

ASSESS THE EXISTING HABITAT

Step three is an assessment of the existing landscape features on your property. Ask the following questions: How does the landscape measure up to the needs of your target species? What habitat elements are missing? How can the area be improved? What is the land's capability according to its site properties (e.g., soil, exposure, and drainage)? Are there any obstacles such as power lines that might influence the type of habitat you can create in certain areas of your property? All of these questions must be answered in the plan if the landscape is to be suitable for the desired wildlife.

MAP YOUR PROPERTY

Step four is to sketch a map pinpointing permanent man-made structures (e.g., house, power lines, garage) and existing landscape features. The map should also include the habitat features you plan to install. Refer to Figure 1.

DEVISE A STRATEGY

In step five, you will formulate a plan for placing and establishing the habitat components, both vegetative and structural (man-made). Human needs such as the amount of space required for recreation should also be considered and incorporated into the plan.

The concepts outlined below will help you make sound management decisions and guide you in designing the plan.

How Much Time and Money?

Decide the amount of time and money you're willing to spend, and budget accordingly. Most of your expenses will be one time investments in feeders, trees, and shrubs, or nest box materials. However, there will be some ongoing expenses such as bird seed, that will occur over an extended period of time. A certain amount of time must also be spent maintaining your investments, and particularly in the cold weather months in keeping feeders filled. Most any improvements you make for wildlife will also increase your property value, so consider these activities a financial investment as well.

Duplicate Natural Habitats

In designing your landscape plan, use the natural habitat as a model. This means, try to reproduce – on a smaller scale – the structural characteristics such as height, width, vegetation density, and plant species composition of natural habitat. For example, a native prairie consists primarily of tall, clump-forming grasses intermingled with an assortment of flowers of various shapes, colors, and fragrances. Prairies are also located in sunny areas. These characteristics make it very appealing to butterflies, so if butterflies are on your want list, try to duplicate the framework of a prairie for your landscape.

Diversify the Landscape

You will attract the greatest variety of wildlife by using a basic wildlife management principle that diverse habitats provide for a diversity of wildlife. You can establish several different habitat types such as meadows, marshes, and mini-woodlands that are all linked together by vegetative corridors in the form of dense hedgerows, thickets, and windbreaks. This will create a mosaic pattern that is extremely attractive to a multitude of wildlife.

The arrangement of these habitat types is critical in blending plants with man-made structures and in making them more accessible to wildlife. Maximize wildlife's use of these mini-habitat communities by avoiding uniform plantings and by employing irregular contour planting configurations which will create additional edge. Note in Table 1 that the majority of wildlife species listed are inhabitants of edge habitats.

Choose the Plants

Develop a resource list of trees, shrubs, flowers, and grasses that can be used to establish each habitat type. Make sure to match the plant to the soils, exposure, and drainage conditions on your property. Plants, like animals, have specific habitat needs. A hazelnut, for instance, prefers well drained soils and full sunlight –planting this species in a wet, shady area would only lead to failure and a waste of time and effort.

Select native flora whenever possible, primarily because they are better adapted to local environmental conditions and have ecological safeguards which keep them from spreading and displacing other native plants. Be cautious about selecting exotic plants; many of them will become a nuisance and disrupt native ecosystems. Tables 2 and 3 show plants recommended in landscaping for wildlife. Many of these plants are represented in the sample plan (Figure 1). A list of nurseries where you can obtain planting stock and seeds is available from the Division of Wildlife. Request Publication 308, *Wildlife Habitat Planting Stock Sources*. You may refer to the *Planting Trees and Shrubs for Wildlife* publication for information on planting methods and procedures.

Choose the Structural Components

Determine which structural components are needed to supplement the vegetative communities you have established. The following is a brief summary of the structures that can be integrated into almost any landscape plan.

Den boxes increase nesting opportunities and improve the overall carrying capacity of the land. Refer to the *Artificial Nesting Structures for Wildlife* publication for more information. By checking the utilization of each box, you can monitor trends in local populations and get a general impression of how wildlife is responding to your management efforts.

