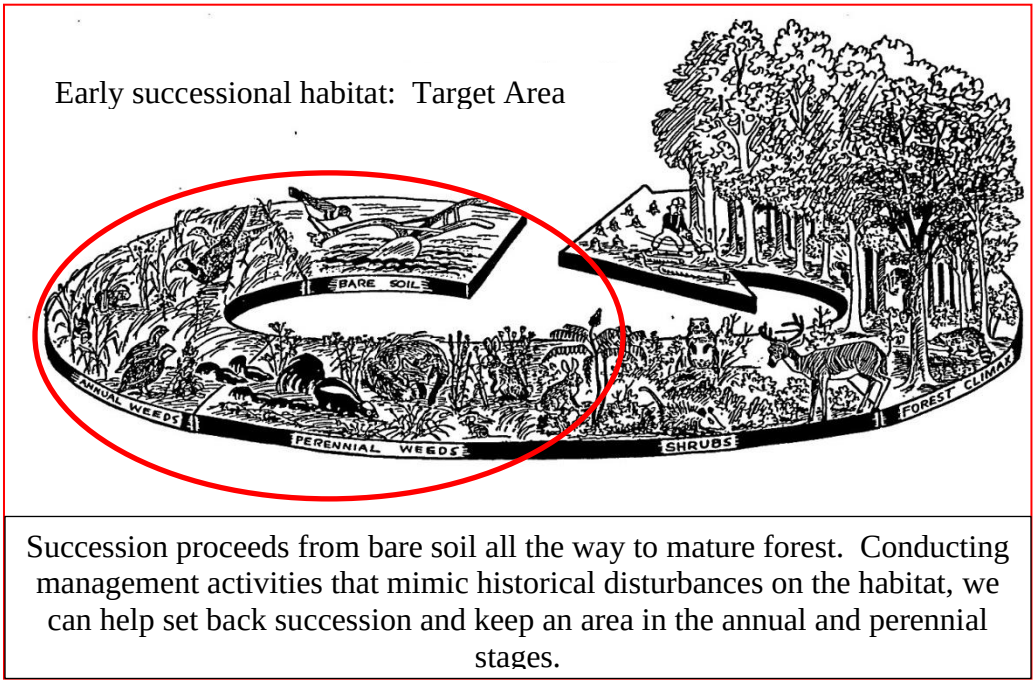
Early Successional Habitat Management

In order to maintain early successional habitats, landowners must carry out management on the property. Early successional habitats are open habitats generally covered in annual plants, grasses, and forb species. These areas are maintained through management activities such as strip disking, strip spraying, and prescribed burning, and/or mechanical clearing.

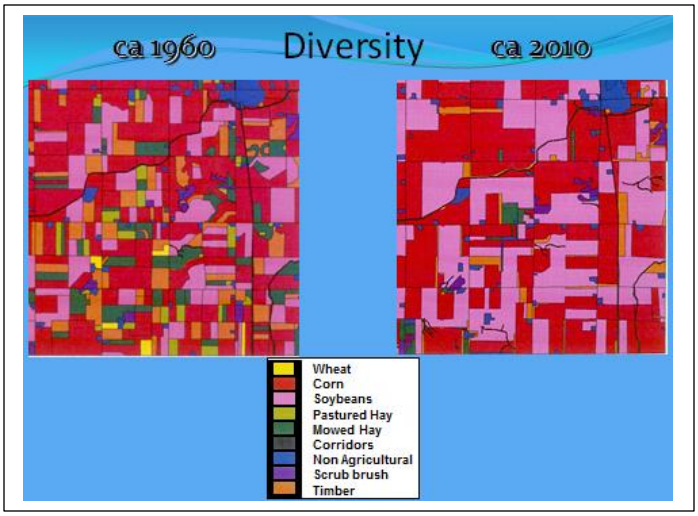
All of these activities will set your land back in succession, which is important to many game and non-game species. All habitats will proceed in succession from bare soil to an annual plant community, then a perennial grass and forb community, to a grass and shrub community, into the final stages of woodlands and forest communities. Setting back successional means to keep disturbing the area to revert it towards one of the earlier successional stages.

