Michigan Invasive Plant Council

Michigan Plant Invasiveness Assessment System (MPIAS June 2008)

Genus, Species, Species subset

Scientific Name:	Acer platanoides		
Synonyms:			
Common Names(s):	Norway Maple		
Plant Type:	☐ **Annual**	☐ **Biennial**	☒ **Perennial**

The information within this MPIAS assessment is specific to the plant listed and does not imply that cultivars, varieties, other species subsets and hybrids exhibit the same behavior or scoring.

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USDA/APHIS – Federal Noxious Weed List	http://www.aphis.usda.gov/ppq/permits/fnwsbycat-e.PDF
Michigan Department of Agriculture – Noxious, Prohibited, and Restricted Plants	http://www.michigan.gov/mda/0,1607,7-125-1569_16993-11250--,00.html

Federal and Michigan Noxious, Prohibited, or Restricted Plants

Is this species listed on the federal or Michigan noxious, prohibited, or restricted plant lists?	☐ **YES**	☒ **NO**
If **YES** then do not proceed with assessment but indicate its federal and/or Michigan Department of Agriculture status on the front of the response form		
If **NO** then go to Section I		

Section I: Biological Character

Biological characteristics: Reproductive Ability and Dispersal. Reproductive characteristics and dispersal ability strongly relate to the potential of a plant to become invasive. The results of this section will be used by MIPC to calculate a rank of Potential Invasiveness in Section VII. *Check those that apply to this plant and note any other weedy or invasive traits this plant possesses in the space for comments below:*

I – A Reproductive Ability

Reproductive ability identifies a plant's invasive tendency in Michigan as high (H), medium (M), low (L), insignificant (I) or none (N) based on seed and vegetative reproductive characteristics.

Plant Type:	☐ **Annual**	☐ **Biennial**	☒ **Perennial**

I – A1. Reproduction by Seed

If the plant is sterile or unable to complete a reproductive cycle in Michigan, skip the following questions and enter an N in the Seed Subrank at the end of this section.

☒	Reproduces readily by seed.
☐	When it produces seed, produces over 1,000 seeds per square meter
☒	Reproduces at least once per year
☐	Can germinate in a wide range of conditions
☐	Seeds remain viable in the soil for 2 years or more.

Seed rating:	1 box marked = I 2 boxes marked = L 3 boxes marked =M 4 - 5 boxes marked = H

Seed Subrank

Enter the Seed Subrank in the appropriate blank at the end of Section I – A.	**Rank**
I – A1. Reproduction by Seed:	L

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Reproducing vigorously by seed. . . (www.natureserve.org, I-Rank Reasons Summary) Produces abundant seedlings each spring (Kulagin & Mushinskaya 1985; Lackschewitz 1991). (Munger,			

GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

The seeds germinate readily, even in dense shade. (Rhoads, AF and Block, TA. 2002. Invasive species fact sheet: Norway Maple Acer platatnoides. Morris Arboretum of the University of Pennsylvania. http://www.paflora.org/Acer%20platanoides.PDF)

Abundant seed crops (Matlack 1987). (Martin, PH. 1999. Norway maple (Acer platanoides) invasion of a natural forest stand: understory consequence and regeneration pattern. Biological Invasions 1:215-222)

Seeds can lie dormant and germinate several years later. (Shakespere, G. 2003. Introduced Species Summary Project: Norway Maple (Acer platanoides). Invasion Biology Introduced Species Summary Project — Columbia University. (http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides.html)

Number of seeds per plant: many (greater than 1000). Seeds remain viable in the soil for less than 1 year. Requires open soil and disturbance to germinate. (Southwest Exotic Plant Information Clearinghouse, Location: Indiana Dunes National Lakeshore, U.S. Department of the Interior, USGS; www.usgs.nau.edu/swepic/)

Norway maple seedlings were less common on wet and dry sites than on mesic sites. (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

The tree is rare in areas that are too wet, too dry or acidic (pH near 4). (Nowak, D. and Rowntree, R. 1990. History and Range of Norway Maple. Journal of Arboriculture. 16(11):291-296

I – A2. Reproduction by Vegetative Means

If the plant does not reproduce vegetatively in Michigan, skip the following questions and enter an N in the Vegetative Subrank at the end of this section.

☐	Reproduces readily *in situ* by vegetative means
☐	Has spreading rhizomes that may root at nodes.
☐	Fragments easily with fragments readily becoming re-established long distances from the parent plant by natural means (if checked, rating is automatically marked as high)
☐	Other (*please discuss in comments and provide documentation)

Vegetative rating:	1 box marked = I 2 boxes marked = L

	3 boxes marked =M 4 boxes marked = H

Vegetative Subrank

Enter the Vegetative Subrank in the appropriate blank at the end of	**Rank**
Section I – A Vegetative:	**N**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

I-A3. Growth Habit

Growth Habit	Large tree with broad rounded crown

I – B. Dispersal:

Dispersal identifies the vectors or agents of dispersal and the likelihood of long distance dispersal.

Dispersal agents	(E) Environmental Influences such as wind and water (W) Wildlife, both mammals and birds (DA) Domestic Animals, both mammals and birds (H).Human activity Dispersal distance refers to the potential for long distance dispersal.

Dispersal distance refers to the potential for long distance dispersal.

I-B1. Vector categories

Identify the vector categories and individual agents involved with the dispersal of this plant. Check all that apply	
☒ Environmental Influences (E):	☒ Wind ☐ Water ☐ Other (name)
☐ Wildlife (W):	☐ Mammals ☐ Birds ☐ Other (name)
☐ Domestic Animals (DA):	☐ Mammals ☐ Birds ☐ Other (name)
☒ Human Activity (H):	☐ New development (construction equipment) ☐ Maintenance equipment ☐ Borrow material (topsoil, gravel, stone) ☐ Recreation (ATV, boats, RV) ☒ Dumping ☒ Other (name) from adjacent landscape trees
☐ Other (*please discuss in comments and provide documentation)	

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	Reviewed scientific publication	☐	Observational
☒	Other published material	☐	Anecdotal

Comments, supportive evidence, and explanation of documentation level:

Estimated as the most frequently planted and occurring street tree in the United States, with htethe majority of its use in the eastern and north central Uniyted States. (Nowak, D. and Rowntree, R. 1990. History and Range of Norway Maple. Journal of Arboriculture. 16(11):291-296.

Widely planted throughout much of North America, especially along urban streets and in yards.

(Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Commonly planted as an ornamental along streets and in parks. (Global Invasive Species Database: Ecology of Acer platanoides, www.invasivespecies.net)

Norway Maple seeds are wind-dispersed (Kulagin & Mushinskaya 1985; Matlack 1987; University of Connecticut 2001). Estimated lateral distance traveled by samaras in a 6.2 miles/hour breeze when dropped from a height of " approximately ¾ of the maximum height of the species" was 165 ft. (50.3 m) (Matlack 1987). (Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Acer platanoides seeds are contained in winged samaras that are dispersed by wind. (University of Connecticut. 2001. Acer platanoides (Norway Maple). In: Invasive Plant Atlas of New England (IPANE), www.lib.uconn.edu/webapps/ipane/browsing.cfm?descriptionid=32)

Across all forest types (excluding urban trees), the population was highly aggregated around roads and other Norway maple trees. 90% of the nearest neighbor distances between Norway maples were 8.3 m or less and 90% of Norway maple to road distances were 40.8 m or less. 10% of remaining distances were scattered across a relatively broad range (maximum = 439.6 m between nearest Norway maple neighbors and 220.6 m from a road). This indicates that while Norway maple was highly correlated with both roads and the presence of other Norway maples, some individuals have dispersed to areas far removed from either feature. (Wangen, SR, Webster, CR and Griggs, JA. 2006. Spatial characteristics of the invasion of Acer platanoides on a temperate forested island. Biological Invasions 8:1001-1012.)

The path and distance from the road correlated with the presence of Norway maples but not the presence of sugar maples. Results of the Mann-Whitney tests indicated there were significantly more Norway maples closer to the road and on the path. . . .the paths running perpendicular to the road allowed Norway maple to penetrate greater distances along the path than in nearby nondisturbed areas with no paths. (Anderson, R. 1999. Disturbance as a factor in the distribution of sugar maple and the invasion of Norway maple into a modified woodland. Rhodora. 101(907):264-273)

Our Park-wide preliminary assessment indicated that the Norway maple problem is primarily associated with woodland edges along roads where Norway maples were planted many years ago as street or residential yard trees. . . In most cases, the problem is still associated with woodland edges, but Norway maple appears to be spreading inward and, at Morris Park, has spread very far into the interior. (McNair, JN. 2005. Adaptive Management of Invasive Exotic Plants in Philadelphia' s Fairmount Park System. Patrick Center for Environmental Research, Academy of Natural Sciences of Philadelphia. www.ansp.org/~mcnair/am_NM.html)

Norway maple was not restricted to forest margins; all size classes were abundant throughout the forest interior. Seed source again seemed to play a more influential role than edge microclimate or light levels. (Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive norway maple. Rhodora 102(911):332-354)

Its wind-borne seeds dispersed tens and occasionally hundreds of meters away from seed sources into woodland. . (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

Significant predictors of young Norway maple abundance were distance to the nearest reproductive Norway maple (with most distances between 10 and 100 m) and degree of site disturbance. . . .our observations and transect data and information from other studies (Anderson 1999) indicate that seeds can be carried well over 100 m from reproducing trees. While the greatest densities of seedlings and saplings occur at woodland edges, occasional individuals occur hundreds of meters from likely seed sources. (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

I – B2. Dispersal Distance

☒	Little potential for long-distance dispersal (1 km in a single dispersal event)
☐	Great potential for long-distance dispersal

Please use this scale and your answers from Section I – B above to calculate a: Dispersal Subrank

Dispersal Subrank	I One or two vector categories; Little potential for long-distance dispersal L Three or four vector categories; Little potential for long-distance dispersal M One or two vector categories; Great potential for long-distance dispersal H Three or four vector categories; Great potential for long-distance dispersal

Dispersal Subrank

Section I B. Dispersal Subrank:	**I**

Biological Character Subrank

Biological Character Subrank	**Rank**
Section I A. Reproductive Ability: Reproduction by Seed	**L**
Section I A. Reproductive Ability: Reproduction by Vegetative Means	**N**
Section I B. Dispersal:	**I**

Section II: Impact

Impact: Impact identifies the plant's ecological, aesthetic, economic influence on each of the respective natural, managed, and/or constructed system. Questions on impact are tailored to the individual characteristics and composition of the system. Impact is classified as high (H), medium (M), low (L), or insignificant (I).

II - A. Natural Systems

Impacts on native species and natural systems: Terrestrial and Aquatic. *Where possible, assess the cumulative (e.g., over a period of several decades) impact of the plant on the natural areas and other wildlands where it typically occurs. Impacts will be re-assessed as more is learned and as the plant moves into new areas.*

II - A1. Ability to invade natural systems

Choose one answer that best describes the ability of this plant to invade natural systems.	
☐	Not known to spread into natural systems in the absence of disturbance (e.g. plant may persist from former cultivation) **(0 points)**
☐	Establishes only in areas where major disturbance has occurred in the last 20 years (e.g., post-hurricane sites, highway corridors) **(3 points)**
☐	Often establishes in mid-late-successional natural areas where minor disturbances may occur (e.g. tree falls, hiking trails, streambank erosion), but no major disturbance within the last 20-75 years **(7 points)**
☒	Often establishes in intact or otherwise healthy natural systems with no major disturbance for at least 75 years **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Norway maples were present in greater number closer to the road and on the path. . .paths running perpendicular to the road allowed Norway maple to penetrate greater distances along the path than in nearby nondisturbed areas with no paths. The study site was Middlesex Fells Reservation in eastern Massachusetts, which was created in 1894. Today it is mostly wooded and a popular urban retreat. (Anderson, R. 1999. Disturbance as a factor in the distribution of sugar maple and the invasion of Norway maple into a modified woodland. Rhodora. 101(907):264-273)

Inherent Ability to Invade Conservation Areas and Other Native Species Habitats: High significance

Comments: Often establish in shade beneath intact forest canopy (Rhoads and Block 2002). (www.natureserve.org, subrank III, #14)

(see the following citation)

Norway maple is a frequent invader of urban and suburban forests. Its extreme shade tolerance, especially when young, has allowed it to penetrate beneath an intact forest canopy. (Rhoads, AF and Block, TA. 2002. Invasive species fact sheet: Norway Maple Acer platatnoides. Morris Arboretum of the University of Pennsylvania.

http://www.paflora.org/Acer%20platanoides.PDF)

