

HEY! What Happened to the Woods? RESTORATION WHYS and WHAT FORS....

Over the winter of 2010-11, three sites underwent major habitat restoration projects that involved a large amount of brush removal which greatly altered their appearance: Pleasant Valley, in Woodstock, Pioneer Landing in Ringwood and t Harrison Benwell in Wonder Lake.

Brush cutting projects, especially those on a large scale can be shocking when first viewed especially if a site user is used to a certain appearance at an area and has grown familiar with it over time. In evaluating the changes it is helpful to understand the process that guides how such projects are planned and implemented.

Ecological Study and Analysis

The Conservation District manages one of the largest and most comprehensive ecological databases in the state and new information is added on a monthly basis. Currently this database contains records on ecological communities, vascular plants, mammals, reptiles, amphibians, butterflies, dragonflies, fish, freshwater mussels, snails, breeding birds, fungi, soils and many other species groups and ecological features. Over 3,824 surveys containing 347,000 individual data records are contained in the ecological database covering the entire county.

Every acre of land that is not in agricultural production receives a comprehensive baseline inventory of a number of these species groups in the first full growing season after its purchase by the Conservation District. This alerts district biologists to any endangered or threatened species on the site, allows a grading of its ecological health (A through E) and identifies any immediate environmental problems such as soil erosion, gypsy moth infestations etc.

During this evaluation each acre is assigned to a unique management unit within the conservation site. This management unit number is a permanent tracking system that allows staff to document all management work, biological information and long term monitoring that will occur over decades to come on that specific site.

A comprehensive review of past land use history is undertaken to determine what ecological functions and processes have been altered on the site since settlement began. This process, known as forensic ecology, allows district staff to identify the source of some ecological problems and at the same time to become aware of any unique cultural history that should be preserved on that site.

This comprehensive gathering of knowledge allows District biologists to determine what management activities need to occur on the site to allow it to flourish not only for future generations to enjoy, but also for its own intrinsic value as a living ecosystem.

Such activities may include removal of exotic species, management of invasive weeds, restoration of original hydrology, replanting of native wildflowers, grasses and sedges, re-introduction of animal species, stream remeandering and re-forestation. Each site is unique in

its land use history, its level of ecological health and the management activities that are required to insure the long term survival of the plants and animals that call that area home.

Exotic Species

One of the most common problems associated with much of the acreage that makes up the public open space trust for McHenry County is invasive species infestations. These species can be herbaceous weeds (Canada thistle), trees and shrubs (oriental bittersweet, European buckthorn) or animals (zebra mussels, gypsy moth), which all share a common history and result in many of the same ecological consequences.

These species can reproduce and spread at phenomenal rates, often crowding out native species that must not only compete with the exotic invader, but also with its own natural insect and predator controls. As the overall health of native communities such as woodlands and prairies declines with invasive species invasions, other problems can become exacerbated. For example, healthy woods may be able to withstand an outbreak of gypsy moth infestation if they were not already weakened by invasive species problems. Native mussels that strain detritus from streams for food may find themselves covered with so many zebra mussels that they can no longer sustain themselves.

As key components of the natural community disappear, other species dependent upon them also begin to disappear. The inter-linked system of plants and animals that has taken thousands of years to develop can eventually collapse as ecological problems cascade.

Brush Removal

Many District sites possess remnants of oak woodlands, savannas and barrens. These communities, while different ecologically, all have one thing in common; oaks comprise a major component of each. At the time of settlement such communities were widespread across McHenry County, covering nearly a third of the county (over 130,000 acres). Today these oak remnants have been reduced by 89% with only 18,000 scattered in small blocks across the county.

Many of these remaining oak communities, including those preserved in district sites, have been degraded by past land uses and fifty years of increasing problems with invasive species. Principal among these species are European buckthorn, three types of Asian honey suckle, Japanese or multiflora rose, oriental bittersweet, autumn olive and Japanese barberry.

Changes to these ecosystems include decreased sunlight, subsequent reduction or elimination of oak reproduction, loss of the native ground layer plants with soil erosion, and loss of key components of the ecosystem such as native butterflies and songbirds. Even shifts in the soil Ph and chemistry can occur, brought on by the decomposition of the leaves of some exotic species. While brush clearing operations on District sites sometimes remove quick growing native species such as box elder, the exotic species mentioned earlier make up the majority of what is removed in most brush clearing projects.

Types of Brush Removal

One size does not fit all in brush clearing operations on District sites. Most clearing operations are small scale and done in house by District biologists augmented by volunteers, interns and summer workers. Such projects generally utilize hand clearing techniques with brush stacked for later burning in areas that will not impact quality portions of a site.