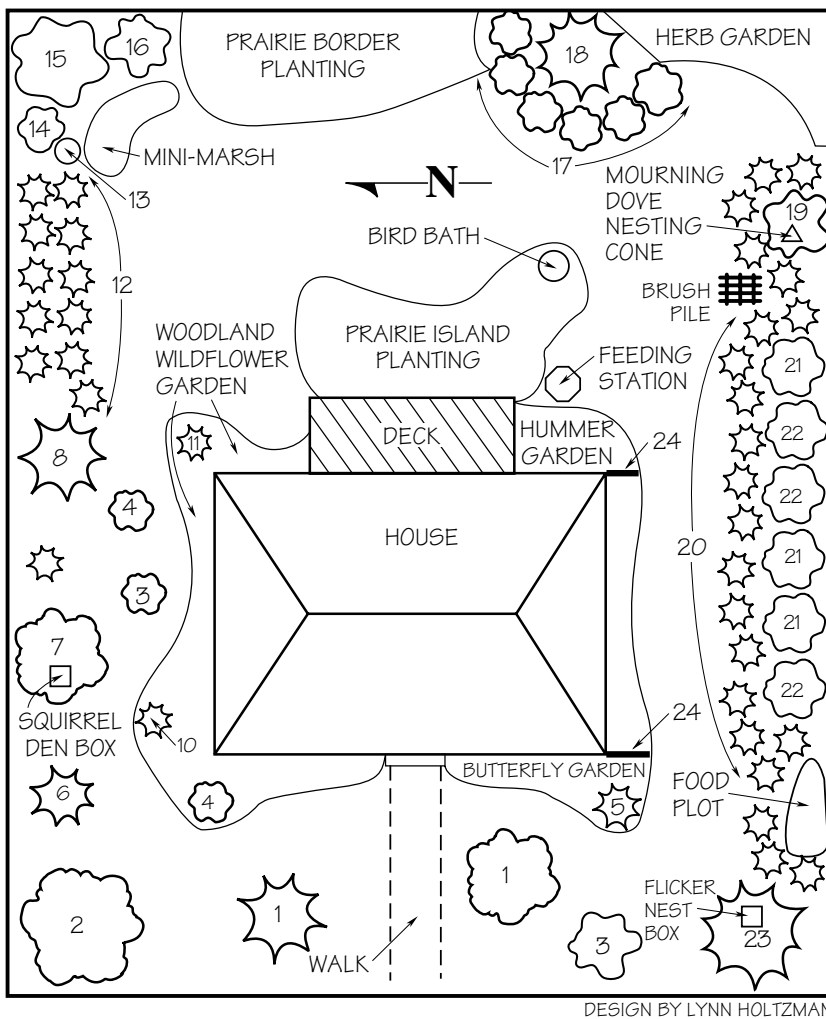


Figure 1. A sample plan designed for an 11,000 square foot area (approximately 1/4 acre). With a few minor modifications, it could be adapted to fit into any size property.

1. Sweetgum	11. Lilac	19. Norway spruce
2. Black maple	12. Mixed double hedgerow	20. Mixed single hedgerow planting which includes Washington hawthorn, crabapple, and wild plum
3. Flowering dogwood	13. Elderberry	21. White cedar
4. Redbud	14. Buttonbush	22. White pine
5. Butterfly bush	15. Sycamore	23. White ash
6. Witch-hazel	16. Common alder	24. Trellis with scarlet
7. Ohio buckeye	17. Sumac (sp.) clump planting	
8. Basswood	18. Red oak	
9. Spicebush		
10. Ironwood(sp.)		

Brushpiles provide a source of escape and winter protection during the early stages of habitat development. A bird bath serves as a grooming center and, if equipped with an aerator or heater, a source of water during winter.

Feeding stations are as entertaining to humans as they are valuable to wildlife. Location, feeder style, and food type dictate the kinds of wildlife that will visit the station. For example, if you scatter millet seed on the ground, you will entice ground feeding birds such as northern juncos and white-throated sparrows. However, you may exclude species such as the tufted

titmouse and white-breasted nuthatch that prefer to feed from a more elevated position. A few fundamental rules to observe when setting up feeding stations include:

1. Use a variety of feeder types, such as a gravity-fed cylinder tube, hopper box, platform, and suet feeder, positioned at different levels above ground.
2. Offer a smorgasbord of foods: millet for ground feeders, black oil sunflower and thistle for finches, and peanuts and suet for woodpeckers.
3. Provide more than one station and position them next to cover that will supply perching sites and protection from harsh weather and aerial predators. Make sure they are visible from somewhere in your home.
4. Clean the feeders regularly –don't allow the food to become spoiled and moldy.
5. Maintain the station continuously from October to April.

By following these simple rules you will minimize competition among bird species and improve the number and kinds of birds attending the station.

DO IT!

This is the all-important final step. The plan is no more than a piece of paper and a good learning experience until you implement it. While you carry out the plan, share the time with children, taking the opportunity to instill an appreciation and respect for nature in them that will remain the rest of their lives. Organize and deploy your time, tools, and talents prudently; don't try to accomplish all the work in one year. Set yearly

goals based on your resources, and then achieve them. Remember to have fun—don't make it another burdensome task in an already busy schedule. And the final step? Delight in the fruits of your labor!

