



## VEGETATION MANAGEMENT GUIDELINE

Honey Locust (*Gleditsia triacanthos* L.)

### SPECIES CHARACTER

#### DESCRIPTION

Honey locust is a medium-sized deciduous tree, reaching an average height of 80 feet (24 m), with 140 feet (42 m) tall being the maximum recorded height. Leaves are alternate, pinnately or bipinnately compound, with numerous paired, oblong leaflets that taper to a rounded or slightly pointed tip. Leaves range from 4 to 8 inches long (10-20 cm), with leaflets 3/8 to 1 1/4 inches (1.5-3 cm) in length. Honey locusts contain a surfeit of long, stout spines especially concentrated on the trunk and lower 1/2 of the tree. Spines on both the twigs and the trunk are often branched and can reach lengths of up to 10 inches (25 cm). On the trunk, the spines will often form dense clusters. Bark is lighter gray in younger specimens, turning darker brown to black as the tree matures. Bark can be up to 3/4 of an inch thick (2 cm), with fissures that form long plates which are slightly curled up along the sides of each plate. Honey locust occasionally sprouts from the roots.

The honey locust is a member of the Caesalpiniaceae family. The tree's greenish-yellow flowers are bell-shaped, with 5 petals; flowers are located in short, narrow clusters at leaf bases. Flowering occurs in late spring. Fruit pods are flat, slightly curved in an arc and sometimes moderately twisted, chocolate to dark brown, from 6 to 16 inches long (15-40 cm). The pod contains numerous brown, flattened, bean-like seeds surrounded by thick pulp. The pods contain a sweetish, gummy substance from which the name honey locust is derived.

#### SIMILAR SPECIES

Honey locust is separated from the other Illinois *Gleditsia*, water locust (*G. aquatica*) by several characteristics and by range. Water locust is primarily a southern Illinois swamp species, extending as far north as Calhoun and Lawrence Counties. Where the two species overlap, water locust can be distinguished by its much smaller, oval fruit pod, which reaches a maximum 2 inches (5cm), generally contains only one seed, and contains no pulp. The bark of water locust also differs from honey locust, by being more shallowly furrowed. Black locust (*Robinia pseudoacacia* L.) differs from honey locust by having *only* pinnately compound leaves, the presence of paired spines on the twigs only (at leaf nodes), and fruit pods up to 4 inches long (10 cm) that are flat and not twisted or curved. Management strategies are quite different for black locust so identification is important. Honey locust should be accurately identified before attempting any control measures. If identification of the species is in doubt, the plant's identity should be confirmed by a knowledgeable individual and/or by consulting appropriate books.



## DISTRIBUTION

Honey locust is native from southern Ontario south to northern Florida, west to mid-Texas, and north to South Dakota. Honey locust is found in every county of Illinois, though less commonly in the northern part of the state. Although it is a native Illinois species, it often invades disturbed areas.

## HABITAT

Honey locust trees are able to tolerate a wide range of conditions in open lands, but they particularly favor mesic sites. Honey locust is found in forested communities, but because it is shade intolerant, it is not an important component of most forests. An aggressive colonizer of successional fields and abandoned pastures, honey locust is often found along crop field fencerows and in unfarmed draws and ravines. Honey locust is less likely to be found in open or forested communities that are periodically burned.

## LIFE HISTORY

Honey locust is a rapid-growing, moderately long-lived tree. Seedling trees can reach a height of 2-3 feet (.5-1m) in the first growing season. This tree spreads by seeds, which need to be scarified for the seed to germinate. Average lifespan is 125 years.

## EFFECT UPON NATURAL AREAS

This aggressive tree may readily invade open natural areas such as prairies that are not burned, especially if the community structure has been altered by a human-made disturbance such as grazing. Honey locust seedlings can, in time, form monoculture groves and ultimately shade understory species. In upland and floodplain forests disturbed by logging or grazing, honey locust can sometimes obtain a foothold and shade out more desirable species. Since honey locust may form dense, shady thickets, it can prevent recruitment of desirable native species, such as the various oaks, that need adequate understory sunlight.

## CURRENT STATUS

Honey locust is a native species and is not categorized as an exotic weed under the Illinois Exotic Weed Act (525 ILCS 10).

## **CONTROL RECOMMENDATIONS**

The intent of this management guideline is not to prescribe methods for completely eliminating honey locust from ecosystems where it naturally occurs, but rather to recommend measures for controlling the rapid spread of honey locust in communities to preserve rare species or restore species diversity or when its presence is inappropriate (ie upland prairies).

