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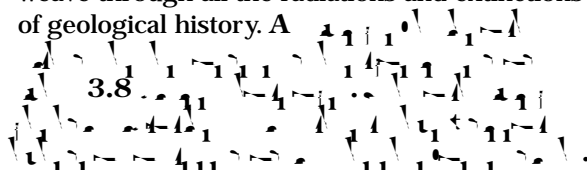
Wild Ones is a direct outgrowth of a natural landscaping workshop offered by the Schlitz Audubon Center of Milwaukee, Wis., in 1977.

A nucleus of nine people became intensely interested in this new concept of native plants as an alternative to lawns.

A camaraderie developed during the lectures, tours, and digs, but it was two years later that an organization sprouted. Gini Lindow had a 'wild' idea that blossomed into Wild Ones—Natural Landscapers, Ltd. Our resi-

The creation of biodiversity came slow and hard: 3 billion years of evolution to start the profusion of animals that occupy the seas, another 350 million years to assemble the rain forests in which half or more of the species on Earth now live. Life had stalled on plateaus along the way, and on five occasions it suffered extinction spasms that took 10 million years to repair. But the thrust was upward. Today the diversity of life is greater than it was a 100 million years ago—and far greater than 500 million years before that.

The modern fauna and flora are composed of survivors that somehow managed to dodge and weave through all the radiations and extinctions of geological history. A



Scoop out a plant, shake the soil from the roots into the cupped hand, magnify it for close examination. The black Earth is alive with a riot of algae, fungi, nematodes, mites, springtails, enchytraeid worms, thousands of species of bacteria. The handful may be only a tiny fragment of one ecosystem, but because of the genetic codes of its residents it holds more order than can be found on the surfaces of all the other planets of our solar system combined. It is a sample of the living force that runs the Earth—and will continue to do so with or without us.

Now is the time to get on the great Linnean enterprise and finish mapping the biosphere. Species are disappearing at an accelerating rate through human action, primarily habitat destruction, but also pollution and the introduction of exotic species to residual natural environments.

Why should we care? Vast potential biological

As we begin a new century, it is essential our landscapes take on a new meaning. Designed and managed landscapes need to demonstrate an environmental consciousness and a shift in values. A part of the beauty of a landscape in the 21st century will be derived from its resource consciousness, its productivity, its sustainability.

These thoughts are stimulated, in part, by a February 1990 prediction by the Worldwatch Institute. This Washington think-tank predicted (optimistically, maybe) that the world will become 'self-sustainable' by the year 2030; i.e., that society will see that basic human needs are met without depleting or further polluting the Earth's resources. The Institute acknowledges that in order for its prediction to become reality, a new set of values will need to be adopted, with one difficult component being a shift away from materialism and conspicuous consumption.

In the Institute's hopeful scenario, today's throw-away society will be replaced by one with a comprehensive recycling ethic. In the sustainable world, people will rely much less on automobiles and will live closer to their work in mixed-use neighborhoods, or work at home with the assistance of technology. This will be a world where neighborliness and sociability can be revived, with people walking or biking to schools, shops, and offices, perhaps along streets where houses have front porches. Small towns will experience their own revival. Historic buildings will be preserved, restored and reused.

And what will a sustainable landscape be like in the year 2030? The Worldwatch Institute doesn't propose a scenario for this, so I will:

- Expansive, resource-consuming lawns will be unfashionable, obsolete symbols of over-consumption and pretense.

- Where there is a need or an urge for large, open lawn-like areas these will be pastures in which cattle and sheep graze on native, drought-tolerant grasses, returning nutrients to the soil.

- Other fields will be set aside with rows of solar collection panels harvesting sunlight for power. In the space between the solar collectors will be soil-rebuilding grasses intermingled with colorful drifts of native flowers.

- On the shoulders of roads, hiking and biking trails, and in small openings on residential and industrial sites will be infrequently mown short meadows.

- Food-producing landscapes will have a resurgence, providing more food close to home and reducing the need for long-haul transportation of fruits and vegetables, which will be picked when ripe and eaten in season.

- In the same vein, beautiful vegetable and herb gardens, as well as grape arbors and mini-orchards of dwarf fruit trees will be integrated into home grounds.