Note: the 3 of the 4 journal articles referenced in the above citation were all conducted at the same study site, the Drew University Forest Preserve (18 ha in New Jersey), described as the following: a young forest fragment in which Norway maple first appeared over 70 years ago when young native beech and oak trees were forming a closed forest amidst older open-grown oaks, apparently somke 30-50 years after pasture abandonment. (Webb, SL and Kaunzinger, CK. 1993. Biological Invasion of the Drew University (New Jersey) Forest Preserve by Norway Maple (Acer platanoides L.) 120(3):343-349)

In a later study conducted at the same site, it was described as an intact second-growth forest. Norway maple was present within the Drew Forest Preserve by 1915. American beech was present by 1890 and sugar maple by 1920. (Webb, SL, Dwyer, M, KDaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive Norway maple (Acer platanoides). Rhodora 102(911):332-354)

Norway maple was a major component of the Preserve (Drew University Forest Preserve, Madison, Morris Co., New Jersey, of 18 ha within a heavily developed suburban region) in a ll but the largest and oldest classes. It ranked second in abundance and fourth in dominance among 13 tree species present, for large tgrees with DBH > 5 cm. It was well represented among small trees, and its seedlings and saplings outnumbered all others, accounting for 59% of small stems (DBH < 5 cm). (Webb, SL and Kaunzinger, CK. 1993. Biological Invasion of the Drew University (New Jersey) Forest Preserve by Norway Maple (Acer platanoides L. 120(3):343-349)

A comparatively small but potentially influential set of individuals were observed at relatively long distances from the main invasion front (Study site on Mackinac Island). Across all forest types (excluding urban trees), the population was highly aggregated around roads and other Norway maple trees. 90% of the nearest neighbor distances between Norway maples were 8.3 m or less and 90% of Norway maple to road distances were 40.8 m or less. 10% of remaining distances were scattered across a relatively broad range (maximum = 439.6 m between nearest Norway maple neighbors and 220.6 m from a road). This indicates that while Norway maple was highly correlated with both roads and the presence of other Norway maples, some individuals have dispersed to areas far removed from either feature. (Wangen, SR, Webster, CR and Griggs, JA. 2006. Spatial characteristics of the invasion of Acer platanoides on a temperate forested island. Biological Invasions 8:1001-1012.)

Two variables had significant effects on the relative abundance of Norway maple seedlings and saplings: substrate disturbance and distance to the nearest reproductive Norway maple. (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

II - A2. Impact on Ecosystem Processes

Plants that alter processes such as fire occurrence or frequency, erosion, and sedimentation rates, hydrological regimes, or nutrient regimes often have the greatest long-term impacts on ecosystems. Some invaders can completely transform natural systems so that they can no longer support native species.

Choose one answer that best describes the impact of this plant on ecological processes:	
☒	Not known impact on ecosystem processes **(0 points)**
☐	Influences ecosystem processes (e.g., has perceivable but mild influence on soil nutrient availability) **(5 points)**
☐	Significant alteration in ecosystem processes (e.g., increases sedimentation rates along coastlines, reducing open water areas that are important for waterfowl) **(10 points)**
☐	Major, possibly irreversible, alteration or disruption of ecosystem processes (e.g., the plant reduces water level from open water or wetland systems through rapid transpiration, making these areas more fire prone and unable to support native wetland species; or plant fixes nitrogen in the soil making soil unlikely to support certain native plants) **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Impact on Ecosystem Processes and System-wide Parameters: Insignificant. Comments: No significant alterations (Randall and Marinelli 1996). (www.natureserve.org, subrank I, #1)			

II - A3. Impact on Natural Community Structure

Choose one answer that best describes this plant's impact on community structure:	
☐	No impact, establishes in an existing layer without influencing its structure **(0 points)**
☐	Influences structure in one layer (e.g., changes the density of a layer) **(3 points)**
☒	Significant impact on at least one layer (e.g., creation of a new layer, elimination of an existing layer) **(7 points)**
☐	Major alteration of structure (e.g., covers canopy, eradicating most or all layers below) **(10 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Impact on Ecological Community Structure: High significance. Comments: Casts heavy shade that			

excludes native vegetation (Swearingen et al. 2002; Weber 2003). (www.natureserve.org, subrank I, #2)

The Norway maple understory was typically a carpet of Norway maple seedlings, which comprised 83% of stems and 98% of all woody seedlings beneath Norway maple trees. (Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive Norway maple (Acer platanoides). Rhodora 102(911):332-354)

Our results indicate that Acer platanioides causes large shifts in the community of understory plants. . . (Reinhart, KO, Greene, E, and Callaway, RM. 2005. Effects of Acer platanoides invasion on understory plant communities and tree regeneration in the northern Rocky Mountains. Ecography 28:573-582)

II – A4. Impact on Natural Community Composition

Choose one answer that best describes this plant's impact on community composition:	
☐	No impact, causes no known changes in native populations **(0 points)**
☐	Influences community composition (e.g., reduces the number of individuals in one or more native populations by reducing recruitment) **(3 points)**
☒	Significantly alters community composition (e.g., produces a significant reduction in the population size of one or more native species in the community) **(7 points)**
☐	Causes major alteration in community composition (e.g., results in the extirpation of one or several native species, reducing biodiversity or changing the community composition towards species exotic to the natural community) **(10 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Impact on Ecological Community Composition:High significance. Comments: Can form a monotypic stand (Swearingen et al. 2002; Weber 2003). May transform native woodlands into species poor stands (Wycoff and Webb 1996; Weber 2003). (www.natureserve.org, subrank I, #3)

A significantly reduced number of spring wildflowers occur under Norway maples compared to those under other trees. . . This reduction of understory diversity has also been noted elsewhere (University of Connecticut, University of (Massachusetts, Illinois Extension Service).). (Shakespere, G. 2003. Introduced Species Summary Project: Norway Maple (Acer platanoides). Invasion Biology Introduced Species Summary Project – Columbia University. (http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides.html)

The Norway maple understory differs from areas beneath the native sugar maple and beech, with lower species richness, and lower densities of non-Norway maple stems. Among tree seedlings, the exotic Acer platanoides far outnumbered all others, beneath its own canopy and also beneath the two native trees. (Wyckoff, PH and Webb, SL. 1996. Understory influence of the invasive Norway Maple (Acer platanoides). Bulletin of the Torrey Botanical Club 123 (3):197-205)

The three stands differed in community composition with the stand most dominated by A. Platanoides invasion being more compositionally homogenous, and less species rich (-67%), species even (-40%), and diverse (-75%) than the two other stands. Our results indicate that A. platanoides trees suppress most native species, including the regeneration of the natural canopy dominants, but facilitate conspecifics in their understories. Other studies have indicated that A. platanoides foliage produces water-soluble antifungal chemicals (Dix 1974) which may alter the soil-borne mycorrhizae, pathogenic

fungi, and decomposer fungi in ways that favor conspecific seedlings (Vivanco et al 2004). (Reinhart, KO, Greene, E, and Callaway, RM. 2005. Effects of Acer platanoides invasion on understory plant communities and tree regeneration in the northern Rocky Mountains. Ecography 28:573-582)

It was confirmed that the leaves of Acer platanoides contain an antifungal inhibitory substance. Low concentrations of sterile cold water extracts inhibited the germination of the spores of Cladosporium herbarum (three isolates), Cladosporium sphaerospermum and Cylindrocarbon radicicola. Inhibitory activity was found in leaf samples collected during a period from July to October but activity had disappeared from leaves collected in the following January. One of the active components has been identified as gallic acid. . . (Dix, NJ. 1974. Identification of a water-soluble fungal inhibitor in the leaves of Acer platanoides L. Annals of Botony 38:505-514.)