Larger scale infestations and those that have been in place for many decades are sometimes contracted out through competitive bid to qualified brush removal companies. Such projects typically occur in areas where the ecological quality of the site is degraded and remaining pockets of native species are scattered or non-existent. In many such areas, the only remaining component of the original ecosystem still evident is the large older oaks. Such projects utilize specialized equipment with low ground pressure that have been developed for use in forestry conditions but are cost prohibitive for the District to purchase and maintain. Following brush clearing, control prescribed fires, replanting of native species and long term monitoring are completed by staff.

Why So Much at Once? A common question many site users ask is “Why so much at once?” In fact the majority of brushes clearing projects happen at a smaller scale and over longer periods of time. The scale of a project is decided based on many factors. These can include:

What is best for the site in terms of impact? Do the site’s unique terrain, soils and ecological systems indicate that a single large contract with the site disturbances generated at one time would be better than several smaller projects with repeated disturbances to the area?

What is the most cost effective method of removing the brush? While a series of smaller brush removal projects may have a less drastic appearance, this approach may also be more costly both in terms of site impacts, user disruption and financial resources.

What would the best season for the project be? The overall impacts to a site will always be a driving force in deciding the timing of projects. Some sites, especially those with sensitive soils, can only be done on frozen ground. Other projects require warmer weather for the work to be completed. Seasonal issues such as flooding or the lack of frost can delay the completion of a project until site conditions are corrected.

What will the impacts be to closing a site during work? The inconvenience to site users is another component of the decision making process in any project. While site use is an important aspect of the any project planning, visitor safety is a priority and can result in a site being closed during a project.

Who needs to be notified of the project? The type and number of notifications that are made can vary wildly from site to site and project to project. Typical notifications include local municipalities, adjoining neighbors and members of the public through the District’s web site and sometimes neighborhood meetings. While every effort is made to notify various stakeholders it is impossible to know every individual and group that may wish to be informed about a particular project.

Will leaving larger patches of exotics on the site result in reinvasion of what was cleared? The potential for re-invasion of a site by adjoining patches of exotic species is carefully considered. Many exotics are prodigious producers of seed which is how they can overwhelm native systems so rapidly. Sometimes complete removal of exotics increases the success of native species reestablishment.

Site Conditions after Completion

Large brush removal projects can seem extremely destructive to a casual site user, especially if that user has become accustomed to a particular appearance in the past. This perspective is especially prevalent in late winter before the areas green up and in the first season following a project's completion. Several concerns are commonly expressed to the District. These include:

- Chips and cutting debris may be covering large portions of the site. Some of the material will be decomposed by fungi and micro-organisms. Typically larger brush clearing sites will undergo a prescribed burn as soon as possible after completion. The burn will remove a good portion of the chip layer and allow replanting of native species to occur more effectively.
- Everything seems to have been cut except the bigger oaks. The number of young oaks, hickories and other native trees and shrubs are so low in many degraded ecosystems that once the exotics are removed the lack of recruitment of replacements for the older trees is drastically apparent.
- The ground is bare and lifeless. This is often a very accurate observation as one of the relentless effects of exotic brush invasion is the loss of native ground covers such as grasses, sedges and wildflowers. For many of these sites reseeding the native flora is essential.
- It is too open, windy and sunny. These are also valid observations of the structural changes to wooded ecosystems after large brush clearing projects. The ecosystems of McHenry County developed under ecological forces that include frequent wildfires, ample sunlight and open conditions. Often older trees in a project area will provide clues in their growth patterns to the conditions they germinated and grew into maturity under. Note the wide spreading crowns on many of these older oaks that speak of a time when ample sunlight and rain reached the floor of the woodland.
- My old site is gone forever. The type of site an individual user prefers is a personal choice. However, before deciding that your old site can never be replaced consider becoming a committed observer of the ecological shift that is underway in your favorite conservation area. Watch for new wildflowers, grasses and sedges that you may never have noticed before. Notice the effects that enough sunlight and water can have on the health of the plant and animal life. Discover how wind moves through the trees and what role it plays for winged species like owls, hawks and butterflies.

- The animals are never going to live here again. This concern speaks to the very real appreciation county residents have for native wildlife. The good news is that not only will the wildlife already on the site respond positively to the changes but the populations and types of native wildlife using the site will increase as it regains ecological health. Healthy ecosystems produce more food for wildlife in general and for the base of the food chain that eventually sustains predators such as foxes, hawks and owls. Dead trees and snags are left during projects to continue to provide habitat for the wildlife that depends upon them.