## RECOMMENDED PRACTICES IN HIGH-QUALITY NATURAL COMMUNITIES

### *Initial effort in areas of heavy and light infestation*

Efforts to control honey locust infestations have included the following methods: mowing, prescribed burning, cutting, girdling, and herbicide treatment. Close, repeated

mowing throughout the growing season may kill locust seedlings. However, while mowing appears to initially control the growth of honey locust seedlings, cutting and girdling followed by herbicide spraying or a combination of prescribed burns and herbicide spraying appears to be the best way to eradicate this tree.

In fire-adapted communities, successive spring and/or fall prescribed burns can reduce honey locust seedling and sapling coverage. The bark of the honey locust is very thin, making it susceptible to fire injury. While honey locust will re-sprout after a fire, repeated fires over several years appear to reduce the number of seedlings and saplings. Repeated burning of larger honey locust will not kill the tree but will injure it, often leaving it susceptible to insect injury. Before commencing any prescribed burns, open burning permits must be obtained from the Illinois Environmental Protection Agency and often the appropriate local agencies, too. Burns should be administered by persons trained or experienced in conducting prescribed burns, and proper safety precautions should be followed.

A combination of cutting, girdling, and herbicide application will provide the most immediate and efficient control of honey locust. Cutting of sapling trees and girdling or cutting larger trees needs to be accompanied by herbicide application to the cut surfaces. Glyphosate herbicide (trade name Roundup) can be used on cut surfaces. A 25% active ingredient solution in water has proven effective. The herbicide should be applied by spraying cut surfaces with a hand sprayer or by using a sponge type applicator to wipe the stump or girdled area. Herbicide application should occur immediately after cutting to obtain the best results. Herbicide treatment appears to be most effective in late summer and fall, but also has proven satisfactory in the dormant season. **Do not spray so heavily that herbicide drips off the target species.** Roundup is a non-selective herbicide and will kill any plant it comes in contact with. Because of potential damage to surrounding vegetation, foliar application of Roundup to honey locust seedlings is not recommended in high quality natural areas. While it is labor intensive, seedlings will need to be cut and treated the same as saplings and mature trees, if burning does not provide adequate control.

Garlon 3A and Tahoe 3A, amine formulations of triclopyr, is also a very effective herbicide that controls honey locust. They may be applied to cut surfaces as a 22.0% active ingredient solution mixed with water, or undiluted 44% active ingredient. As with glyphosate, they should be applied immediately after cutting. Garlon 3A and Tahoe 3A may be more effective than glyphosate for dormant season applications. **Do not spray so heavily that herbicide drips off the target species.** They will kill non-target broadleaf plants it comes in contact with. Preferred season for using them in high quality natural areas is in the dormant season to reduce potential drift injury.

Basal bark treatment of honey locust with a mixture of 10.0% active ingredient Garlon 4 or Tahoe 4E, ester formulations of triclopyr, in plant-based or mineral carrier oil has proven highly effective in treating honey locust. Basal bark herbicide application can be done anytime during the year, but dormant season application reduces the potential for drift injury. **Do not spray so heavily that herbicide drips off the target species.** Avoid using Garlon 4 or Tahoe 4E if snow, ice, or water is present on the ground. Spray the basal part of the tree, up to 2 feet above the ground, thoroughly wetting all the bark, including any ground sprouts.

Both glyphosate and triclopyr should be applied while backing away from the

treated stumps to avoid walking through the wet herbicide. By law, herbicides only may be applied according to label instructions and by licensed herbicide applicators or operators when working on public properties.

*Maintenance control*

In fire-adapted communities, periodic spring or fall burning should control or eliminate this species.

RECOMMENDED PRACTICES IN BUFFER AND SEVERELY DISTURBED SITES

*Initial effort in areas of heavy and light infestation*

Same as above, plus additional practices below:

A 1% active ingredient solution of glyphosate mixed with water and applied as a spray to the foliage of seedlings will effectively eradicate honey locust. Roundup should be applied carefully by hand sprayer, and spray coverage should be uniform and complete. **Do not spray so heavily that herbicide drips off the target species.**

Roundup is a non-selective herbicide and will kill any plant it comes in contact with.

Glyphosate should be applied while backing away from the treated area to avoid walking through the wet herbicide. By law, herbicides only may be applied according to label instructions and by licensed herbicide applicators or operators when working on public properties.

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In fire-adapted communities, periodic spring or fall burning should control or eliminate this species.

**FAILED OR INEFFECTIVE PRACTICES**

Mowing or cutting honey locust seedlings will temporarily stunt them, but they will quickly re-sprout and grow more vigorously than before.

Burning young seedlings or saplings may result in some re-sprouting, requiring successive burns over several years to eradicate the young trees. Burning alone will not necessarily kill mature honey locust, although it may injure the tree enough to allow for later mortality from insects. Burning may need to be accompanied by cutting and herbicide treatment of larger trees.

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### **PERSONAL COMMUNICATIONS**

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