- Ornamental plantings will also include a

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To appreciate prairie, one must experience and understand the environment that created it. Drive across Interstate 80 in August. Stop somewhere just west of Lincoln, Neb., and get out of your car. Climb to the top of the roadway embankment and walk a short distance into the fields. Sun will beat down on you in fiery fury as 140°F heat waves writhe and wriggle dizzily across the land. Desiccating blasts of oven wind will parch your lips and ping your skin with sharp dust arrows. Grass rising, falling, tossing in ocean-like waves will churn your stomach and sway your balance with seasickness. Yet in this unbearably hot and dry environment several hundred beautiful plants thrive and multiply.

Repeat your visit at the end of January. Now howling gales and biting winds sting and numb you with windchill factors of -70°F. There's no place to hide and nothing to block wind or even hold snow as an insulating blanket over soil.

Where are the plants? Roots, rhizomes, bulbs, and growing tips (which is over 60 percent of the plant) are all safely protected in soil away from temperature extremes. Stems and leaves which are above ground make up the smaller, more expendable part of the plant. This is the most important adaptation of plants to a harsh, prairie environment.

Four factors shaped the great American prairie that stretched in a rough triangle from Northern Mexico to southern Canada along the eastern side of the Rocky Mountains, narrowing eastward into the prairie peninsula of Illinois, Indiana, and Ohio.

The first was a *glaciation* that occurred over millions of years as continental plates collided causing the formation of mountain ranges and the breaking away of land masses. Ocean currents and rain patterns changed, the Earth cooled, and inland oceans retreated. By 25 million years ago, the climate in central North America had become dry enough for the first grasses to appear. Twenty million years ago, prairies were well-established.

Prairie plants developed an alternative form of photosynthesis, C₄, which allows them to be active at higher temperatures and require much less water. Plants using this system use carbon dioxide more efficiently and have smaller stom-

The mowed lawn aesthetic originated in the late 18th century from aristocratic France and England. Landscape architect André LeNôtre designed small lawn areas for the Palace of Versailles. This aesthetic was rapidly adopted by the rich of England, because turf grass grew easily in the English climate of moderate temperatures and frequent rains.

The U.S. colonists also adopted the lawn aesthetic in an attempt to transform the wildness of the new country into the sophistication of the old world. Landscape architects again were at the forefront, and Lancelot Brown created thousands of acres of magnificent parks using lawn turf and trees.

Prior to the middle of the 19th century, U.S. homes were either built fronting up to the street or road, or else with a small fenced front yard consisting of bare ground or garden plots. The middle class did not copy the wealthy lawn aesthetic until after the Civil War, with the stimulus of the new landscape architects leading the way.

In the late 19th and early 20th century, the USDA, the U.S. Golf Association, and the Garden Clubs of America jointly spread the front lawn ethic throughout the U.S. [They] held competitions for landscaping and shamed neighbors into compliance by setting strong example. 20

According to the National Coalition Against the Misuse of Pesticides (NCAMP), if you have your lawn chemically treated, take these precautions: Do not walk barefoot on it; do not breathe near it; confine children, pets and toys inside; close windows.

Wildlife specialists, such as Diana Conger of Washington, D.C., call bird poisonings in residential areas *2 (1 A; S... N... Y) 74' - S' - 1' r' a, a. a*

How to Naturally Landscape without Aggravating Neighbors And Village Officials

BY BRET RAPPAPORT, Attorney & Wild Ones Past Pres.

In 1981, Darrel Morrison, a professor at the University of Georgia and member of the American Society of Landscape Architects (ASLA), defined three characteristics necessary in natural landscape design:

- 1)
- 2)
- 3)

Not surprisingly, the first professional and amateur landscapers who attempted to realize Morrison's vision ran into public opposition. For several decades, natural landscapers from Florida to Canada faced prosecution for violating local weed laws. These laws, designed to protect the public from neglectful landowners, promoted monoculture and the accompanying notion that man and Nature are independent of each other. Neighborhoods that opposed the non-conformity of the natural landscape attempted to find valid objections for their claims. They argued that natural landscapes resulted in:



Each argument is flawed.

Rats and vermin are products of civilization. They do not live in natural landscapes, eating plants and berries; they live in man-made structures, dining on garbage.

Mosquitoes breed in standing water. Naturalistic landscapes tend to absorb more water than traditional lawns, thus reducing, rather than increasing, runoff and standing water. By providing a habitat for birds, natural landscapes may also increase the population of mosquito predators.

Properly managed naturalistic landscapes do not present any greater fire hazard than any other landscape type. Not only does prairie grass burn quickly and at a low temperature, but natural landscapes comprise mostly green, leafy material that does not burn readily.

