law may begin with your landscape being mowed and/or fines being imposed, and end with your case going to court. Many challengers to weed laws have won in court; some have not. Advice on legal arguments for challenging local weed laws can be found through the EPA, Wild Ones, and the National Wildlife Federation (see "Sources of Assistance and Habitat Certification Programs").

In a worst-case scenario with an uncooperative municipality, a non-confrontational option may be to have "pocket" ornamental wildflower gardens, with well-defined edging, within a traditional lawn. Your neighbors may be so charmed by the butterflies and birds attracted to your yard that they follow your example. Gradually, a network of residents may work together to convert the municipal officials and revise the weed laws.

Sources of Assistance and Habitat Certification Programs

Audubon International Cooperative Sanctuary Program
Audubon International
46 Rarick Road
Selkirk, NY 12158
Telephone: 518-767-9051, ext. 12
Website: www.audubonintl.org

National Wildlife Federation
11100 Wildlife Center Drive
Reston, VA 20190-5362
Telephone: 800-822-9912
Website: www.nwf.org/backyardwildlife-habitat

U.S. EPA Region 5
77 West Jackson Boulevard (G-17J)
Chicago, IL 60604
Website: www.epa.gov/greenacres

Wildlife Habitat Council
8737 Colesville Road, Suite 800
Silver Spring, MD 20910
Telephone: 301-588-8994
Website: www.wildlifehc.org

Wild Ones—Natural Landscapers, Ltd.
PO Box 1274
Appleton, WI 54912-1274
Telephone: 877-394-9453
Website: www.for-wild.org

Windstar Wildlife Institute
6940 Allen Place Drive
Fort Worth, TX 76116
Website: www.windstar.org/wildlife

Natural Landscape-Habitat Yard Signs

1. Signs may be purchased through the mail from Wild Ones (see "Sources of Assistance").

2. Owners of backyards certified with the National Wildlife Federation can purchase a yard sign from the federation (see "Sources of Assistance").

3. Owners of sites approved for certification by the Windstar Institute can purchase signs during the certification process (see "Sources of Assistance").

4. Create your own sign. For example: "This area is intentionally not being mowed. We are creating a natural meadow with wildflowers for several important environmental reasons." Or: "Meadow in progress. Step 1—Preparing site. Step 2—Planting. Step 3—Mowing annually."

Suggested Reading

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

Mowery, Marci. Audubon Protecting Animals Through Habitat (APATH): Native Plants in the Creation of Backyard, Schoolyard, and Park Habitat Areas. Available from Audubon Pennsylvania, 100 Wildwood Way, Harrisburg, PA 17110.

Stein, Sara. Noah's Garden: Restoring the Ecology of Our Own Back Yards. Boston: Houghton Mifflin, 1995.

Stein, Sara. Planting Noah's Garden: Further Adventures in Backyard Ecology. Boston: Houghton Mifflin, 1997.

For More In-Depth Information

Brandywine Conservancy, Environmental Management Center, PO Box 141, Chadds Ford, PA 19317. Telephone: 610-388-2700. Website: www.brandywineconservancy.org/conservancy.html

Northeast Illinois Planning Commission. A Source Book on Natural Landscaping for Public Officials. U.S. Environmental Protection Agency, 1997. Available online at www.epa.gov/glnpo/greenacres/toolkit/index.html

Pennsylvania Noxious Weed Control List. Available from the Pennsylvania Department of Agriculture, 2301 N. Cameron Street, Harrisburg, PA 17110-9408. Website: www.agriculture.state.pa.us/agriculture/CWP/view.asp?a=3&q=127683

Rappaport, Bret. As Natural Landscaping Takes Root We Must Weed Out the Bad Laws—How Natural Landscaping and Leopold's Land Ethic Collide with Unenlightened Weed Laws and What Must Be Done About It. John Marshall Law Review, Volume 26 (4), 1993. Available online at www.epa.gov/glnpo/greenacres/weedlaws/index.html

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