Norway maple was the second most abundant tree species at the 32 Worcester sties, and by far the most common non-native species. It contributed at least a third of all sampled stems at nine sites and was absent from only four sites. Of these four sites, three were samong the largest sampled areas of contiguous woodland, all in excess of 30 ha. (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

We conclude that A. platanoides utilizes light, water and nutrients more efficiently than A. saccharum. Kloeppel, BD and Abrams, MD. 1995. (Ecophysiological attributes of the native Acer saccharum and the exotic Acer platanoides in urban oak forests in Pennsylvania, USA. Tree Physiology 15:739-746)

II - A5. Conservation Significance of the Natural Systems and Native Species Threatened

Many invaders occur primarily in disturbed, low quality habitats that are dominated by other invasive plants. Invasive plants have a greater impact if they (a*) directly or indirectly threaten native species or communities that are considered rare or vulnerable (e.g., Federally listed or ranked* G1-G3 by The Nature Conservancy and Natural Heritage Network) *or* (b) *threaten outstanding, high quality occurrences of common community types.*

Indicate below the natural communities (Michigan Natural Features Inventory, 1986) in which the plant has become invasive, and then list any rare species that are or are likely to become threatened by this plant. (Note: * indicates a state rank of S1-S3; ** indicates global rank of G1-G3 and state rank of S1-S3)

Natural Communities Affected

Wetland		
Marsh:	☐ Submergent marsh ☐ Emergent marsh ☐ Great Lakes marsh* ☐ Northern wet meadow ☐ Southern wet meadow*	☐ Inland salt marsh ** ☐ Intermittent wetland ** ☐ Coastal plain marsh ** ☐ Interdunal marsh **
Prairie:	☐ Lakeplain wet prairie ** ☐ Lakeplain wet-mesic prairie **	☐ Wet prairie ** ☐ Wet-mesic prairie **
Fen:	☐ Prairie fen ** ☐ Northern fen *	☐ Patterned fen ** ☐ Poor fen **
Bog:	☐ Bog	☐ Muskeg *
Forest:	☐ Poor conifer swamp ☐ Rich conifer swamp * ☐ Relict conifer swamp **	☐ Hardwood-conifer swamp ** ☐ Southern swamp * ☐ Southern floodplain forest **
Shrub:	☐ Northern shrub thicket ☐ Southern shrub-carr	☐ Inundated shrub swamp *
Forest/marsh:	☐ Wooded dune and swale complex **	

Upland:		
Forest:	☐ Mesic southern forest (southern hardwood) ** ☐ Dry-mesic northern forest (pine-hardwood)* ☐ Dry-mesic southern forest (oak-hardwood) * ☐ Dry northern forest (pine) *	☐ Dry southern forest (oak forest) * ☐ Boreal forest * ☐ Mesic northern forest (northern hardwood and hemlock-hardwood) *
Savanna:	☐ Lakeplain oak openings ** ☐ Bur oak plains ** ☐ Oak openings ** ☐ Oak barrens **	☐ Pine barrens ** ☐ Great lakes barrens ** ☐ Northern bald (krummholz ridgetop) **
Prairie:	☐ Mesic prairie ** ☐ Hillside prairie ** ☐ Mesic sand prairie **	☐ Woodland prairie ** ☐ Dry sand prairie **
Primary:	☐ Open dunes ** ☐ Sand gravel beach ** ☐ Cobble beach * ☐ Bedrock beach * ☐ Alvar ** ☐ Bedrock glade **	☐ Dry non-acid cliff * ☐ Moist non-acid cliff * ☐ Dry acid cliff * ☐ Moist acid cliff * ☐ Sinkhole **

Native Species affected:	
Global Heritage Status Rank:	
National Heritage Status Rank (U.S.):	
National Heritage Status Rank (Canada):	
Michigan Rank:	
Michigan wetland category:	
Physiognomy:	
Wetness coefficient:	
Other information:	Found in second growth forests (Breen 2003).

	(www.natureserve.org, subrank I, #5) Found in Quercus-Fagus-Acer saccharum forests (Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive Norway maple (Acer platanoides). Rhodora 102(911):332-354) Habitats in New England: early succcesssional forest, forest wetland, late successional forest, open disturbed area, roadside, vacant lot, yard or garden (Invasive Plant Atlas of New England; www.lib.uconn.edu/webapps/ipane/browsing.cfm?descriptionid=32) Mesic forests (Webb and Kaunzinger 1993),

Conservation Significance

Based on this information, choose one answer that best describes the overall conservation significance of native species or communities affected by this plant:	
☐	Found only in human-disturbed habitats and not known to impact any vulnerable or high quality native species or communities (**0 points**)
☒	Usually inhabits common, unthreatened habitats and rarely impacts vulnerable or high quality species or communities **(3 points)**
☐	Known to occasionally threaten vulnerable or high quality species or communities **(7 points)**
☐	Known to often inhabit one or more vulnerable or high quality communities and/or often threatens rare native species **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Conservation Significance of the Communities and Native Species Threatened: Moderate significance Comments: Found in second growth forests (Breen 2003). (www.natureserve.org, subrank I, #5)			

Impact Subrank: Section II: Natural Systems

Total Points from questions II – A1 to II – A5	32
Natural Systems Impact Subrank:	M
Determine a Subrank using this scale: **0 – 12 points = I; 13 – 28 = L; 29 – 45 = M; 46 – 65 = H**	M

II - B. Production/Managed Forests, Christmas Tree Plantations

Definition: Forests managed for wood and fiber production and/or wildlife or other values such as pine plantations, aspen, northern hardwoods, and Christmas tree plantations.

