

# Big Shellbark Hickory



Carya laciniosa leaves



Photo credits: David Werier

**Scientific Name** *Carya laciniosa*  
(Michx. f.) G. Don

**Family Name** Juglandaceae  
Walnut Family

## Did you know?

The edible nuts of the big shellbark hickory are the largest of any hickory. They are valuable food for many wild mammals, ducks, quail and turkeys. The nuts can be collected and eaten raw or used in desserts.

## Summary

**Protection** Threatened in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 6 to fewer than 20 extant sites, or 2) 1,000 to fewer than 3,000 individuals, or 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ½ minute topographical maps, or 4) listed as threatened by U.S. Department of Interior.

**Rarity** G5, S2

A global rarity rank of G5 means: This species is demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

A state rarity rank of S2 means: This plant is threatened/imperiled in New York because of rarity (typically 6-20 populations or few remaining individuals) or is vulnerable to extirpation from New York due to biological factors.

## Conservation Status in New York

There are 14 known populations and seven historical populations. More survey work is needed to determine how many of these historical populations are still present. The populations range in size from a few trees up to 500+ trees. This tree is at its eastern and northern range limits in New York. It very likely has always been an uncommon member of the New York flora.

## Short-term Trends

Six new occurrences have been found in the last 20 years and six of the 12 historical records have been relocated.

## Long-term Trends

The same number of occurrences are presently known as were known from historical records although some large stands of the tree were probably reduced in recent history.

# Conservation and Management

## Threats

As a floodplain tree, some populations were likely lost or severely reduced as these floodplains were converted to agricultural lands or subjected to permanent flooding through dam creations. Today, this is not as much of a threat. Some of the larger trees may be subject to timber activities, but selective cutting should allow young individuals to remain and maintain species recruitment. Dense coverage of aggressive non-native plants within the floodplain could limit recruitment.

## Conservation Strategies and Management Practices

A forest buffer should be provided along the floodplains where these trees occur. Natural flooding regimes should be maintained.

## Research Needs

There are no known research needs at this time.

# Habitat

A tree typically found in the rich alluvium of floodplains, but also in rich mesic soil along riverbanks and marshes. In some areas it can form pure stands, but usually is mixed with other floodplain species (New York Natural Heritage Program 2005). Moist, rich bottomlands and floodplains (Rhoads and Block 2000). Rich bottomlands, along creeks, and in open cedar glades (Flora of North America 1997). Flood plains (Gleason and Cronquist 1991). Riverbanks and rich floodplain woods (Voss 1985). Rich woods and bottoms (Fernald 1970).

## Associated Ecological Communities

### **Beech-maple Mesic Forest**

A hardwood forest with sugar maple and American beech codominant. This is a broadly defined community type with several variants. These forests occur on moist, well-drained, usually acid soils. Common associates are yellow birch, white ash, hop hornbeam, and red maple.

### **Floodplain Forest**

A hardwood forest that occurs on mineral soils on low terraces of river floodplains and river deltas. These sites are characterized by their flood regime; low areas are annually flooded in spring, and high areas are flooded irregularly.

## Silver Maple-ash Swamp

A hardwood basin swamp that typically occurs in poorly-drained depressions or along the borders of large lakes, and less frequently in poorly drained soils along rivers. These sites are characterized by uniformly wet conditions with minimal seasonal fluctuations in water levels. The dominant trees are usually silver maple and green ash.

### Associated Species

Black Maple (*Acer nigrum*)  
Red Maple (*Acer rubrum* var. *rubrum*)  
Silver Maple (*Acer saccharinum*)  
Freeman Maple (*Acer x freemanii*)  
Bitternut Hickory (*Carya cordiformis*)  
Canada Horse-balm (*Collinsonia canadensis*)  
Yellow Trout-lily (*Erythronium americanum*)  
*Eupatorium rugosum*  
American Beech (*Fagus grandifolia*)  
Green Ash (*Fraxinus pennsylvanica*)  
Spicebush (*Lindera benzoin*)  
Fringed Loosestrife (*Lysimachia ciliata*)  
Ostrich Fern (*Matteuccia struthiopteris*)  
Sensitive Fern (*Onoclea sensibilis*)  
Virginia Creeper (*Parthenocissus quinquefolia*)  
Swamp White Oak (*Quercus bicolor*)  
Burr Oak (*Quercus macrocarpa*)  
Red Oak (*Quercus rubra*)  
American Bladdernut (*Staphylea trifolia*)  
American Basswood (*Tilia americana* var. *americana*)  
Slippery Elm (*Ulmus rubra*)