Allergens are primarily produced by exotic

grasses, oak trees, and ragweed. Most native plants are insect-pollinated and do not produce airborne allergens. Finally, property values are a function of public perception. As naturalistic landscaping becomes more familiar and gains acceptance, it will be viewed as an asset rather than a liability. Furthermore, as suburban sprawl continues to consume open space and natural settings are lost, those rare elements of nature that remain in a landscape will increase its value. It has been and continues to be a long, tough row to hoe for those who would rather "grow than mow." Confronted with out-dated and ambiguous weed laws, a growing number of environmentally concerned homeowners are standing up to their neighbors and municipal officials and reclaiming their right to landscape naturally. And, they are winning.

For those who undertake natural landscaping in their own front and backyards, five simple steps may minimize potential conflicts and avoid "weed wars." They can be remembered by the acronym BRASH.

BORDERS can provide a sense of order and purpose preferred by most homeowners. A "wild" yard tends to conflict with that preference and can disrupt equilibrium. A simple border—a mowed edge or low stone wall—can keep neighbors mollified, if not happy.

RECOGNIZE the rights of others. You have a right to your coneflowers and bluestems, but your neighbor has a right to his clipped lawn, plastic sunflowers, and concrete lawn deer. Avoid arrogance by remembering that you are trying to win converts, not be a martyr willing to go down in a flood of litigation and neighborhood hostility.

ADVERTISE. Let your neighbors know what you are doing—and why.

Tell them about your project before you start and continue to provide updates as you progress. You may want to consider putting up a small but readable sign that announces that your property is a special place that saves water, eschews toxic chemicals, and provides sanctuary for wildlife. Wild Ones



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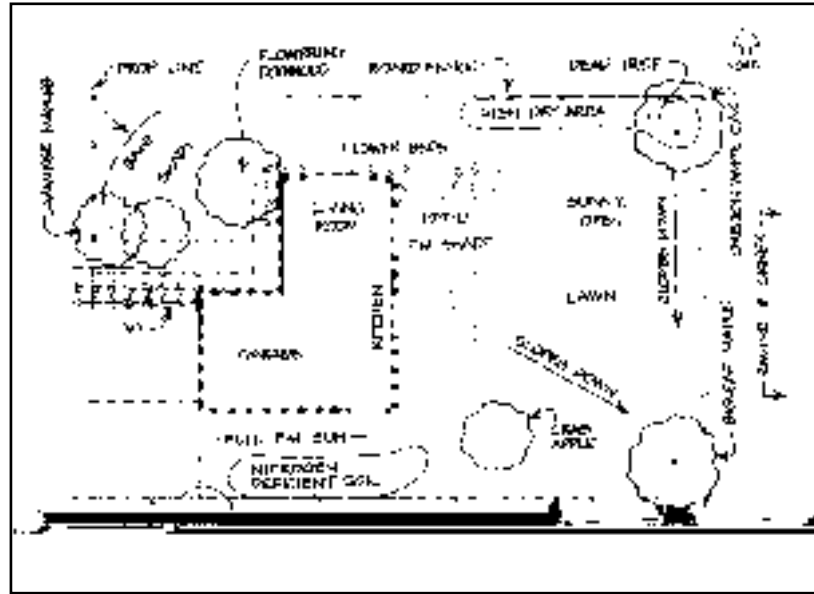


provides such a sign, as does the National Wildlife Backyard Federation. You may also simply make a sign of your own.

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Ob er a a De g

BY BARB GLASSEL, MANDY PLOCH, GLORIA STUPAK, Landscape Designers



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Throughout the design process, we need to educate our eyes by observing Nature. Notice how a forest canopy protects the understory of smaller trees and shrubs. Note the ground layer and forest litter providing nutrients and protection for still more plants. Underneath it all, the terrain tilts and rolls. Move out to the forest edge where tall tree profiles are met by shrub borders that grade down to the meadow. Consider the spacing, groupings, lines.

Now take these observational lessons to the drawing table to develop your master plan. Your goal is to unify all elements into a natural harmony. Once made, you can prioritize implementation of the plan according to your time and budget.

THE BASE MAP

Determine the dimensions of your property and choose a scale for your map. A map drawn at a scale where a four-foot distance equals one inch on paper will allow you to jot in more details than one that is eight-feet-to-the-inch.

