

NAME OF SPECIES: <i>Quercus acutissima</i> Carruthers (1)	
Synonyms:	
Common Name: Sawtooth oak (1)	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
	2. <u>Abundance</u> : NA
	3. <u>Geographic Range</u> : NA
	4. <u>Habitat Invaded</u> : NA Disturbed Areas <input type="checkbox"/> Undisturbed Areas <input type="checkbox"/>
	5. <u>Historical Status and Rate of Spread in Wisconsin</u> : NA
	6. <u>Proportion of potential range occupied</u> :
II. Invasive in Similar Climate Zones	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>Where (include trends)</u> : Introduced into the eastern United States around 1920. The range of adaptation extends from Northern Florida west to eastern Texas and Oklahoma, northward through Missouri to New York and into southern New England (3). Planted throughout eastern and southern US. As of 2004, vouchered as naturalized in 7 states, including MO and PA. (7)
III. Invasive in Similar Habitat Types	1. Upland <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Dune <input type="checkbox"/> Prairie <input type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input type="checkbox"/> Grassland <input checked="" type="checkbox"/> Bog <input type="checkbox"/> Fen <input type="checkbox"/> Swamp <input type="checkbox"/> Marsh <input type="checkbox"/> Lake <input type="checkbox"/> Stream <input type="checkbox"/> Other: woodland edges
IV. Habitat Effected	1. <u>Soil types favored or tolerated</u> : Sawtooth oak will grow in soils from sandy loam to clay loam, however, the best performance is achieved in deep, well-drained soils. It can also be grown on reclaimed surface mined land where favorable moisture conditions are present and pH is above 5.0. Seedlings do not do well in poorly drained soils or in areas subject to flooding. (3)
	2. <u>Conservation significance of threatened habitats</u> :
V. Native Habitat	1. <u>List countries and native habitat types</u> : Found in Asia from China; Japan; Korea; Bhutan; northern India; Nepal; Cambodia; Myanmar; northern Thailand; Vietnam (2).
VI. Legal Classification	1. <u>Listed by government entities?</u>
	2. <u>Illegal to sell?</u> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Notes:
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. <u>Type of plant</u> : Annual <input type="checkbox"/> Biennial <input type="checkbox"/> Monocarpic Perennial <input type="checkbox"/> Herbaceous Perennial <input type="checkbox"/> Vine <input type="checkbox"/> Shrub <input type="checkbox"/> Tree <input checked="" type="checkbox"/>
	2. <u>Time to Maturity</u> : Early maturity - produces acorns at about 7 years (6).
	3. <u>Length of Seed Viability</u> :
	4. <u>Methods of Reproduction</u> : Asexual <input type="checkbox"/> Sexual <input checked="" type="checkbox"/> Notes:
	5. <u>Hybridization potential</u> : There are concerns about possible hybridization with native oaks (6). This may be unlikely as it is in a

	different "sect" of the genus from the native oaks and hybridization between the sects is unlikely. (7)
II. Climate	1. <u>Climate restrictions</u> : Hardy in Zones 5-9. (5) May not be hardy in northern Midwest (6). Far less hardy as a seedling (9). 2. <u>Effects of potential climate change</u> : Potential for gradual northern migration.
III. Dispersal Potential	1. <u>Pathways - Please check all that apply</u> : <u>Unintentional</u> : Bird <input checked="" type="checkbox"/> Animal <input checked="" type="checkbox"/> Vehicles/Human <input type="checkbox"/> Wind <input type="checkbox"/> Water <input type="checkbox"/> Other: gravity <u>Intentional</u> : Ornamental <input checked="" type="checkbox"/> Forage/Erosion control <input checked="" type="checkbox"/> Medicine/Food: <input type="checkbox"/> Other: Wildlife forage, windbreaks, street trees. Recommended by a number of state forestry/conservation organizations (1). 2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control</u> : Rapid growth, prolific acorn producer, early maturity. (from the fact sheets listed in (1). Seedlings tend to germinate only in close proximity to the parent tree. (7)
IV. Ability to go Undetected	1. HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW <input checked="" type="checkbox"/>
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. <u>Presence of Natural Enemies</u> : Very resistant to insect damage (7) 2. <u>Competition with native species</u> : 3. Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) <input type="checkbox"/> MEDIUM (4-6 yrs) <input type="checkbox"/> LOW (7-10 yrs) <input checked="" type="checkbox"/> Notes: As it has only been planted in northern regions for a short time, it is uncertain what the rate of spread will be.
II. Environmental Effects	1. <u>Alteration of ecosystem/community composition?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> Notes: 2. <u>Alteration of ecosystem/community structure?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> Notes: 3. <u>Alteration of ecosystem/community functions and processes?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> Notes: Acorns have lower nutrient value than native acorns. (7) 4. <u>Allelopathic properties?</u> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Notes:
D. SOCIO-ECONOMIC Effects	
I. Positive aspects of the species to the economy/society:	Notes: Ornamental tree and wood fiber(2). Also used for wildlife food source and cover, primarily planted for turkey mast. (3)
II. Potential socio-economic	Notes: Not yet widely planted in WI. One grower in Kenosha