Desirable or Weed Plant

Is the plant in question:		
An intended crop or desirable plant	☐ **YES**	☒ **NO**
Considered a weed plant	☒ **YES**	☐ **NO**
If the answer is yes to crop/desirable plant than proceed to section II-C. If the plant is identified as a weed plant continue		

Extensiveness

How extensive is this plant?	
☐	It is not known to occur **(0 points)**
☒	Scattered individuals or present in small isolated patches **(3 points)**
☐	Establishes along forest edges or in areas disturbed by forest management activities- i.e. roads, landings, clearing or skid trails **(7 points)**
☐	Ubiquitous throughout, spreading or dominant in the understory (**15 points**)

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☐	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: See Section IIA			

Production Impact

Is it impacting production?	
☐	No impact to tree regeneration **(0 points)**
☒	Regeneration somewhat impacted **(5 points)**
☐	Regeneration moderately impacted **(7 points)**
☐	Tree regeneration is not occurring because of this plant. **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Production/Management Stages

At what production/management stages does this plant have a negative impact? Check all that apply:			
☐	**None (0 points)**	☒	**Sapling stage (10 points)**
☐	**Planting (5 points)**	☐	**Pole stage or mature stand (15 points)**
☒	**Seedling establishment (5 points)**		

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: See Section IIA			

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action.

Silvicultural Treatments

What silvicultural treatments associated with the crop species may influence the presence of this plant. Check all that apply:	
☐	Natural regeneration
☒	Site prep
☐	Planting
☐	Selection cut
☐	Thinning
☐	Clear cut
☐	Whole tree
☐	Shortwood

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Introduction sources

Introduction sources. Check all that apply:	
☐	Corridors (roads, utility, trails, streams, and rivers)
☐	Seed mixes-re-vegetation practices
☐	Seed bank
☐	Equipment- logging, recreational, road building (skidders, harvesters, ATV's, road graders)
☐	Borrow material (gravel, sand, topsoil)
☐	Wildlife (mammals, birds)
☐	People (recreational user, cars, boats)
☐	Unauthorized dumping
☒	Plants on adjacent sites

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: See Section IIA			

Impact Subrank: Section II-B. Production/Managed Forests, Christmas Tree Plantations

Add total points		23
Rating:	**≤ 5 = Insignificant (I)** **>5 ≤ 13 = Low (L)** **>13 ≤ 34 = Medium (M)** **>34 = High (H)**	
Production/Managed Forests, Christmas Tree Plantations Subrank:		M

II-C. Impacts on Managed Landscapes within Suburban and Urban Ecosystems

Definition: Public and private areas within suburban and urban communities managed for green belts, linear parks, parks, and other recreational uses as well as urban forests and open space integrated throughout residential and commercial centers. Commercial centers include retail centers, corporate campuses and industrial areas. These areas are typically managed with various degrees of input by individual property owners, public agencies and/or commercial contractors and include unmanaged peripheral areas.

Desirable or weed plant

Is the plant in question:		
An intended or desirable plant:	☒ **YES**	☐ **NO**
Considered a weed plant:	☒ **YES**	☐ **NO**
If the answer is yes to desirable plant than proceed to section II-D. If the plant is identified as a weed plant continue		

Extensiveness

How extensive is this plant in suburban and urban ecosystems?	
☐	Not present **(0 points)**
☒	Present in scattered areas and isolated patches **(3 points)**
☐	Present in areas not receiving routine or regular management practices **(5 points)**
☐	Persistent throughout suburban and urban ecosystems. **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Considered desirable in many urban landscapes where it was/is intentionally planted (see references under I-B Dispersal), but considered a weed in many urban/suburban forests in the northeast U.S. based on the following studies:

Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235.

Anderson, R. 1999. Disturbance as a factor in the distribution of sugar maple and the invasion of Norway maple into a modified woodland. Rhodora 101(907):264-273.

Martin, PH. 1999. Norway maple (Acer platanoides) invasion of a natural forest stand: understory consequence and regeneration pattern. Biological Invasions 1:215-222.

Webb, SL and Kaunzinger, CK. 1993. Biological Invasion of the Drew University (New Jersey) Forest Preserve by Norway Maple (Acer platanoides L. 120(3):343-349.

Wyckoff, PH and Webb, SL. 1996. Understory influence of the invasive Norway Maple (Acer platanoides). Bulletin of the Torrey Botanical Club 123 (3):197-205.

Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive norway maple. Rhodora 102(911):332-354.

Webb, SL, Pendergast IV, TH, and Dwyer, ME. 2001. Response of native and exotic maple seedling banks to removal of the exotic, invasive Norway maple (Acer platanoides). Journal of the Torrey Botanical Society 128(2):141-149.

Kloeppel, BD and Abrams, MD. 1995. Ecophysiological attributes of the native Acer saccharum and the exotic Acer platanoides in urban oak forests in Pennsylvania, USA. Tree Physiology 15:739-746.

Impact on visual appeal

Impact on visual appeal of landscape compositions:	
☒	Does not alter visual appeal **(0 points)**
☐	Visual appeal compromised during limited periods or season **(3 points)**
☐	Requires periodic attention to maintain visual appeal **(7 points)**
☐	Requires regular attention to maintain visual appeal **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Impact on Desirable Plant Composition

Impact on Desirable Plant Composition:	
☐	No impact on surrounding desirable plants **(0 points)**
☐	Minor competition for light, water and nutrients without a direct influence on desirable plant quality **(3 points)**
☒	Competes and causes minor impacts on desirable plants' quality **(7 points)**
☐	Major influences on desirable plant quality caused by competition and changes in environmental conditions. **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: See Section IIA			

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action .

Introduction Sources

Introduction Sources. Check all that apply:			
☐	**Seed bank**	☐	**Equipment**
☒	**Off site plants**	☐	**Topsoil/mulch/compost materials**
☒	**On site plant**	☒	**Unauthorized dumping**
☐	**Seed mixes**	☐	**Wildlife**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: No supportive information			

Where found

Where is it found in the landscape?			
☒	**Ornamental beds**	☒	**Open space**
☒	**Boulevards and common areas**	☒	**Corridors**
☒	**Edges of landscaped areas**	☒	**Vacant land**
☒	**Woodlots**		

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: **Areas where it is found includes intentional plantings** **No supportive information**			

Impact Subrank: Section II-C. Managed Landscapes

Add total points		**10**
Rating:	**≤ 6 = Insignificant (I)** **>6 ≤ 9 = Low (L)** **>9 ≤ 36 = Medium (M)** **>36 = High (H)**	
Managed Landscapes within Suburban and Urban Ecosystems Subrank:		**M**

II - D. Impact on Agricultural, Horticultural and Turf Production Systems

Definition: Production areas for agronomic, horticultural, and other commodity crops. These include fields, orchards, and plantations.