Mark a north-pointing arrow and indicate the following items.

- : Buildings (including door openings and window sill heights) decks, fences, walls.
- : Driveways, sidewalks, patio.

: Water faucets, A/C units, utility meters, overhead and underground utility lines, septic systems, easements.

: High and low areas, either those existing or those to be created for a natural look.

: Buildings, trees, roads, etc.

: Common views.

: Drainage swales, water elements, sump pump discharge.

: Both summer and winter.

: Summer and winter.

: Drift and plow-dumping zones.

A WISH LIST

Prepare a list of needed and wanted elements.

: Lawn, sandbox, play structures.

: Dining area, wildlife viewing.

: Patio, pond, hammock.

: Vegetable, herb, cutting.

: Inside and outside dwelling, including where winter interest will best be enjoyed.

: Paths, steps.

: Shed, compost, wood, trash, rain barrel.

: Driveways, sidewalks, patio.


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
DIAGRAMS

Overlay your base map with tracing paper or make copies of the base map on which to enter your ideas from the wish list. Make blobs of space, not specific details. Draw many variations to see which work best.

Draw bubbles around areas where you want activities, such as children's play, entertaining, or wildlife viewing. Use symbols for features such as a birdbath or bench. Draw arrows where you want views, dotted lines for potential pathways, and hatch marks in areas of steep slope. Note general types of plants, such as conifers, low shrubs, vines or a tall hedge. Note some of your ideas, such as a low area for a pond—will you be able to see it from a frequent viewing point?

DESIGN PRINCIPLES

Establish general  in the garden before selecting plant types. Plan gentle, flowing curves.

 obscure objectionable views and emphasize nice ones. They should be plain—just a backdrop. They may be fences, walls, shrubs, trees or a combination of these. Keep in

ldbfences, walls,

from which you can make tea. And then there is the bouquet of individual flowers or the sweet blend of a whole meadow in bloom.

Provide and safe travel corridors for sensitive wildlife. Disturbance to wildlife can be lessened if areas with human activity are clustered and kept small.

are valuable. Avoid putting new features or structures where they will damage trees. Roots extend far from the trunk, and construction close to the roots may harm the tree. Some species cannot tolerate soil applied over their root zone; as little as one inch can kill some oaks.

Upright dead trees, large logs and stumps serve as sculpture and provide food and shelter for many organisms.

Locate patios and decks for Also consider views from inside the house.

COMPLETING YOUR PLAN

Compare your preliminary plans and choose the one that best fits your needs. Now add the details of plant species and materials, and exact locations and dimensions of these features. If you want a pond, for example, you must determine how it will be lined, how it will be cleaned, and if you want recirculating water. Details of grading and drainage must also be designed.

When all details are complete, draw your final plan. Accuracy is important because this is the blueprint that will guide your construction and development over time.

Soils can be divided into three basic classifications: sands, loams, and clays. There is great variation within these basic groups, but these categories will suffice for the purpose of describing where a given plant will grow.

Sandy soils, referred to as *sandy soils*, contain large-sized soil particles that are loose and easy to work. They allow water to drain readily, and tend to be low in nutrients. Sandy soils tend to be more acidic than the more fertile loams and clays. If your soil's pH is below 5, consider adding lime or wood ashes to raise the pH to 6 or 7.

Clay soils are known as *clay soils*.

On small areas of a few thousand square feet or less, smothering is simple. Smothering involves covering the surface with black plastic, old plywood, a thick layer of leaves, or any creative resource available (old pool liners, carpeting, etc.). This should be left for a full growing season to kill the plants beneath.

If you use herbicides, choose a low-toxicity, non-persistent herbicide, such as glyphosate, and follow the manufacturer's instructions. The best is a glyphosate (i.e., Roundup, Ranger or Kleenup).

If you prefer not to use herbicides, a variety of equipment can prepare your soil by cultivation.

The quickest way is to remove the top three inches of grass and soil using a rented sod-cutter. This usually creates a nearly weed-free site ready for seeds or transplants. Be aware that the area will be lower than the surrounding lawn after sod removal. If using herbicides, apply in fall or spring, when lawn grasses are actively growing. Cultivate after everything has turned brown to prepare the seedbed for planting (usually about two weeks). To remove a lawn by cultivation, cultivate two to three times, about a week apart. If rhizomatous perennial grasses such as Quackgrass or Johnsongrass are present, a year-long tilling program may be required.

