

Fencing

Fencing has been a part of our culture since European settlers first came to this great land. You can still see the remnants of wood and stone fences across the Bluegrass State. Fences served many purposes, including marking ownership, preventing trespassing, and confining livestock or wildlife either in or out of specific locations. Today fences are a common feature of nearly every farming operation. Most are used to contain livestock within the owner's property and exclude them from agricultural crops. This document is designed to serve as a guide to fencing your property or farming operation to benefit wildlife through increased habitat, while decreasing maintenance costs and increasing productivity.

Whether you have a working farm or use your property primarily for hunting or recreation, you will probably have a fence of some type on it. If you have or are planning to install a fence on your property, there are several things that you can do to make sure it is placed in a location that will benefit you, livestock and wildlife. You may also have a property without fences that could greatly benefit from the construction of one. Listed below are several scenarios with fencing recommendations that benefit wildlife as well as farming operations.

Woodlands

There are many good reasons to fence livestock out of woodlands. Grazing of woodlots destroys the regeneration of the understory, essentially removing forb and shrub layers from the forest, leaving only the upper canopy for available habitat. Livestock trampling can damage tree roots, which can lead to disease and mortality of timber, and cause soil compaction, leading to increased surface runoff and erosion. Fencing woodlands to the exclusion of livestock can be very beneficial in terms of both timber production and wildlife management. A dense ungrazed understory provides important nesting, brood rearing, foraging and escape



Figure 1. Old and new. A stone fence has been replaced with a woven wire fence.



Figure 2. High tensile wire fencing.

Fenced buffer zones around ponds and streams will benefit both water quality and wildlife.



You can easily meet your livestock's shade needs...while excluding them from the majority of the woods.

cover for various songbirds, upland gamebirds and small mammals associated with the forest floor and shrub layer. The understory may also provide increased browse, mast and cover for animals such as deer, squirrel, and rabbits. Ungrazed woodlots can be expected to have higher quality and quantity timber production. A common reason landowners do not exclude livestock from woodlands is shade. However, you can easily meet your livestock's shade needs by allowing them access to small portions of your woodlands that have poor potential for timber production or wildlife habitat while excluding them from the majority of the woods. Setting the fence 25 feet or more out from the tree line also provides an opportunity to manage the strip between the woods and pasture in shrub* and/or grass-legume* mixtures, creating an edge* effect that is extremely beneficial to wildlife.

Ponds

Allowing livestock free access to ponds leads to bank erosion, as well as the potential for algae blooms or excessive growth of other undesirable vegetation due to the high nutrient content of the manure deposited there while livestock are watering. Ponds located in pastures or haylands should be fenced to eliminate livestock from most, if not all, of each one. A pipe and trough system can be used to provide water for livestock in such situations. A buffer zone at least 25 feet wide around ponds is recommended to allow herbaceous vegetation to grow within the fenced area to provide food, cover, breeding and nesting areas for waterfowl, shorebirds, invertebrates and a variety of frogs and salamanders. Water quality will also be improved in the ponds once buffers are in place. Again, as with woodlands, you do not necessarily have to exclude livestock from the entire pond. While complete exclusion would be best, allowing one limited access point and protecting the remainder of the pond will suffice if there is no alternative. If you have several ponds, you should fence most of them completely and allow limited access to one or two. If your ponds dry up annually or you would rather manage them for fishing or waterfowl, you may want to consider alternative watering sources, such as tanks or troughs placed in various locations on your property.

Streams

Excluding livestock from streams should be a part of every farming operation. Fencing 15-150 foot buffers along streams will benefit both water quality and wildlife. Lands adjacent to streams are highly productive because of the nutrients they receive from adjacent uplands. Streamside management zones* are an important component of the ecosystem for several reasons. Properly managed streamsidess reduce runoff, erosion and sedimentation. They also filter water, replenish groundwater reserves and help moderate flooding. Wildlife also benefit greatly from a healthy streamside management zone. The vegetation in these areas is often unique and very diverse, providing excellent food and cover. The linear shape

creates natural travel corridors* linking otherwise isolated habitats. Fish and other aquatic organisms depend on the cover and shade of overhanging vegetation to moderate temperature fluctuations and maintain oxygen levels.