Desirable or Weed

Is the plant in question:		
An intended crop:	☒ **YES**	☐ **NO**
Considered a weed plant:	☐ **YES**	☒ **NO**
If the answer is yes to crop than proceed to section III. If the plant is identified as a weed plant continue		

Ability to invade

Ability to invade agricultural, horticultural, and turf production systems:	
☐	Not known to be present **(0 points)**
☒	Present in scattered areas and isolated patches **(3 points)**
☐	Occurs on a regular basis in production systems **(7 points)**
☐	Spreads throughout production systems and beyond into adjacent areas **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:
See Section IIA

Impact on production

Is it impacting plant/crop production?	
☒	No impact to production **(0 points)**
☐	Somewhat impacted **(5 points)**
☐	Moderately impacted **(7 points)**
☐	Severely impacted **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Impact throughout production cycle

Does the plant have a negative impact throughout production cycle? Check all that apply:	
☐	Planting **(5 points)**
☐	Seedling/plant establishment **(5 points)**
☐	Crop maturation **(7 points)**
☐	Harvest **(7 points)**
☐	Processing **(10 points)**
☒	Fallow fields **(3 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action .

Introduction sources

Introduction sources. Check all that apply:	
☐	Seed bank
☒	Off site plants
☒	On site plant
☐	Seed mixes
☐	Equipment
☐	Topsoil/mulch/compost materials
☒	Unauthorized dumping
☐	Domestic animals
☐	Wildlife

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Impact Subrank: Section II-D. Agricultural, Horticultural, and Turf Production Systems

Add total points	**6**
Rating:	**≤ 5 = Insignificant (I)** **>5 ≤ 10 = Low (L)** **>10 ≤ 36 = Medium (M)** **>36 = High (H)**
Agricultural, Horticultural and Turf Production Systems Subrank:	**L**

II – E. Impact on Constructed Habitat Systems

Definition: Constructed Habitat in disturbed areas. These include woodland, prairie, and wetland construction and/or restoration.

Desired or Weed

Is the plant in question:		
A desired plant:	☐ **YES**	☒ **NO**
Considered a weed plant:	☒ **YES**	☐ **NO**
If the answer is yes to desired plant than proceed to section III. If the plant is identified as a weed plant continue		

Ability to invade

Ability to invade constructed habitats:	
☐	Not known to be present **(0 points)**
☒	Present in scattered areas and isolated patches **(3 points)**
☐	Occurs on a regular basis in habitat systems **(7 points)**
☐	Spreads throughout the habitat and beyond into adjacent areas **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Found in second growth forests (Breen 2003). Commonly planted and naturalized in New England (Breen 2003), Pennsylvania (Rhoads and Block 2002), mid-Atlantic and points north (Love 2003). (www.natureserve.org)

Two variables had significant effects on the relative abundance of Norway maple seedlings and saplings: substrate disturbance and distance to the nearest reproductive Norway maple. Abundance of young stems was positively associated with site disturbance and negatively correlated with distance to the nearest reproductive tree, indicating more seedlings and saplings on disturbed sites and on those with nearby seed sources. (Bertin, RI, Manner, ME, Larrow, BF, Cantwell, TW, and Berstene, EM. 2005. Norway maple (Acer platanoides and other non-native trees in urban woodlands of central Massachusetts. Journal of the Torrey Botanical Society 132(2):225-235)

Impact on Habitat

Impact on Habitat Composition:	
☐	No impact on habitat plant composition **(0 points)**

☐	Minor competition for light, water, and nutrients without a direct influence on desirable plant compositions **(3 points)**
☒	Competes and causes minor impacts on desirable plant compositions**(7 points)**
☐	Major influences on habitat composition caused by competition and changes in environmental conditions. **(15 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☒	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Can form a monotypic stand (Swearingen et al 2002; Weber 2003). Outcompetes Acer saccharum (Eckel 1990). Fails to provide habitat for Epifagus virginiana (a Fagus root parasite) and Lindera benzoin (Wyckoff and Webb 1996). (www.natureserve.org)			

Impact throughout habitat

Does the plant have a negative impact throughout the habitat? Check all that apply:	
☐	Planting **(3 points)**
☒	Seedling/plant establishment **(5 points)**
☐	Habitat maturation **(10 points)**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action .

Introduction sources

Introduction sources. Check all that apply:	
☐	Seed bank
☒	Off site plants
☐	On site plant
☐	Seed mixes
☐	Equipment
☐	Topsoil/mulch/compost materials
☐	Domestic animals
☐	Wildlife

Impact Subrank:: Section II-E. Constructed Habitat

Add total points		**15**
Rating:	**≤ 3 = Insignificant (I)** **>3 ≤ 10 = Low (L)** **> 10 ≤ 31 = Medium (M)** **>32 = High (H)**	
Constructed Habitat Subrank:		**M**

Section III. Distribution In Michigan And The United States

Document the known distribution of this plant. Indicate the area of origin for the species (Original Range) and the earliest documented occurrence in North America. Then, for Michigan, identify the extent of its occurance in each of four ecological regions (Albert 1995). The four ecological regions of Michigan, as pictured below, have been delineated based on broad climatic, geologic, edaphic, and vegetation patterns, and provide a more meaningful framework for assessing invasiveness than geopolitical boundaries.

Known distribution

Original Range (world wide)	Continental Europe (Dirr, M. 1998. Manual of Woody Landscape Plants. p. 43) Continental Europe and the Caucasus region (Shakespere, G. 2003. Introduced Species Summary Project: Norway Maple (Acer platanoides). Invasion Biology Introduced Species Summary Project - Columbia University. http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides.html)
Earliest possible documentation in North America	1756, by John Bartrum of Philadelphia, who received seedlings from Philip Miller in England (Leighton 1976). (Nowak, D. and Rowntree, R. 1990. History and Range of Norway Maple. Journal of Arboriculture. 16(11):291-296.