An old field usually requires at least one full growing season to prepare the site. This may seem long, but a little patience at this stage is essential for a successful planting.

To herbicide, mow in early spring. This will encourage new growth. Apply a glyphosate herbicide three times—once in mid-spring, again in mid-summer, and finally in early fall—unless no plant growth is visible one month after the second spraying. This allows you to attack weeds which have peak activities at different times.

Using cultivation only, cultivate every two to three weeks from spring through fall at a depth of five inches. Be religious about this. If you are fighting rhizomatous, perennial weeds, waiting longer than two or three weeks will allow these weeds to recover. For some species, such as Quackgrass, cultivating in intervals greater than two weeks may actually increase its density.

To prepare with herbicides, spray once mid-spring for spring planting, or after crop removal for fall planting.

The seedbed may be prepared without herbicides using cultivation as you would for any other crop. If rhizomatous perennials are

present, work up the soil all year, same as for old fields. Once all vegetation is removed, the final seedbed should be prepared by tilling or disking, followed by dragging or raking.

Do not plant flowers in fields treated with Atrazine within the last two years. A smother crop of corn or sorghum will hold your soil and control weeds while the Atrazine breaks down.

To avoid runoff and soil loss, the site should not be left unvegetated for any length of time. Cultivation should be minimal. Preparing your site solely by cultivation may create erosion problems. The site should be planted immediately following soil preparation. Use a nurse crop of oats and a cover of mulch, stabilized with netting. If you are unable to plant immediately, the site may be stabilized by planting oats at a rate of four bushels (128 lbs.) per acre. Till the oats under when ready for planting.

After the existing perennial vegetation is eliminated, weed seeds still lurk in the soil below. These seeds will germinate and compete aggressively with your flowers and grasses. Weed density can be greatly reduced by a final treatment of the surface soil just prior to planting in late spring or early summer (this will not work in late summer or fall). Start with a prepared seedbed. Allow weeds to germinate and grow. Apply herbicide when the weeds are two to three inches tall. Wait 10 days, and then till the soil one inch deep. Tilling deeper will bring up more weed seeds. Plant immediately.

If you prefer to avoid using herbicides, similar results can be obtained using well-timed, careful cultivation. Start with a prepared seedbed. Till the soil one inch deep five to seven days after the first good rain. This will kill weeds after they germinate but before they come up, without bringing up more weed seeds. On sandy soils, a drag

Prairies require sunny, open sites with good air circulation. A minimum of one-half day

MOWING

Mowing is the primary management tool used to prevent weeds from shading prairie seedlings. During the first growing season the planting may need mowing a number of times. The cutting height should be 4 to 5 inches (a home lawnmower set at the highest cutting position should work well for small areas). Mow each time the weed growth is 6 to 10 inches high and do not allow weeds to set seed. Do not worry about cutting the tops off or crushing the seedlings. A flail-type mower is preferable for large areas because it chops cuttings into small pieces which will filter down and serve as mulch. If a sickle-bar or rotary-type mower is used, mow more frequently so cuttings will not have become large enough to smother native seedlings. Try to time the last mowing so weeds can grow to about 8 inches before winter. This will help protect young seedlings from heaving frosts.