Field Borders

One of the easiest ways to provide escape cover and travel corridors for a wide variety of wildlife is to create a shrubby fencerow around and between fields. Fencing 15-25 feet out from the edge of a woodland, crop field, pasture or hay field can provide a tremendous amount of habitat for quail, rabbits, songbirds and other wildlife simply through natural revegetation*. This type of habitat can also be enhanced through planting shrubs* and/or grasses*. Such sites can even be managed as food plots* or by periodic strip disking*. Maintenance cost on field borders is reduced by only mowing* a portion of the area between the fence and the field or woodland each year. The entire fencerow would be mowed over a period of 3-5 years; just often enough to keep the vegetation from getting too big for farm machinery to handle. This rotational mowing system reduces time and diesel fuel requirements while providing various stages of growth for a variety of wildlife species. Damage to fences from tree limbs, or entire trees, will also be reduced by having the fence clear of overhanging limbs.



Figure 3. Wooden plank fence.

Odd Areas/Cover Islands

Fencing livestock out of odd areas, corners of fields, sinkholes and unproductive croplands* can create large amounts of wildlife habitat. The cover created by these areas can be havens to various wildlife species. Quail, for example, need some shrubby escape cover within 100 yards of any given point in a field. One example of an odd area that could be fenced to create cover is a continually wet area that is often difficult to farm. Field corners can also be fenced off and either planted or allowed to naturally revegetate. Marginal cropland taken out of production may better serve as wildlife habitat. Sinkholes can also be fenced to prevent runoff from entering the water supply while also protecting and providing habitat for bats and other wildlife.

Rotational Grazing

Fencing is a major component of any rotational grazing* operation. The fencing in this situation would be used to set up paddocks (individual pastures) of warm and cool season grass which are grazed on a rotational basis by simply moving livestock from one paddock to another at appropriate time intervals. These systems benefit farmers by more efficiently utilizing forages and reducing fertilization and reseeding costs. Pasture productivity is also improved by favoring desirable pasture species and more even manure distribution. Such systems benefit wildlife by providing high quality nesting habitat in the idle paddocks.

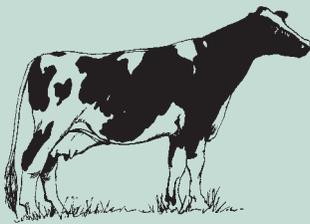
Fencing odd areas, field corners, sinkholes and crop field borders can create large amounts of excellent wildlife habitat.



Figure 4. Temporary fencing.

Fencing Considerations

There are several things to consider before undertaking any fencing project. Type of livestock and primary function of the fence should determine the specific design chosen. Be sure to think of livestock management, handling, watering and feeding when locating fences. Location of the fences should also allow for ease of maintenance. Soil erosion potential should be considered when planning construction on a steep slope. Construction in loose soils or uneven terrain may require additional bracing. You should also consider whether you wish to exclude or allow access by wildlife and make adjustments to the fence accordingly. Follow all manufacturer and safety guidelines closely during installation of any fence. Be sure to comply with all state laws and construction standards when installing boundary fences. Below are recommended specifications for the various types of fencing.



Be sure to think of livestock management, handling, watering and feeding when planning location of fences.

Temporary vs. Permanent Fence

There are basically two types of fence. Temporary fences are used to divide land for a rotational grazing system or to temporarily exclude livestock from a field while it is being renovated or cropped. Permanent fences are used to exclude livestock from all areas needing permanent protection, such as streams, ponds, sinkholes, croplands or woodlands, or to set up a permanent rotational grazing system.

Wire Types

There are many types of wire available for use in fencing projects. Some of these include barbed wire, woven wire, high tensile, and poly-wire. The wire you choose depends largely on your objectives and budget. Ideally all wire should be galvanized and No. 9 or heavier for bracing and No. 12.5-15.5 between the posts. Woven wire can be used for cattle, horses, sheep, hogs and goats. However, it may be limiting to the movement of certain wildlife species. Barbed wire is suitable for cattle and horses. High tensile wire is also suitable for cattle, horses and larger animals. It should be 12.5 gauge, type III galvanized, and rated at 170,000 psi. Poly-wire is primarily used as temporary fencing in rotational grazing systems or fields being renovated.