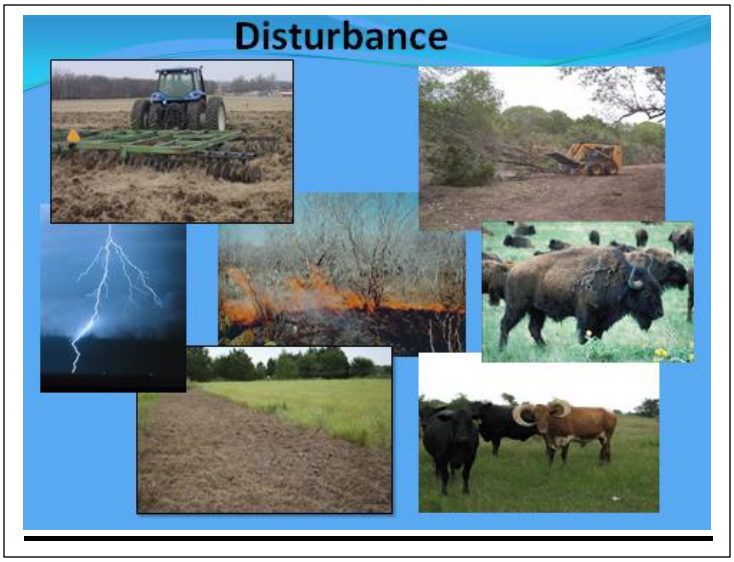


Succession proceeds from bare soil all the way to mature forest. Conducting management activities that mimic historical disturbances on the habitat, we can help set back succession and keep an area in the annual and perennial stages.

Disturbance to set back succession was historically completed by many different mechanisms. Indigenous populations would burn areas to aid in hunting and travel, bison would graze large areas, and natural disasters (wind, flooding, lightning fires etc.) would greatly disturb the landscape. Each these activities increased biological diversity across the landscape because succession was pushed back into earlier stages.

Species diversity is very important for any habitat type. An interspersion of different habitat types will benefit a wide array of wildlife populations. Many wildlife species utilize various stages of successional habitat at different points in their lifecycle. As communities proceed towards successional climax (forest), they may lose some of the biological diversity that was present (i.e. trees shade out prairie species, etc.). The development of land and transition to largescale agriculture has reduced the amount and diversity of habitat types available to wildlife.





When interspersion of habitat is lost, the landscape becomes fragmented, and this has a negative impact on nearly all wildlife species. Extensive areas of monocultures (i.e. corn fields, bean fields, fescue pastures, stands of bush honeysuckle or Russian/autumn olive, etc.) reduces the quality and quantity of habitat on the landscape, thereby reducing the amount of wildlife species that can be supported.

Great efforts have taken place to increase the amount of forestland in the state of Illinois. Timbered acreage is on the rise, but this is often at the loss of earlier stages of succession. Mimicking occasional disturbance that was historically typical of most North American landscapes can be very beneficial in promoting species biodiversity. Healthy grasslands in conjunction with forest lands can support a wide variety of species and provide spectacular habitat. These types of management activities also negatively impact non-native invasive species that did not evolve under such conditions.

A few species that see directly positive population results from early successional habitat include grassland birds, bobwhite quail, rabbits, whitetail deer, and many other species. Furthermore, these dense and diverse habitats also tend to be better at preventing soil erosion and improving water quality. Managing for early successional habitat in places will improve wildlife habitat while improving the environment as well.

Other Useful information is available at:

http://extension.missouri.edu/explorepdf/miscpubs/mp0907.pdf
http://extension.missouri.edu/explorepdf/agguides/wildlife/g09432.pdf
http://extension.missouri.edu/explorepdf/miscpubs/mp0903.pdf
http://extension.missouri.edu/p/G9412
http://extension.missouri.edu/main/DisplayCategory.aspx?C=82
http://bobwhite.samrose.me/download/nbci-the-comprehensive-guide-to-creating-improving-managing-bobwhite-habitat/

Conservation Mowing

Mowing has a place in managing habitat but is often used too frequently or incorrectly causing undesirable outcomes. Mowing can be used to mimic natural grazing and can help control annual weed growth when establishing native prairies, the invasion of woody stemmed plants in grasslands and can reduce the amount of standing vegetation prior to conducting a prescribed burn or herbicide treatment. Mowing is not being used as a management tool when utilized to reduce the diversity of plant species which in turn reduces the diversity of wildlife foods, nesting sites and protective cover. For example, mowing a grass field several times over the course of growing season will thicken the grass component reducing the ability of forbs and legumes to complete and remain within the grassland.