## Identification Comments

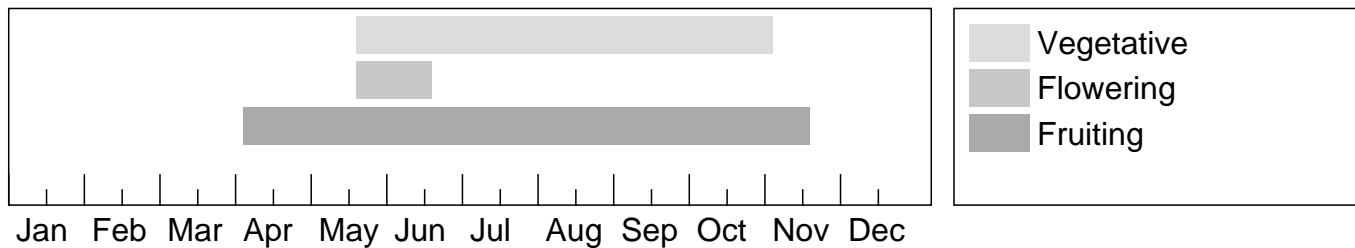
Big shellbark hickory can grow to be a large tree more than 100 feet tall. The trunk is usually straight and free of branches in the lower half. The crown is oblong to rounded. The bark is light to dark gray and peels off in long shaggy strips like shagbark hickory. The twigs are stout, orange-brown, and have large, dark brown, hairy, winter buds that turn yellow in the spring. The leaves are alternate and compound with seven leaflets but sometimes have as few as five or up to nine leaflets. The three leaflets at the end are larger than the ones below. The edges of the leaves are toothed and without hairs at the tip of the teeth. The male flowers are on long, stalked, dangling catkins in clusters of three. There are 2-5 female flowers on short stalks at the ends of the new branches. These flowers produce the large, rounded, brownish yellow fruits up to 2 1/4 inches in diameter which are usually flattened at the top. The husk easily splits open to reveal a hard, round, flattened nut that is pointed at both ends and up to 2 inches long. The shell is very hard and thick and the kernel is sweet.

## Best Life Stage for Identifying This Species

The key to identifying this species is by collecting the nuts. There should be old nuts on the ground throughout the year. A habitat description will also be very helpful.

## The Best Time to See

This tree is obviously visible year-round, but the leaves begin to emerge mid-May and persist until mid-fall. The flowers appear mid-May to early June and fruits develop shortly afterward. Mature fruit are probably not present until early August, but these persist on the trees until a few hard frosts. Fruit from previous years will likely be scattered on the ground and located just below the leaf litter. Surveys may be conducted at any point during the growing season.



The time of year you would expect to find Big Shellbark Hickory in New York.

## Similar Species

Most hickory trees have nuts that range in size from 1-3 cm, compared to the 3-6 cm size found on big shellbark hickory. Many of the other New York hickories are more of an upland tree. You might encounter *Carya ovata* and *Carya cordiformis* on a floodplain but only *Carya ovata* has shaggy bark. *Carya cordiformis* has thin flat bark with fissures and a distinctive sulfur bud. Its nuts are thin shelled and bitter. *Carya ovata* has 5-7 leaflets that are glabrous underneath or only with a few scattered hairs. The margins have numerous hairs however. Its nuts are thin shelled and sweet. *Carya tomentosa* also has large buds and 7-9 leaflets, but it is typically restricted to upland sites, has a more rounded fruit, and the nuts are smaller (1.5-3 cm). It also lacks shaggy bark.

## Taxonomy

Kingdom Plantae

└ Phylum Anthophyta

└ Class Dicots (Dicotyledoneae)

└ Order Juglandales

└ Family Juglandaceae (Walnut Family)

## Additional Common Names

Big Shellbark  
Kingnut Hickory  
Shellbark Hickory

## Synonyms

*Hicoria laciniosa* ((Michx. f.) Sarg.)  
*Juglans laciniosa* (F. Michaux)

## Additional Resources

### Links

#### Virginia Tech Fact Sheet

<http://www.cnr.vt.edu/dendro/dendrology/syllabus/factsheet.cfm?ID=450>

#### Flora of North America

[http://efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=233500318](http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500318)

#### New York Flora Atlas

<http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=1632>

#### USDA Plants Database

<http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=CARYA+LACINIOSA>

#### NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=CARYA+LACINIOSA>

#### Google Images

<http://images.google.com/images?q=CARYA+LACINIOSA>

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