Post Types

Posts are available in wood, steel, and new poly-plastics. If possible, trees should be avoided to protect their health and usefulness. However, if they are used, make sure the tree is large enough that movement will not affect the fence. It is a good idea to install a spacer between the wire and the tree to prevent the tree from growing around the wire. A piece of two by four makes an ideal spacer.

Wooden posts are available either treated or untreated. If using untreated posts, you should select tree species that are resistant to decay such as black locust, red cedar, Osage orange or catalpa. Wooden posts should be 8 inches or larger in diameter for corner posts and 4 inches or larger in diameter for line posts.



Figure 5. Barbed wire.

Steel posts have a flange at the base for added stability and studs or grooves that support the wire. They should be galvanized.

Poly-plastic posts are best used as line posts with wood posts being used at the corners and predetermined intervals along each section. Be sure to follow manufacturer recommendations on installation and spacing of any post you use.

Spacing of Wire and Posts

Recommended height for most fencing is 46 inches minimum. Temporary fencing can be 30-36 inches in total height. These heights may need to be adjusted to your particular needs. For example, if you were trying to exclude deer you would need at least an 8-10 foot fence. Spacing for barbed wire is recommended at 10, 22, 36 and 46 inches from the ground. High tensile wire should start 5-10 inches above the ground and be spaced at 10, 20, 30 and 46 inches. Strive for 150 pounds of pressure on each wire of high tensile fence. **Warning: Overstretched wire may break and recoil. Always wear eye and hand protection when installing or maintaining fence.** When installing woven wire fence you may want to run one strand of barbed wire 6 inches above the top and one at the bottom to deter livestock from trying to push down or pull up on the fence.

Corner, gate and brace posts should be wooden, spaced 8-10 feet apart, and set 36 inches in the ground. Wooden line posts should be set 24 inches in the ground, while steel posts should be buried past the flange. Line posts should be spaced 10-15 feet apart for barbed or woven wire and a maximum of 50 feet apart for high tensile wire. When using 50 foot spacing with high tensile wire, two 42-inch fiberglass or insultrimber line braces should be placed at equal intervals between each line post and more frequently if needed. When using steel posts for barbed or woven wire, it is recommended that every 10th post be wooden. For high tensile wire, every 6th-8th post should be wooden. Temporary high tensile fencing or poly-wire should have line post spacing of 60 feet on level terrain and 30 feet on inclines with a minimum height of 30-36 inches. As before, fiberglass or insultrimber line braces should be placed at equal spacing for every 50 feet of fence or closer if needed.

Energizers

Energizing your permanent or temporary high tensile wire fence is also an option. If you are going to energize the fence, a 5000-6000 volt peak output, high power low impedance energizer with a pulse cycle of less than 300 millionths of a second is recommended. Be sure to use a quality, high impact, and weather resistant unit with a lightning arrestor. Energizers are powered by 12-volt battery, solar cell or household electrical current.

Tips to Remember

When constructing any fence, be sure to use the appropriate spacers, braces, springs, fasteners, clips, pins, staples, and other materials in accordance with manufacturer recommendations.



Figure 6. Cornerpost bracing on woven wire fence.



Your fence posts can make great locations for the installation of bluebird boxes (see Nesting Structure Habitat How-to.)

SUMMARY OF OPTIONS:

Area to be Fenced:

Woodland, Pond,
Streamside, Field Border,
Odd Area, Rotational
Grazing Paddock

Type of Fence:

Temporary, Permanent

Wire Type:

Barbed Wire, Woven Wire,
High Tensile, Poly-Wire

Post Type:

Wooden, Steel, Other

Regular inspection and maintenance of fences should be part of an ongoing management program. Fencing, when done properly, can benefit a farm economically, environmentally, and recreationally through hunting or viewing wildlife. Fencing livestock out of woodlands and streams, and using fencing to set aside field borders and other areas to develop as food and cover for wildlife are among the most important habitat improvements a landowner can undertake.

**Related Habitat How-To references:*

Natural Revegetation
Grazing and Haying
Mowing
Cropland Management
Edge Feathering
Forest Regeneration
Streamside Management
Cover Thickets
Wildlife Corridors
Field Borders and Filter Strips
Timber Stand Improvement
Trees and Shrubs
Native Warm Season Grasses
Cool Season Grasses
Strip Disking
Food Plots
Nesting Structures



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Planning for My Property