

Cork Elm



Ulmus thomasii (note new growth in foreground, older corky twigs in back).



Photo credits: Julie A. Lundgren

Scientific Name *Ulmus thomasii*
Sarg.

Family Name Ulmaceae
Elm Family

Did you know?

Ulmus thomasii is known as "Cork Elm" for the distinctive corky ridges on its twigs and branches. It has the hardest and heaviest wood of the elm species, and is desirable for use in furniture, tools, and fence posts. Another common name, "Rock Elm", may refer to the hardness of the wood or to its preferences for rocky ridgetop habitats (Little 1979).

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, S2S3

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 S2S3 means: Imperiled or Vulnerable in New York - Very vulnerable to disappearing from New York, or vulnerable to becoming imperiled in New York, due to rarity or other factors; typically 6 to 80 populations or locations in New York, few individuals, restricted range, few remaining acres (or miles of stream), and/or recent and widespread declines. More information is needed to assign a single conservation status.

Conservation Status in New York

There are at least 15 existing sites, and about 50 historical sites, mostly known from the 1930s and before. Like our other elm species, *Ulmus thomasii* is threatened by Dutch Elm Disease.

Short-term Trends

In recent years about 10 new populations have been discovered.

Long-term Trends

The long-term trend for this species is unknown, though it apparently has persisted in its limited geographical range in the state.

Conservation and Management

Threats

Dutch Elm disease is a threat to populations of Cork Elm. Larger trees may also be threatened by logging.

Conservation Strategies and Management Practices

Care should be taken to avoid cutting the species in logging operations.

Habitat

In New York, Cork Elm is most often found at dry sites with shallow soils over limestone bedrock, often on ridges or exposed ledges. It may grow with northern hardwood species oak woodlands and forest edges, or in pastures and savannahs (New York Natural Heritage Program 2008). Rocky slopes, limestone outcrops, rich woods, flood plains, stream banks (Flora of North America 1997). Rich upland woods (Gleason and Cronquist 1991). Rich woods and calcareous uplands (Fernald 1970).

Associated Ecological Communities

Alvar Woodland

A subset of the limestone woodland community restricted to the alvar region in Jefferson County, New York.

Calcareous Pavement Barrens

A savanna community that occurs on nearly level outcrops of calcareous bedrock (limestone or dolomite). The community consists of a mosaic of shrub-savanna, grass-savanna, and rock outcrop vegetation.

Limestone Woodland

A woodland that occurs on shallow soils over limestone bedrock in non-alvar settings, and usually includes numerous rock outcrops. There are usually several codominant trees, although one species may become dominant in any one stand.

Other Probable Associated Communities

Appalachian oak-hickory forest
Calcareous red cedar barrens
Calcareous talus slope woodland
Maple-basswood rich mesic forest

Northern white cedar rocky summit
Red cedar rocky summit
Successional red cedar woodland

Associated Species

Sugar Maple (*Acer saccharum*)
Walking-fern Spleenwort (*Asplenium rhizophyllum*)
Maidenhair Spleenwort (*Asplenium trichomanes*)
Back's Sedge (*Carex backii*)
Hitchcock's Sedge (*Carex hitchcockiana*)
Willdenow's Sedge (*Carex willdenowii*)
Bitternut Hickory (*Carya cordiformis*)
Pink Corydalis (*Corydalis sempervirens*)
Beaked Hazelnut (*Corylus cornuta ssp. cornuta*)
Wavy Hair Grass (*Deschampsia flexuosa*)
Marginal Wood Fern (*Dryopteris marginalis*)
White Ash (*Fraxinus americana*)
Herb-robert (*Geranium robertianum*)
Hepatica acutiloba
Butternut (*Juglans cinerea*)
Red Cedar (*Juniperus virginiana*)
Wood Nettle (*Laportea canadensis*)
Hophornbeam (*Ostrya virginiana*)
Wild Blue Phlox (*Phlox divaricata*)
Eastern White Pine (*Pinus strobus*)
Burr Oak (*Quercus macrocarpa*)
Chinkapin Oak (*Quercus muhlenbergii*)
Littleleaf Buttercup (*Ranunculus abortivus*)
Bluestem Goldenrod (*Solidago caesia*)
American Bladdernut (*Staphylea trifolia*)
White Basswood (*Tilia americana*)
Eastern Poison Ivy (*Toxicodendron radicans*)
Eastern Hemlock (*Tsuga canadensis*)
American Elm (*Ulmus americana*)
Northern Prickly-ash (*Zanthoxylum americanum*)