Table 2. Woody plants recommended for use in wildlife landscaping designs.

Species	Wildlife Use ¹			Soil Moisture ²	Light Tolerance ³
	Songbirds	Mammals	Butterflies		
TALL TREES					
White ash	F			M	Sn-LSd
American basswood	F	F		M	Sd
Sweet gum	F	F		W-M	LSd-Sd
Black maple	F,S	F,S		M	LSd
Red oak	F	F		M-D	Sn-Sd
Sycamore	F,S	S		W-M	Sn-LSd
Hickory, shagbark	F	F		M-D	Sn-LSd
Ohio buckeye		F	N	W-M	Sn-LSd
White pine	S			M-D	Sn-LSd
Norway spruce	S			M	Sn
White cedar	S			M-D	Sn
SMALL TREES					
Flowering dogwood	F	F	N	M-D	Sn-LSd
Crabapple	F	F	N	M-D	Sn
Wild plum	F	F	N	M-D	Sn
Washington hawthorn	F,S	F	N	M-D	Sn
Ironwoods	F			W-M	LSd-Sd
Redbud	F		N	M-D	Sn-LSd
Witch hazel	F	F		M-D	LSd-Sd
SHRUBS					
Dogwood (gray, silky, red-osier)	F,S			W-M	Sn
Sumacs	F	F	N	M-D	Sn
Common alder	F,S			W-M	Sn-LSd
Black chokeberry	F,S	F		M-D	Sn
Hazelnut	F,S	F		M-D	Sn
Lilac			N	M-D	Sn
Butterfly bush			N	M-D	Sn
Elderberry	F			W-M	Sn-LSd
VINES					
Bittersweet	F			M-D	Sn-LSd
Scarlet trumpet creeper	F,S			M-D	Sn
Grape	F,S	F,S		M-D	Sn-LSd

¹ F = Food, S = Shelter, N = Nectar.² W = Wet, M = Moist, D = Dry.³ Sn = Sun, LSd = Light Shade, Sd = Shade.

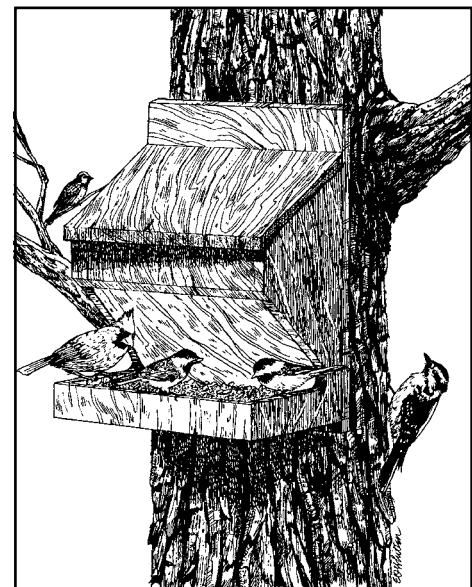
Table 3. Flowers and grasses recommended for use in wildlife landscaping designs.

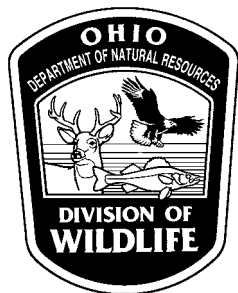
Species	Wildlife Use ¹			Soil Moisture ²	Light Tolerance ³
	Songbirds	Mammals	Butterflies		
PRAIRIE GRASSES					
Big bluestem	S	S		W-D	Sn
Indian grass	S	S		M-D	Sn
Side oats grama	S	S		M-D	Sn
Little bluestem	S	S		M-D	Sn
Cordgrass	S	S		W	Sn
PRAIRIE FLOWERS					
Purple coneflower	F		N	M-D	Sn
Butterflyweed			N	M-D	Sn-LSd
Asters			N	W-D	Sn-LSd
Tall coreopsis	F		N	W-M	Sn
Rattlesnake master	S			M-D	Sn
Blazing stars	F		N	M	Sn-LSd
Wild bergamot	F		N	M-D	Sn
Purple & white prairie clovers	F		N	W-D	Sn
Prairie dock			N	W-D	Sn
Goldenrods			N	W-M	Sn
NONNATIVES					
Lantana			N	M	Sn
Zinnias			N	M-D	Sn-LSd
Red clover	S	S	N	M-D	Sn
White alyssum			N	M-D	Sn
Salvia	F			M-D	Sn-LSd
Verbena			N	M-D	Sn
Hollyhock			N	M-D	Sn
Mexican sunflower	F		N	M-D	Sn
Orchard grass	S	S		M	Sn
Timothy	S	S		M	Sn
Bluegrass	S	S		M	Sn

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