Regional Importance in Michigan

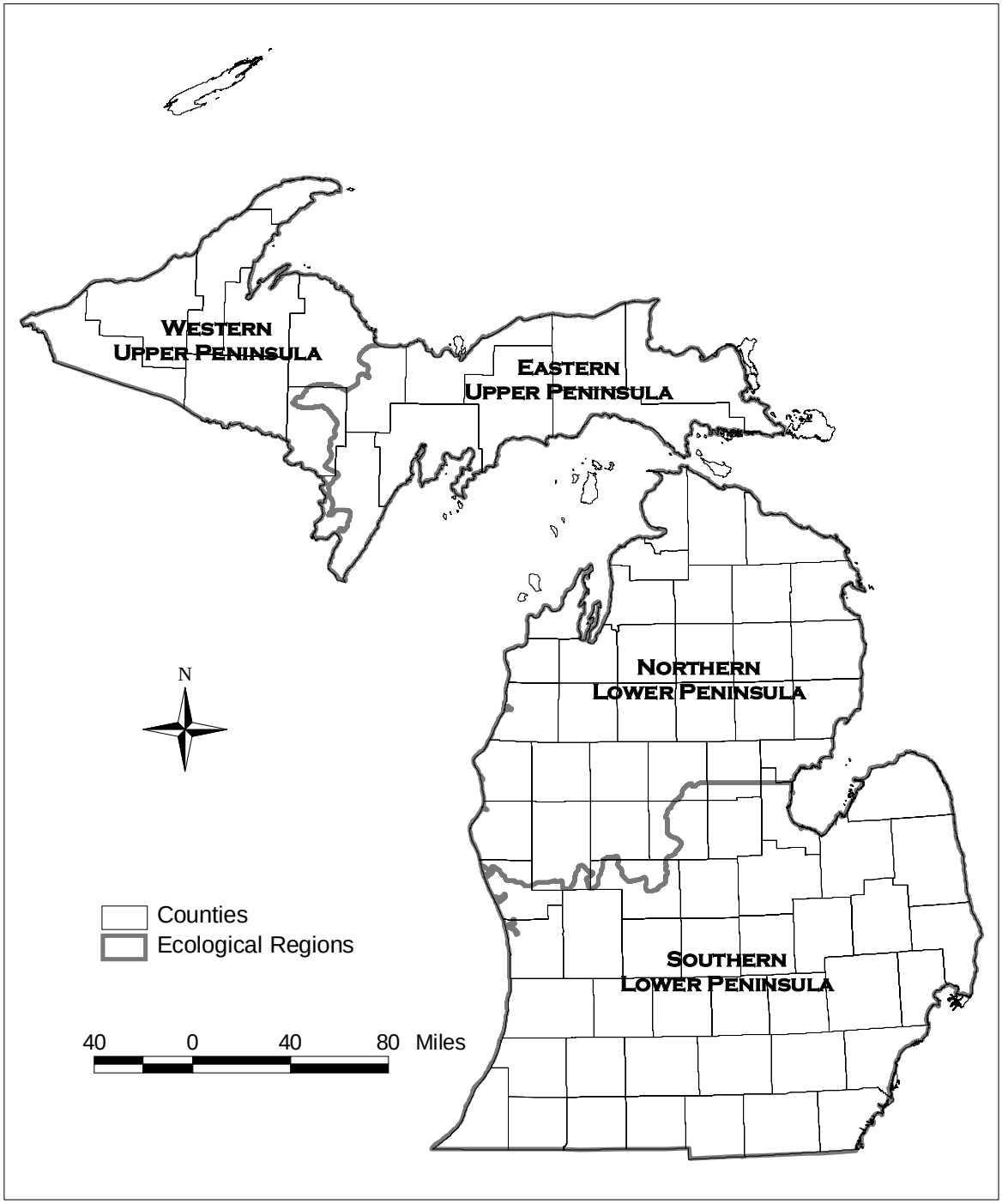
For each of the four ecological regions within Michigan, indicate the extent to which this plant has been identified as a problem.

Within each region identify whether the plant is: (see glossary for definitions).	N (naturalized) W (widespread) L (localized) I (isolated occurrences) A (absent)

For ratings of N or W, please enter the date of earliest reported occurrence in that region. Transfer the rating for each ecological region to the Distribution Subrank at the end of this section. If the date identified as a problem is unknown place (Unk) in the appropriate place.

Ecological Regions	Rating	Date
Western Upper Peninsula (WUP)	I	Unk
Eastern Upper Peninsula (EUP)	I	Unk
Northern Lower Peninsula (NLP)	I	Unk

Southern Lower Peninsula (SLP)	L	Unk



List the Michigan counties with known infestations (if there are many counties covering large areas, those areas may be identified. For example, "all counties in the Lower Peninsula" is acceptable in lieu of listing out all those counties):

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☐	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: WUP: Houghton, Baraga, Marquette NLP: Benzie SLP: Berrien, Kalamazoo, St. Joseph, Jackson, Washtenaw, Wayne, Ingham, Shiawassee USDA Plants Database, http://plants.usda.gov			

The following information is not scored in the assessment system however it is used to aid in determining the presence of this plant in surrounding states or provinces.

Problem in nearby states

Has this plant has been identified by land managers within Indiana, Illinois, Wisconsin, Ohio, and Ontario as a problem.

Please check the states/provinces and provide the appropriate documentation	
☒	Indiana
☒	Illinois
☒	Wisconsin
☒	Ohio
☒	Ontario

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Ontario (Comprehensive Report Species – Acer platanoides; www.natureserve.org) IN, IL, WI, OH (USDA Plants Database)			

Identify other areas in the U.S. in which it has been identified as a problem by land managers.

Some plants are not invasive everywhere they occur in the U.S., but only in certain regions or habitats. For instance, Tamarisks are severe riparian and wetland pests from California to Texas and north at least to Kansas, but while they escape occasionally in the eastern U.S., they have not been reported as a problem.

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Proportion of Current Range Where the Species is Negatively Impacting Biodiversity: High/Moderate significance.

Comments: This tree is commonly planted and naturalized in New England (Breen 2003), Pennsylvania (Rhoads and Block 2002), mid-Atlantic & points North (Love 2003). It does not appear to have become invasive in CT, yet (Mehrhoff 1999). (www.natureserve.org)

Based on floras and other literature, herbarium samples, and confirmed observations, Norway maple can potentially be found in North America, growing outside cultivation, in the following areas: from new Brunswick and Cape Breton Island west to Minnesota and south to Tennessee and North Carolina. In the West, it is found in British Columbia, Washington, Idaho, and western Montana. (Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Northwest U.S; Northeast U.S. to north central U.S. (based on map of plant distribution); Connecticut: invasive, not banned; Massachusetts: prohibited. (USDA Plants Database)

Current trends in total range within the United States.

