

Natural Revegetation

If left undisturbed, non-forested lands in Kentucky typically undergo a predictable series of vegetation growth stages, eventually becoming mature forests. Each stage, from annual grasses and forbs (broadleaf plants) to mature forest, benefits certain types of wildlife. The job for the wildlife manager is to understand the vegetation stages needed by wildlife and then determine ways to provide and maintain those stages. One way to establish the desired vegetation stages or habitats is to allow the selected areas to grow naturally into the needed stages. This practice is known as natural revegetation.

Providing all the necessary vegetation types is the major challenge and it is often where success or failure of a wildlife habitat improvement project is determined. Some recommended wildlife habitat improvement practices are expensive and time consuming. On the other hand, you may be surprised to learn that some critically important wildlife habitat components may be provided at little or no expenditure of time or money. The use of natural revegetation is one of those low cost ways of providing excellent habitat.

However, achieving the desired habitat stage by natural revegetation may not require nearly as much effort as the eventual need for maintaining the area at that stage. Generally, early vegetation stages, such as grasslands, require the greatest effort to maintain. For example, you must consider if you will have the ability to provide the intensity of



Figure 1. Natural revegetation is obvious on any undisturbed openland.



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management required to keep an area in annual grasses and forbs before you decide to put the effort into creating that habitat type. Compared to annual or perennial grasses, maintaining a mature forest requires very little effort.

What are the vegetation types that may be created by natural revegetation?

Below are five general vegetation stages listed in the order in which they naturally occur. If an area of land is disturbed down to bare ground as a result of plowing or disking, the first vegetation stage to occur will be annual grasses and forbs. So, that stage is the earliest or youngest stage. The final stage is mature forest. That is the last or oldest stage. Beside each vegetation stage is listed an example of just a few of the wildlife benefits of that stage.

Vegetation Stage	Examples of Plants	Benefits to Wildlife
Annual grasses and forbs	Foxtail grass and ragweed	Areas of bare soil, seeds
Perennial grasses and forbs	Warm and cool season grasses/clover	Nesting cover, forage
Vines, briars and shrubs	Blackberry, grapevine, dogwood	Escape cover, fruits, berries and buds
Young forest	Ash, poplar, maple, sassafras	Seeds and buds
Mature forest	Oak, hickory, walnut, beech	Tree cavities for nesting, nuts



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Where will the plants come from?

The technique of natural revegetation relies upon plants growing from three primary sources: 1) from plants already on the site, 2) from plants lying dormant in the soil as seeds or roots, and 3) from the seeds of nearby plants carried by the wind or animals. Often times, many desirable species of plants may already be present. Young plants may be held back by more aggressive species that outcompete them for moisture, sunlight, and nutrients. Tall fescue grass is a prime example of an undesirable and very aggressive plant that suppresses many favorable plants. If fescue is eliminated, numerous desirable plants will be released to grow into good habitat.

Seeds and roots may lay dormant in the soil for many years. Lack of sunlight may be the primary factor keeping them from sprouting. In most cases complete or partial removal of tall vegetation such as trees will enable enough sunlight to reach the ground to allow grasses, forbs, vines and shrubs to emerge from the soil.

Lastly, even though seeds may not be present exactly where you want a specific habitat type to grow, those desirable plant types may be close enough for their seeds or nuts to be delivered by the wind or by animals. Light seeded tree species such as maple and ash are especially efficient at being transported by wind. Seeds of berry producing species such as dogwoods and hawthorns are frequently dropped by birds. Fruits and nuts such as persimmons and acorns are carried by squirrels and opossums.

How do I get started with natural revegetation?

First, find a place. Choosing the right place depends a great deal upon the habitat stage you decide to create. If you decide to make an annual grass and forb area you should select a location which poses no concern for erosion problems and can be accessed easily with the proper equipment. Although you will not have to plant the desired species of annual grasses and forbs, such an area will require disking* or tilling every couple of years. The ground must be level and not covered with rocks or stumps that would interfere with the use of farm equipment.

Perennial grasses such as the various species of native grasses common to Kentucky appear in many places once competing vegetation is removed. Ideal locations to attempt natural revegetation of native grasses are those that lend themselves to be maintained by mowing* or prescribed burning.* Such areas must be relatively level to allow safe use of a tractor and brush-hog or, if burning is the management option chosen, they must be in areas that are compatible with the creation of adequate firelanes.

The final three stages of habitats (shrubs, young forest, and mature forest) are the least restrictive to a particular location. Many times landowners choose to create shrub or forest areas on portions of their lands that are the most steeply sloped or have the poorest soils. They save their best and most level soils for agricultural purposes or for the earlier habitat stages that must be maintained using farm equipment. Steep hillsides and valleys are logical locations for woody habitat creation. You may even choose to create forested habitat on level ground that was once used for agricultural crop production. (Note: Even though crop fields will most likely be excellent soils for growing trees, be aware that an area that has been put in crops for several years is unlikely to have seeds or roots of shrubs or trees. Rather than using natural revegetation to produce trees or shrubs in those areas, planting of the desired tree species* would result in the greatest success.)

Mark off the area to be allowed to revegetate naturally. Identify the boundary of the entire natural revegetation area. Driving metal fence posts or painted wooden stakes or using some other method of designating this habitat area may be critically important to its success. This is less important if only one person will maintain the area for years to come. But if there is a possibility that other people will be mowing or raising crops adjacent to this habitat, it is essential that a boundary line be clearly visible to avoid accidental damage to the area.



Desirable plants may be held back by aggressive, undesirable species, such as tall fescue, that outcompete them for moisture, sunlight, and nutrients.