Identification Comments

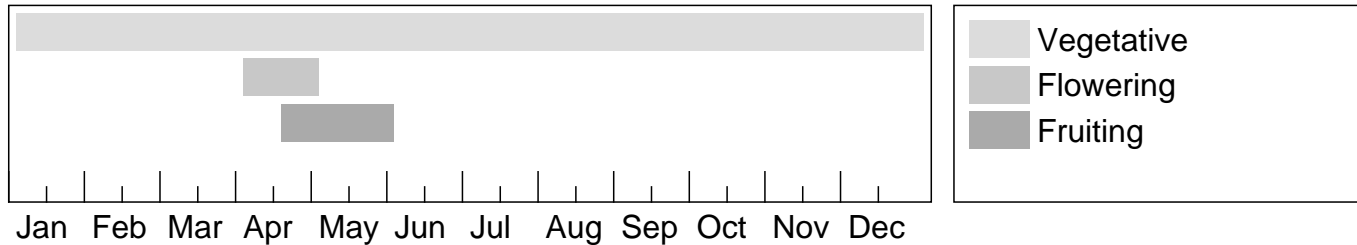
Ulmus thomasii is a medium-sized tree, commonly reaching up to 70 to 80 feet in height, and occasionally up to 100 feet (Burns and Honkala 1990), and may live for up to 300 years. It has a strongly upright form and a narrow crown, markedly different from the spreading shape of American Elm (*Ulmus americana*). The bark of the trunk is furrowed with flattened, spongy ridges, similar to that of American elm. Young twigs are covered in short hairs, and have reddish buds much like those of American Elm, but twigs a year or more old become covered in the distinctive corky ridges that give the plant its name. The leaves are alternate, with doubly-toothed margins and asymmetrical bases, and are smooth to only slightly pubescent. They also tend to be somewhat shiny and papery in feel, unlike those of American Elm or Slippery Elm. The flowers are small and lack petals, occur in racemes up to 4 cm long and appear in early spring before the leaves. The fruit are flattened, round samaras, notched at the top, and covered with soft hairs.

Best Life Stage for Identifying This Species

Mature Cork Elm can be identified at any time of year.

The Best Time to See

This woody plant may be identified year-round using the very unique and characteristic corky bark. Fruits may be present late April through May.



The time of year you would expect to find Cork Elm in New York.

Similar Species

Ulmus thomasii is the only elm species native to New York which has corky wings on the older twigs and branches. Not every twig develops the corky wings, however, so it may be necessary to look at several. The other two common elm species in New York, *Ulmus americana* and *U. rubra*, also both have smooth fruit, more pubescent, softer leaves (unlike Cork Elm's papery leaves), and are not typically found on the dry, limestone ridges and outcrops favored by *Ulmus thomasii*.

Cork Elm is very similar to *Ulmus alata*, a southern species which in New York is known only from cultivation. *Ulmus alata* has smaller leaves, the largest 4-7 cm long, and both young and old branches may have corky bark.

Taxonomy

Kingdom Plantae

└ Phylum Anthophyta

└ Class Dicots (Dicotyledoneae)

└ Order Urticales

└ Family Ulmaceae (Elm Family)

Additional Common Names

Rock Elm

Winged Elm

Additional Resources

Links

USDA Forest Service. Silvics of North America. Agriculture Handbook 654.

http://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/ulmus/thomasii.htm

Virginia Tech Department of Forestry

<http://www.cnr.vt.edu/dendro/dendrology/syllabus/factsheet.cfm?ID=135>

Wisconsin Department of Natural Resources

<http://www.dnr.state.wi.us/forestry/TreeID/TreePgs/ulmusthomasii.htm>

NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=ULMUS+THOMASII>

USDA Plants Database

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

Google Images

<http://images.google.com/images?q=ULMUS+THOMASII>

References

- Barnes, B. V. and W. H. Wagner, Jr. 1981. Michigan trees: a guide to the trees of Michigan and the Great Lakes region. Ann Arbor: University of Michigan Press. 384 p.
- Burns, R. M., and B. H. Honkala, eds. 1990. Silvics of North America, vol. 2: Hardwoods. U.S. Department of Agriculture, Agriculture Handbook 654, Washington, DC. Accessed 2004.
- Edinger, Gregory J., D.J. Evans, Shane Gebauer, Timothy G. Howard, David M. Hunt, and Adele M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation. Albany, NY. 136 pp.
- Fernald, M.L. 1950. Gray's manual of botany. 8th edition. D. Van Nostrand, New York. 1632 pp.
- Gleason, Henry A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx, New York. 910 pp.
- Holmgren, Noel. 1998. The Illustrated Companion to Gleason and Cronquist's Manual. Illustrations of the Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx, New York.
- Keys, Jr., J.; Carpenter, C.; Hooks, S.; Koenig, F.; McNab, W.H.; Russell, W.; Smith, M.L. 1995. Ecological units of the eastern United States - first approximation (cd-rom), Atlanta, GA: U.S. Department of Agriculture, Forest Service. GIS coverage in ARC/INFO format, selected imagery, and map unit tables.
- Little, E.L., Jr. 1979. Checklist of United States trees (native and naturalized). Agriculture Handbook No. 541. U.S. Forest Service, Washington, D.C. 375 pp.
- NatureServe. 2005. NatureServe Central Databases. Arlington, Virginia. USA
- New York Natural Heritage Program. 2010. Biotics database. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY.
- Weldy, T. and D. Werier. 2010. New York flora atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research <http://www.fccdr.usf.edu/>. University of South Florida <http://www.usf.edu/>]. New York Flora Association <http://www.nyflora.org/>, Albany, New York

Weldy, Troy W. and David Werier. 2005. New York Flora Atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research. University of South Florida]. New York Flora Association, Albany, NY. Available on the web at (<http://atlas.nyflora.org/>).

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