Frequent Mowing Concerns:	Conservation Mowing Uses:
• Reduced Plant Diversity	· Control of Annual Weeds
• Destruction of Nesting Sites	· Reducing Undesired Woody Plants
• Loss of Vegetative Protective Cover	· Maintaining Fire Breaks and Trails
• Soil Compaction or Degradation	· Reduces Pre-Fire/Herbicide Vegetation

For the Conservation Stewardship Program mowing as a management practice will leave a height of 6 to 15 inches to provide necessary ground cover for the wildlife. If you choose mowing as a management practice indicate how mowing is to be used in your management plan.

Timing of Vegetation Control needs to be considered .

Primary nesting and brood rearing seasons for grassland wildlife extends from April 1st through August 1st. Mowing can be conducted between August 1st and October 1st to allow plants to reach sufficient heights to provide necessary winter cover while removing woody vegetation.

Please note: Mowing and baling a grassland or pasture makes those acres ineligible for the CSP.

IN GENERAL, any type of mowing should be delayed until after August 1st.

Types of Mowing:
Noxious Weed Control - Limit mowing to only those areas that are affected and raise the height of the mow blades so that only the seed heads are removed. This can be done during native prairie establishment as well during the 1st year of the new planting.

Firebreak - Mowing keeps the vegetation short and lush, removes the build- up of thatch, and helps control the height of the flames near the edges of the burn area.

Strip Mowing - Alternate mowed and non-mowed strips across the entire field to control woody plants. There are some negative effects. Therefore, utilize strip mowing only to the degree necessary to control the woody invasion.

Trails – Trails may be mowed 2-3 times a year to facilitate access to the property to conduct other management activities, such as invasive species removal. Only enough trails may be constructed to allow for management activities to take place. Trails should not be any wider than 10 ft with surrounding native vegetation being left undisturbed. No destructive ATV use is allowed on CSP properties (i.e. a dirt bike track, etc.)

Strip Disking

After several years, pasture or lawn grasses will eventually form mats that are not beneficial to wildlife. Species such as brome, fescue, and orchard grass occasionally require some type of disturbance, or they will become a monoculture. Dense stands of the same type of grass have little wildlife benefit due to lack of diversity of plant seed for forage. These mats force wildlife to move across the top of them which results in increased predation and exposure. In order to increase biodiversity and improve early successional habitat, strip disking is a useful tool to increase plant diversity in a monoculture grass stands.

Note the decrease in plant diversity over time without disturbance in the above example.

Lack of diversity in these stands makes these areas almost like a desert to native wildlife in the area. In a couple of years, these types of grasses push everything else out. In order to allow other species to sprout, disking is done to expose bare soil and allow for germination of a variety of other plants. Increasing the diversity positively helps the wildlife populations in the area by giving the habitat a different structure and allows annual plants to produce a variety of seeds wildlife need to survive over the winters. You may also plant forb (flowering) species after disking the ground in order to enhance the biodiversity on the ground

In order to accomplish a successful disking and inter-seeding effort, landowners must 1st burn off all the thatch on the area 1st thing in the spring. Reducing thatch allows for disk blades to be able to make direct contact with the soil. Once soil is exposed and lightly turned, desired seeds may be broadcast across the area to further diversify the site. Periodic disking sets back the stand successionally, reduces wood plants, and keeps it in a grassland/prairie state. See below for a side by side example of disking/inter-seeding versus an unmanaged grassland.

Brome Field Disking/Interseeding

D/I Cool Season Grass (4/26/2011)

D/I Cool Season Grass (6/1/2011)

D/I Cool Season Grass (7/27/2011)

D/I Cool Season Grass (9/1/2011)

D/I Cool Season Grass (12/1/2011)

Prescribed Burning – NRCS Practice Code 338

Conservation Practice Standard Prescribed Burning (Code 338) (usda.gov)

IT IS THE LANDOWNER'S RESPONSIBILITY TO GET PREPARED AND CONDUCT A PRESCRIBED BURN!!! When conducting a controlled burn take all the necessary precautions, retain the necessary permits, and inform the necessary agencies including your local fire department. Pay careful attention to wind direction and speed, humidity, firebreaks, and the surrounding landscape. The landowner is responsible for all aspects of a prescribed burn.

Prescribed Burning (Practice Code 338) - Dates – Oct 1-April 30 annually
Burning will be one of the most efficient and useful management tools for wildlife management and invasive species control. Used properly, fire is a safe and economical tool, but careless burning can threaten life and property. Fire removes vegetation debris (duff) increasing bare ground, controls woody plant invasion, promotes growth of grasses/forbs (early successional habitat) that produce wildlife food, and stimulates mast and legume growth important for birds and other wildlife.

