

## **NATURAL AREAS**

The Natural Areas Program on state forests takes several approaches. The primary goals of the program are to maintain biodiversity and conditions that can be deemed natural.

"Natural" as used in this context is a very relative term. In the one sense, natural refers to being uninfluenced by humans. There is no place in the state forests that have not and will not be influenced by humans. Humans have visited and used all the land that is currently state forest for hundreds and even thousands of years. And even if physical human intervention ceases on a parcel, chemical and other interventions will occur through pollutants and other introduced agents such as exotic species and diseases. A true natural condition would be that which would occur prior to humans ever existing in North America. Recreating such a condition is an impossibility. Extinct species such as mastodons to passenger pigeons cannot be reintroduced. Disease and insect agents, such as chestnut blight and gypsy moth, have or will alter the species composition. Many non-native species are very common in the ecosystem.

A realistic version of "natural" is to recreate the community structure and retain as much of the species composition as was present at the time of European settlement. This is often the goal of organizations such as the Division of Nature Preserves and the Nature Conservancy. In this way, biodiversity is maintained by retaining remnant populations of species that occupy a very narrow ecological niche, which makes them vulnerable to catastrophic loss. The goal is to keep existing species populations viable for the future.

A third definition of natural could include all human activity. This is because of human development as a natural process through the ages. Therefore should human activity be separated from the rest of the natural world? This is a philosophical discussion that will go no further here.

State forests as a whole have considerable value as natural areas. The management system employed retains continuous forest canopy. There is minimal disturbance to the ground cover layer. There is no large, sudden conversion in species composition or canopy structure.

The Natural Areas Program consists of five parts that, when combined with overall state forest management, enhance the state forests' contribution to biodiversity and other values.

### **Natural Areas Identification**

Through the generous cooperation of the Division of Nature Preserves, all state forests have or will undergo a natural areas review. This review uses past records, aerial surveys, and uncommon or abrupt topographic features to locate unique species or communities. The result of these are either proposals for dedicated nature preserves or recommendations on management to

enhance the structure or composition of a community. Currently over half of the state forest land has been surveyed.

### **Nature Preserves**

State forests currently have thirteen dedicated nature preserves that contain over 1800 acres. A few are old preserves, but most are relatively recent. In fact, many have been dedicated out the recent review, with many more proposed for dedication. When practical, boundaries of nature preserves will follow tract or other reasonable management boundaries.

Nature preserves on state forests are under the primary management direction of the Division of Nature Preserves and the articles of dedication for the preserves. Unless prescribed by the articles of dedication or under the direction of the Division of Nature Preserves, no management activities that create disturbance will be conducted in nature preserves. Non-disturbing activities such as running/marketing property line or tract inventory can occur.

State forests, as resources allow, will assist the Division of Nature Preserves with the management of nature preserves. Many preserves require little to no management activity. Other preserves require periodic or regular management to maintain their integrity. Prescribed fire is a management tool used on many preserves that properties are likely to be requested to assist with. Control of aggressive, exotic species is another activity that properties assistance may be requested.

Recreational developments, usually trails, will be routed to avoid nature preserves as much as practical. Existing recreational development (trails) within nature preserves will, whenever practical, be moved outside the nature preserve boundaries. Fire/access roads through nature preserves will be evaluated for need. If considered needed for access beyond the nature preserve, such roads, when allowed in the articles of dedication or with agreement with the Division of Nature Preserves, can be maintained to a minimal level necessary to provide the needed access. Roads within the nature preserves that only serve the nature preserve areas and are no longer needed will be abandoned.

Properties will avoid the introduction of non-native materials and biological agents into nature preserves unless deemed absolutely necessary. Such introduction shall be with the approval of the Division of Nature Preserves or allowed in the articles of dedication. When it is necessary to introduce non-native materials or agents, the least aggressive or damaging as possible will be used. For example, if stone is needed to stabilize a roadbed, gravel of a type similar to native stone in the preserve may be used. If ground cover is needed, an annual species whose presence can easily be retaken by native species should be used.

### **Unique/Significant Areas**

A very useful aspect of the natural areas review by the Division of Nature Preserves has been the identification of areas that, while not important enough to be dedicated nature preserves, they may require special management consideration to maintain or enhance their contribution to forest communities and/or biodiversity. In addition, areas may require management consideration due to identified wildlife contributions, or geological features.

Areas of this significance will be noted in the appropriate tract file for consideration in future management decision-making. All management activities in the tract will take these significant attributes into account. When resources allow, recommended special management activities to enhance the attributes will be attempted. The most common recommended activity to this point has been prescribed burning.

### **Non-native Species Management**

The impact of introduced, non-native species and their widespread distribution truly means that no acre of land is not affected by humans. The effects of these non-native species in Indiana forests is wide ranging. The elimination of American chestnut as major component of Indiana forests by chestnut blight forever changed forest species composition and the other species dependent on it. Starlings compete with native birds for food and nesting sites. Recent research has indicated that earthworms may have changed the chemical balance and nutrient cycle of forest areas.

State forests will regularly plan activities to eliminate or control non-native species. The Division of Nature Preserves has assisted by identifying invasive threats during some natural area reviews. State forest and Division of Forestry staff have also identified species of concern. Insects of major concern include gypsy moth and Asian longhorn beetle. Grasses of concern include Kentucky 31 fescue and Asian stiltgrass. Trees of concern include paulownia and ailanthus. Shrubs of concern include multiflora rose, autumn olive, and bush honeysuckle. Herbaceous plants of concern include purple loosestrife, kudzu, and garlic mustard. These aggressive species can be controlled or eliminated with a three-part process.

The first step in non-native species control is monitoring. This is identifying and tracking what and where non-natives are present on the state forests. In some cases this will be scientific, such as trapping for gypsy moth. More often it is observational, such as property personnel noting a large population of garlic mustard in a stream drainage. This information should be noted in the appropriate tract file.

The second step in the control process is to avoid introduction of non-native species. Some species should never be planted/seeded on state forests. This includes species such as Kentucky 31 fescue, autumn olive, and ailanthus. In other situations, avoidance can be minimizing conditions that allow non-natives to spread to uninfected areas. One example would be avoid putting a trail through a population of stiltgrass, because the stiltgrass might use the trail as an avenue to spread to other areas.

The third step is direct elimination of non-native species. There are several management tools utilized. Mechanical removal of some species can be done. This has been done with purple loosestrife and garlic mustard. It has the drawback of being time consuming for the area covered, and having limited success. Prescribed fire can be used to control some non-native species. Fire may injure but not eliminate many species. Pesticides are often the favored treatment because of cost effectiveness and good success. However, non-target organisms are often affected. Biological controls from the non-native species' home ranges are increasingly important. Introduction times can be long, and there is the concern about introducing another non-native species.

Properties are encouraged to develop one project annually to control non-native species through some type of eradication or removal.

### **Section Bullet Summary**

- Division of Nature Preserves is providing a natural areas review of state forests.
- State forests will assist the Division of Nature Preserves in the management of nature preserves on state forest properties.
- State forests will identify unique/significant areas for special management consideration.
- Old Forest Areas will be identified and managed to simulate, over time, conditions similar to old growth forests.
- State forest properties will work to control non-native, invasive species.