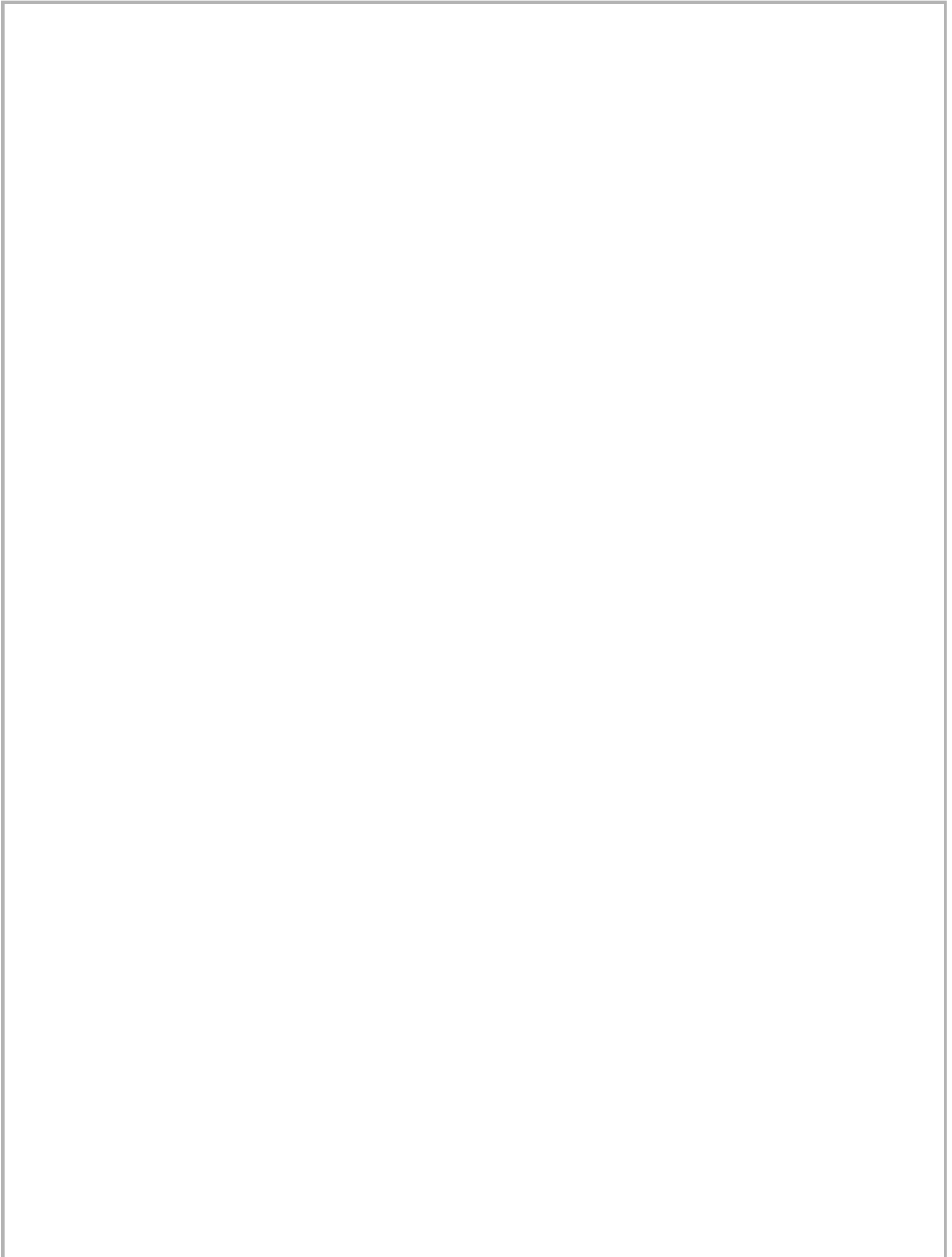
During the second growing season one mowing may be helpful in late spring or early summer if weeds are thick. This should be the last mowing needed for weed control unless a serious problem occurs. Raise cutting height to 6 to 12 inches if mowing during second year.

HAND WEEDING

Hand weeding small plantings during the second and third growing seasons will make a big difference in your planting unless a



In planning a ~~excavation~~, first consider the ~~safety~~ of small children, check local regulations, and call the digger's hotline to locate buried utility lines. Do not disrupt exist-



TOM PATRICK, President, Windstar Wildlife Institute

Do you enjoy observing nature? Hearing the song of a chickadee, watching hummingbirds fill up on nectar from trumpet vines, listening to the chattering of squirrels, seeing the beauty and grace of a monarch butterfly perched on milkweed, experiencing the antics of a mockingbird, the cooing of mourning doves, the swiftness of a cottontail, and the brilliance of a cardinal or Baltimore oriole...

If you enjoy any of the activities mentioned above, you'll probably want to attract more wildlife to your property.

The term "wildlife" means different things to different people. To a livestock producer, it may mean coyotes. To someone who feeds birds, it may mean cardinals, nuthatches, and hummingbirds. To a birder, it may mean rare species. To a gardener, it may mean butterflies.

To a wildlife biologist, the term wildlife means all living organisms out of the direct control of humans. Dr. Thomas Barnes, extension wildlife specialist, University of Kentucky, suggests that the definition should also include the habitat of the species. He says that it is impossible to understand the ecology of a species without having a thorough knowledge of an animal's diet and how this differs during the year, plus how the species relates to its habitat (predators, vegetation, soil, competitors, etc.).

