Woodlands

What is the best way to achieve a mixed-native-species, mature forest in the least amount of time? Harvey Starks Upper Arb Arboretum from the '30s is a successful example of one relatively fast-agm process, but the loss of some species (especially American elm, and probably new ash) and the introduction of escape species (especially buckthorn) have changed the mix in 60 years.

The Arboretum is a managed natural area. In order to create and maintain the kind of landscape we want, we use various techniques, and will continue to use them indefinitely.

Five Pulse European settlement, periodic fire (often set by Native Americans) controlled woodsy plants, and encouraged the deep-rooted prairie. Periodically controlled burns in prairie, savanna, and forest areas mimic this process.

Manual removal: Buckthorn, honeysuckle, and wild parsnip are being removed from the Arboretum by student workers, plant by plant.

Herbicide: Some non-native species (notably buckthorn) will grow back indefinitely from roots. Herbicide prevents these plants from returning. We are careful to minimize efforts on the surrounding ecosystem.

Pine plantations

Pine plantations are usually in the north of the Arboretum near the pond and prairie land. The trees are from 75 to 100 years old, are mature, red, and are very few in the forest canopy. The rest of the native and deciduous tree canopy is too tall for any non-native tree species to grow.

Seeding

Seeding is the practice of planting seeds in open fields. But because of deer and pole bawing, and the need for some species to grow in the shade of pioneer species, early attempts like Earth Day Field and Student Field failed. There was very high, early mortality.

If seeding is planned to begin with series (pioneers), a blend of species (early successional patterns are more closely followed). It is important to protect trees from deer browsing until they are tall enough to be out of reach.

The prairie in a field will eventually become shaded out and replaced by understory.

Other strategies have been tried with varying success.

Natural succession: Given time, seeds from surrounding woods will spread and take root. This seems to work better in the flatwoods, where fast-growing cattails and willows have a good chance competing with aggressive buckthorn and other escapes, which will have been controlled.

Some grasses (notably red canary grass) can tolerate weed seeds, making the process even slower.

Seeding

Tree seeds when in planted fields have had good success for two, but the plots where this has been tried are still too young to know how they will mature.

Wildfire application: Species naturally spread, or well-mixed floodplains.

How will browsing affect the dense understory?

Oak Savanna

Oak savanna is an important part of the treeless zone. This is less than the number of prairie needed to fully engage in herd behavior, and to have runoff and develop a generic diversity.

Well-defined, strong fences and can use effective management can help humans, both of which are important in the welcome restoration techniques we measure in the self and early restore native wildlife.

At European settlement, the area east of the Cannon was a patchwork of open prairie and savanna, loose groups of fire-resistant bison, and rocky outcrops, and prairie plants that require drier shade. Some of the prairie species are adapted to fire. Their deep roots help them to survive drought and build a thick organic soil layer that captures carbon. This system supports a richer animal diversity as well. Because of animal plowing, new ones allow greater soil erosion and result in a net loss of soil nutrients, requiring fertilizers. Our goal is a prairie that requires only minimum inputs to maintain quality, not where trees and shrubs overlap. The Arb now hosts endangered stands of prairie, and the Arboretum plants to maintain the self and restore native wildlife.

Paved trail

Paved road

Wide unpaved trail

Rail Line

Paved trail

Rail Line

Walking trail

Stadium

Highway

River—lower—because it connects the two long-standing floodplains of the Cannon River.

Cannon River

The Cannon River widens from a narrow valley to wetland. It was created in the 1920s under the dam—lower, because it connects the two long-standing floodplains of the Cannon River.

Vegetation information derived from aerial surveys, unless noted. Thanks to Mary Sartor, the Carlson College Archives, the Northfield Historical Society, and the office of the treasurer for some maps. Thanks to Mr. Tom Vantyler (Carlson College GIS), the State of Minnesota, Dakota County, and Rice County for maps and data. Elevation contours derived from Mr. Tom Vantyler (Carlson College GIS). The Cannon River is a tributary of the Cannon River.

Credits

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A tale of two mills

The land the early 18th-century Dakota area was opened to homesteading in the fall of 1854. By December 1855, New Englander John North had purchased and laid out the town site of Northfield, and built a flour and grist mill on the site that is now Bridge Creek Bridge. In 1968, the town, now owned by the Ames family, produced some of the finest flour in the country using the techniques developed there.

In 1873, members of the newly formed Grange, a cooperative of farmers united for the public good, purchased what is now the Arboretum. Originally little more than a clearing in the forest, the land was a meadow in the late 1800s, the early 1900s, and the 1950s, when it was used as a pasture. It was not until the 1960s that the land was officially designated as a nature preserve.

In 1968, the Arboretum was established as a nature preserve and a public park. It is now owned by the University of Minnesota, which oversees its management. The Arboretum is open to the public year-round and provides a variety of educational programs and activities for all ages.

In the late 1800s, the college moved to a new location on the east side of Spring Creek. The old college campus, which is now the site of the Arboretum, was later redeveloped as a residential area.

In 1972, the college completed the construction of a new campus building, which houses the college's administrative offices and classrooms. The building is designed to be as energy-efficient as possible, and it uses solar panels to generate electricity.

The Arboretum opened in 1988, and it is now open to the public year-round. The Arboretum covers over 300 acres and includes a nature center, a visitors center, and a variety of trails and gardens. It is a popular destination for visitors from all over the United States and beyond.

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