One of the primary uses of prescribed fire is to manipulate or manage vegetation for the benefit of wildlife species. The timing of the burn depends on the wildlife management objectives for the specific species. Some things to consider are:

1. Burns should be managed with consideration for wildlife needs, such as nesting and feeding cover. There should always be habitat available. Burn 1/3 or ½ of the area.
2. Fall and winter burns generally favor the forb component in mixed stands and help improve plant structure and habitat diversity.
3. Burning in spring and fall of the same year greatly reduces stands of cool season grasses, including tall fescue.
4. Fall burns are generally best for forest habitats to reduce undesirable species.

Grassland: In regard to managing early successional habitat, grassland burns are one of the most common management practices. Spring fires promote warm season grasses as well as inhibit woody encroachment (March to April). Dormant (Oct, Feb-March) fires promote forbs (flowers), so this type of fire may be better occasionally to promote the forbs in the stand. If prescribed fire is unable to be conducted, a conservation mowing management activity may be acceptable over short durations (i.e. drought, wet during burning season). Stands need to be burned periodically to rejuvenate the stand and inhibit woody plants which maintains the desired early successional habitat.

In order to safely complete prescribed burning, landowners and managers must first install and upkeep firebreaks.

Firebreak Establishment - NRCS Practice Code 394

Refer to: Conservation Practice Standard Firebreak (Code 394) (usda.gov)

Established firebreaks aid in the process of prescribed burning. These areas are maintained to give control of units on the property in order to safely conduct a prescribed burn. A good rule of thumb is that your firebreak should be 3Xs as wide as expected flame height. There are several methods in which firebreaks can be established. These are:

1. Green Firebreak
2. Disked Firebreak
3. Rake/Leaf blower firebreak
4. Wet line firebreak
5. Natural/Man-made Firebreaks (creeks, ponds, roads, ATV trails)

When preparing your property for a prescribed burn, one, two, or a combination of all should be used to ensure a safe and successful prescribed fire. Also take your time when starting a prescribed fire and ensure that your fire lines are holding and a black line is extending into your burn unit before moving to far along. Be considerate of where the smoke will be travelling. You could smoke out a major intersection or habitations if smoke management is not taken into account. Wind can also carry embers across the best fire lines. Be diligent about checking for spot fires outside of the fire lines.

Green firebreak - Green Firebreaks can be established by planting species that green up early in the year. Firebreaks should be at least 30 feet wide consisting of cool season legumes (e.g. clover and/or alfalfa). Firebreak mowing should be done to maintain the firebreaks. DO NOT bail the area (Program Reg.). Mowing Firebreaks can control woody growth, stimulate legume growth, and prevent weed invasions. ***Mow firebreaks in the late Fall before a burn.***

Disked Firebreak – Firebreaks can also be established by disking a 30 foot wide strip around the area to be burned. The bare soil will help mitigate the chance of a fire escaping to an area that is not intended to be burned. Areas with thick vegetative cover may need to be disked several times to get bare soil showing. If a large amount of thatch is still present that could burn across the break, disk the area again. Ensure there are no fuel connections across the firebreak.

Rake/Leaf Blower Firebreak – Fire lines can also be established by removing all thatch, leaves, vegetation, and all branches on top of the ground to expose bare soil. This can be done in areas where the ground cover is sparse or easy to remove (i.e. leaf litter, Ag residue). With these lines, you will start a backfire in order to get a black line established. Make sure the black line is at least 30 foot wide before setting flank/head fires.

Wet line Firebreak – A wet line firebreak is established by wetting down the ground and vegetation on the edge of the prescribed burning unit. This can be done when water is readily available for the burn crews. You do not want to run yourself short on water and then need it later.

Natural/Man-Made Firebreaks - Good fire lines can also be along barriers such as ATV trails, roads, creeks, ponds, and agricultural field (little crop residue on top). These areas are generally maintained but any debris or thatch that crosses these areas must be removed to prevent a fire from crossing them.

Green Line

Note: Dead thatch under green firebreaks may still be able to carry a flame. Maintaining breaks and using several practices in conjunction will help prevent accidents.

Wet Line

Rake/Leaf Blower Line

Disked Line

Field Road Burn Break (bottom of photo)