Wildlife doesn't just randomly appear in a given area. It is there because of favorable habitat. To attract more wildlife, you need to apply specific wildlife management practices. To reach your wildlife management goals, you must manipulate the habitat, the animal population, or manage the people (landowners).

ESSENTIAL ELEMENTS OF A WILDLIFE HABITAT

There are four essential elements needed for survival in a wildlife habitat—food, water, cover, and space for wildlife to raise their offspring. If you keep these needs in mind while creating your wildlife habitat plan, your chances for success are excellent.

requirements vary for every species. It changes as they age, and from one season to

another. For some species, the berries in your garden are ideal. For others, it's the nuts and acorns, grasses, grain or seeds, or nectars in flowers.

Water is as important as food and is critical to survival. Adding a pond or bird bath will produce results in a hurry. Perhaps letting your pond overflow will produce wetlands.

Cover is important for weather protection as well as protection from predators. It's also important for nesting and resting. Cover can be provided by shrubs, grasses, trees (including dead trees), rock and brush piles, nesting boxes, and abandoned buildings.

Space is needed for wildlife to raise their young. Most species establish territory and defend it. For example, bluebird nesting houses must be 300 feet apart or the bluebirds will fight each other. Wood ducks and purple martins do not defend territories. Loons prefer 100 acres of lake or wetlands, and ruffed grouse need 10 acres.

BASIC CONCEPTS OF A HABITAT

Before fully evaluating a wildlife habitat, some basic concepts about habitat and relationship of habitat to different wildlife species needs to be understood.

A term that you will often hear in reference to wildlife habitat is *niche*. This refers to the concept that each individual species in a community has its own role within that community. For instance, it is the *niche* of woodpeckers to eat insects under tree bark and to excavate holes in tree trunks, while beavers can be expected to cut down trees and create dams. These are examples of species that are fairly specialized.

Other creatures could be called *generalists*, and they tend to be in competition with one another. For example, raccoons, foxes, and other medium-size omnivores all seek the same fruits and small mammals for food, but the variety of their food sources lets them compete successfully.

Each species performs a specific role in the ecosystem that directly benefits other living things, including people. A good example is that squirrels help forests continue to grow. Squirrels bury acorns for food, but fail to dig up all of them, so acorns sprout and produce new oak trees.

Other birds and animals scatter seeds

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throughout the landscape. Blue jays, for example, are especially important in the long-distance dispersal of acorns and beechnuts. They carry them to distant locations and bury the nuts in soft earth or under leaves. A Virginia study showed that 50 blue jays transported 150,000 acorns in one month. Some of the acorns were retrieved by the jays and eaten later in the year, but many were left to regenerate the forest.

Within a forest ecosystem, plants grow in different vertical layers. This is important because some wildlife species may use the ground layer (herbaceous plants) for food, but they also need the tallest layer (tree canopy) for shelter. The middle layer is composed of shrubs. If you follow nature's lead by planting in layers, this will allow for the different feeding and nesting habits of many species.

While it is not necessary to give up entirely on having a lawn, limiting its size will not only benefit wildlife, it will also save you time and money. Mowing, chemical treatments, weeding, and watering are all costly—both in terms of what you pay for them and the number of hours that you spend doing them.

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WHERE TO BUY

SOME BOOKS TO HELP YOU
WITH YOUR LANDSCAPE

(See additional book list on page 19)

- T_B F a R a by John Eastman
- T_B F a T by John Eastman
- T_B S a a B , by John Eastman
- A C a N A B C , by D. Brown, F. Reichenbacher, S. Franson
- R a W a G C I a P a N a , by Dennis Magee
- A G a L a W a F a , by Steve Chadde
- H a T V 2 D a a a a U.S. a C a a , by L.L.H. Bailey Hortatorium, Cornell University
- T I a C a G a a , by Noel Holmgren
- I a P a U M A L a G T
- I a C , by Elizabeth J. Czarapata
- N W G , by L Newcomb
- P a I a a T : L a a , by J.G. Harris, M.W. Harris
- W a N a U.S. a C a a , by France Royer, Richard Dickinson

- A A A
- A a P a A a G a , by E.A. Roberts, E. Rehmann
- 100 E a G N a P a A a G a T a Z
- by Lorraine Johnson
- G W L M a a S S D a G a
- N a P a , by Lorraine Johnson
- T N a P a R , by Carole Ottesen
- N a G a F D C a , by Andy and Sally Wasowski
- T N a a H a a G a , by Ken Druse

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