effects of requiring controls: Positive: Negative:	County and 3 in Northern Illinois, not seen as an important landscape plant (9).
III. Direct and indirect socio-economic effects of plant:	Notes:
IV. Increased cost to sectors caused by the plant:	Notes:
V. Effects on human health:	Notes:
VI. Potential socio-economic effects of restricting use: Positive: Negative:	Notes: Organizations and companies selling it would need to switch to other species. Studies find that use as ornamental plantings away from natural areas and woodlands are probably not a threat. However plantings in or near wildland areas could slowly spread into adjacent areas. (7)
E. CONTROL AND PREVENTION	
I. Costs of Prevention (including education; please be as specific as possible):	Notes: Prevention is primarily limited to stopping the planting in wildlands
II. Responsiveness to prevention efforts:	Notes:
III. Effective Control tactics:	Mechanical <input checked="" type="checkbox"/> Biological <input type="checkbox"/> Chemical <input checked="" type="checkbox"/> Times and uses: If small, pull seedlings or treat leaves with glyphosate. To control large trees: cut tree and grind stump; girdle, hack and squirt glyphosate; or cut and paint stump with glyphosate. (4)
IV. Minimum Effort:	Notes:
V. Costs of Control:	Notes:
VI. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes:
VII. Non-Target Effects of Control:	Notes:
VIII. Efficacy of monitoring:	Notes:
IX. Legal and landowner issues:	Notes: Primarily being planted by private landowners for turkeys.

F. REFERENCES USED:

- UW Herbarium
- WI DNR
- TNC
- Native Plant Conservation Alliance
- IPANE
- USDA Plants

Edited by Ellen Jacquart, Indiana Chapter TNC, July 19, 2007

Number	Reference
1	USDA, NRCS. 2007. The PLANTS Database (http://plants.usda.gov , 23 April 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
2	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?70535 (23 April 2007)
3	US DA NRCS Northeast Plant Materials Program. 2002. http://plants.usda.gov/factsheet/doc/fs_quac80.doc
4	Swearingen, J., K. Reshetiloff, B. Slattery, and S. Zwicker. 2002. Plant Invaders of Mid-Atlantic Natural Areas. National Park Service and U.S. Fish & Wildlife Service, 82 pp. http://www.invasive.org/eastern/midatlantic/quac.html
5	NC State University. Plant Fact Sheets. http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/quercus_acutissima.html
6	Czarapata, Elizabeth J. 2005. Invasive Plants of the Upper Midwest: An Illustrated Guide to their Identification and Control. The University of Wisconsin Press, Madison, WI.
7	Whittemore, Alan T. 2004. Sawtooth Oak in North America. US National Arboretum. Brit.Org/SIDA 21(1) .
8	Ed Hasselkus, UW Emeritus Horticulture Professor. Comments on Invasive Plant Classification 2007.
9	SAG Meeting

Author(s), Draft number, and date completed: Mariquita Sheehan, 1st Draft, 26 April, 2007

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