Figure 2. Woodland habitats require the longest time to create and the least effort to maintain.



Where you implement natural revegetation depends on the type of vegetation needed.



Obviously, if livestock will be grazed next to the natural revegetation area, a fence* must be erected and carefully maintained to prevent damage to that habitat.

Determine the type of site preparation needed. To initiate natural revegetation you must first eliminate what, if anything, is suppressing the desired type of vegetation. If the beginning signs of the desired type plants are present already, then you may choose a *passive* approach. In this case you do nothing but wait and see what happens. This is most likely the best first step. If you wait a year or two you may see the desired results without doing anything else. A *chemical treatment* to the area may be required once you realize the desired vegetation type is being too suppressed to emerge or if you are desiring a vegetation stage that is of an earlier type than the one present at the time. For example, if the area is currently occupied by blackberries and shrubs and you desire it to become a native warm season grassland, you may choose to begin the natural revegetation process by spraying herbicide to eliminate the briars and shrubs. Specific chemicals, such as Crossbow® and Arsenal®, are available for use in killing shrubs or trees that may be shading out desirable plants. Chemical treatment of dense stands of fescue can result in the growth of many excellent, naturally occurring plants. *Mechanical treatment* such as brush-hogging, chainsawing, disking* or tilling may be used for the same reasons as stated for chemical treatments. Competition from fescue may be reduced by heavy disking or tilling. A tractor and brush-hog may be used to eliminate briars, shrubs, or young trees. Larger trees may require felling with chainsaws or girdling standing trees. In some instances a combination of *mechanical and chemical treatments* may be the most practical means of getting off to a good start. Using the above example, an area covered with briars and shrubs may be brush-hogged to the ground and then chemically treated to eliminate sprouting of those plants. This would give the native warm season grasses their best chance at success.

How long do I have to wait for my desired habitat type to grow by natural revegetation?

Once the site preparation work has been done, just sit back and wait for your project to develop. How long it will take depends upon many different factors such as how well your site preparation effort works, the types of soils, and the stage of habitat you desire to achieve. If things go well you can expect results to occur as indicated on the following table.

Type of Habitat Desired	Average Time to Reach Success
Annual grasses and forbs	1 year
Perennial grasses and forbs	2 - 5 years
Briars, vines and shrubs	3 - 10 years
Young forest	15 - 30 years
Mature forest	50 - 100 years

Once a habitat stage is established, how do I maintain it at that level?

Maintenance of a desired vegetation stage will be most intensive for the earliest vegetation stages (such as annual grasses and forbs) and will be least or not required at all for the latest stage (mature forest).

The primary habitat maintenance techniques involve *disking*, *mowing*, *prescribed burning*, and *chainsawing*. (Note: herbicide treatment may be used as a means of maintaining an area in the desired vegetation stage, but it is more often used in the establishment of the desired habitat or for controlling exotic and invasive plants.) *Disking* may be conducted to maintain habitat stages from annual grasses through shrubs and it is the only one of these techniques that will assist in establishing or maintaining annual grasses and forbs. Heavy disking in briars, vines and shrubs may revert the area back to bare ground and annual grasses while less disking in that same area will expose less bare soil, thus maintaining it in perennial grasses or cause new sprouting of briars, vines and shrubs.

Mowing may be used to maintain habitat stages from perennial grasses through shrubs. It is not useful for annual grass maintenance because it does not disturb the soil. *Prescribed burning* may, if done with the proper burn plan, expert technical advice and caution, be used to maintain perennial grasses and forbs and plant growth stages up to and including some types of mature forest situations. However, its greatest value to the average Kentucky landowner may be to help establish and maintain native warm season grasslands and prevent the establishment of woody vegetation.

For natural revegetation purposes, *chainsawing* is mainly used to keep tall trees out of briar, vine and shrub areas or to keep young woodlands from advancing into a mature stand. As an additional benefit it should be noted that trees and shrubs removed can be used to make excellent brush piles* for wildlife.

One key to choosing to establish a particular stage of vegetation is to make sure of your ability to maintain it in the future. Remember, the earlier stages of plant growth require more intensive management than the later stages. Also, be sure not to allow the vegetation in an area to grow far beyond the desirable stage. It will take a great deal more work to revert it back than it would to regularly maintain.



Always consider the effort that will be required to maintain your wildlife habitat project before you begin.

Techniques Used for Maintaining Plant Growth Stages

	Disking	Mowing	Prescribed Burning	Chainsawing
Annual Grasses and Forbs	X			
Perennial Grasses and Forbs	X	X	X	X
Briars, Vines and Shrubs	X	X	X	X
Young Woodlands			X	X
Mature Woodlands			X	

SUMMARY OF OPTIONS:

Desired Habitat Type

- Annual grasses and forbs
- Perennial grasses and forbs
- Vines, briars and shrubs
- Young forest
- Mature forest

Location

- Tillable farmland
- Gently sloped land
- Steeply sloped land

Designating Area

- Mark with flags or stakes
- Erect fence

Type of Site Preparation

- Passive
- Chemical
- Mechanical
- Mechanical and Chemical

Maintenance

- Disking
- Mowing
- Prescribed Burning
- Chainsawing



Figure 3. Level ground is ideal for grassland creation and maintenance, while hillsides are best reserved for woodlands.

*Related Habitat How-To references:

- Brush Piles
- Fescue Eradication
- Strip Disking
- Trees and Shrubs
- Mowing
- Prescribed Burning
- Forest Regeneration
- Timber Stand Improvement
- Edge Feathering
- Fencing



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Planning for My Property