Choose one answer that best describes the current trend:	
☐	Declining or Historical
☐	Stable
☒	Increasing
☐	Unknown

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Current Trend in Total Range within Nation: High/Moderate significance. Comments: Inferred from increase in number of reports, increase in number of states (from just New England to whole Northeast) since first reports. (www.natureserve.org, subrank III, #10)

Michigan Distribution Subrank: Section III Distribution In Michigan

Western Upper Peninsula (WUP)	I
Eastern Upper Peninsula (EUP)	I
Northern Lower Peninsula (NLP)	I
Southern Lower Peninsula (SLP)	L

Section IV. Control Methods

Control Methods document the availability of mechanical, chemical, biological, and fire as a resource in managing or eradicating the plant in question. Control Methods are reported as available (A), not available (NA), or under development (UD).

Control methods available

IV-A. Are Control Methods currently available for this plant?	**☒ YES**	**☐ NO**
If yes proceed to IV –B, No = NA (non available) in all the control categories.		

IV- B. Control Methods Currently Available

Mechanical: (Check all that apply)			
☒	**Hand pulling**	☒	**Pulling using tools**
☒	**Mowing/Cutting**	☒	**Stabbing**
☒	**Girdling**	☐	**Tilling**
☐	**Soil Solarization**	☐	**Flooding**
☐	**Grazing**	☐	**Other**

None marked = NA in the Control Method Subrank
≥ 1 marked = A in the Control Method Subrank
If you did not mark any methods and are aware of methods under development please include the information in the comments section below and mark UD in the Control Method Subrank

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Cutting down with a pruning saw; uprooting with a Weed Wrench (for small saplings 3.2-59.3 mm DBH). (McNair, JN. 2005. Adaptive Management of Invasive Exotic Plants in Philadelphia' s Fairmount Park System. Patrick Center for Environmental Research, Academy of Natural Sciences of Philadelphia. www.ansp.org/~mcnair/am_NM.html)

Use of the weed wrench to pull young trees out of the ground is effective. Girdling the trunk will also kill Norway maples. (Rhoads, AF and Block, TA. 2002. Invasive species fact sheet: Norway Maple Acer platatnoides. Morris Arboretum of the University of Pennsylvania. http://www.paflora.org/Acer%20platanoides.PDF)

Machetes were used on small stems, while 29 trees were too large for this method and were either girdled or felled by chain saw. A total of 1430 Norway maple seedlings were pulled up by the roots. . . (Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case

study of the invasive Norway maple (Acer platanoides). Rhodora 102(911):332-354)

If many Norway maples are already established in an area and have begun to compose all or some of the canopy, it is important that the large seed-source trees are removed first. If natural resource management of the area is long-term, then pruning large Norway maples may be the best option. In doing so more of the forest structure is allowed to remain while slowly eliminating seed-bearing limbs, eventually leaving a standing dead tree available for habitation by natural residents of the forest such as woodpeckers, insects and rodents.

However, if the same stand of Norway maples is managed on a short-term basis, then tree removal might be the best solution. If large trees are removed, however, it is very important that native plants are available to plant so sun-loving invasive vines do not take over the space beneath the newly opened canopy. Girdling large trees by cutting into the cambium layer around the trunk in a continuous ring is effective in killing them, typically within a couple of growing seasons. This also allows for more the forest structure to remain and prevents an immediate hole in the canopy.

Herbicides are effective in speeding up the killing process by applying to both cut stumps and girdled trees. Tryclopyrs and glyphosate agents are readily available and effective. Basel bark treatments can also be used and have proven to be effective in killing large Norway maples by the Natural Resources

Group of the New York City Parks Department. This method also keeps the dead tree in place.

If only seedlings and saplings require removing, hand weeding may be the only process needed. A weed wrench, which is a long-handled device that grips a sapling at its base, uses leverage to pull Norway maples out of the ground with most of their roots intact. Small saplings can also be snipped using pruning loppers or machetes and followed by applying herbicide to the exposed stump. (Love, R. 2003. Introduced Species Summary Project Norway Maple Acer platanoides. Invasion Biology Introduced Species Summary Project – Columbia University. http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides_2.htm)

Biological Control Agents:

	Control Method Subrank
Released/available biological control agents	**A**
Biological control agent currently being researched Please include information in the comments section below	**UD**
No known biological control agents available	**NA**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: No biological control options are currently known. (Rhoads and Block 2002)			

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action.

Biological Control testing

Identify the crops/plants that the biological control agents have been tested on.		
Is the biological control agent known to have a negative impact on non-target species?	☐ **YES**	☐ **NO**
If yes, identify the impacts species:		

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☐	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Chemical herbicides

Chemical Herbicides: (Check all that apply)			
☒	**Pre-emergence herbicides available**	☒	**Contact herbicides**
☒	**Post emergence herbicides available**		
None marked = NA in the Control Method Subrank **≥ 1 marked = A in the Control Method Subrank**			

If you did not mark any methods and are aware of methods under development please include the information in the comments section below and mark UD in the Control Method Subrank

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: Cutting down followed immediately by stump application of triclopyr (Cut+Triclopyr). (McNair, JN. 2005.			

Adaptive Management of Invasive Exotic Plants in Philadelphia' s Fairmount Park System. Patrick Center for Environmental Research, Academy of Natural Sciences of Philadelphia. www.ansp.org/~mcnair/am_NM.html)

Cutting followed by treatment of the cut stem with triclopyr (trees up to 4"" in diam)). . (Rhoads, AF and Block, TA. 2002. Invasive species fact sheet: Norway Maple Acer platatnoides. Morris Arboretum of the University of Pennsylvania. http://www.paflora.org/Acer%20platanoides.PDF)

Herbicides are effective in speeding up the killing process by applying to both cut stumps and girdled trees. Tryclopyrs and glyphosate agents are readily available and effective. (Love, R. 2003. Introduced Species Summary Project Norway Maple Acer platanoides. Invasion Biology Introduced Species Summary Project – Columbia University. http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides_2.htm)

Fire

Fire can control the spread of invasive species into or within natural areas.

Response to fire.			
☐	**Prescribed burns***	☒	**Spot burning***
None marked = NA in the Control Method Subrank **≥ 1 marked = A in the Control Method Subrank**			

If you did not mark any methods and are aware of methods under development please include the information in the comments section below and mark UD in the Control Method Subrank

*Refer to IV-C to determine whether a plant's response to fire requires consideration in planning for or using this method.

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

It is unclear to what extent and at what age Norway maple can survive fire by sprouting. We can probably assume that Norway maple increases in the absence of fire. It is likely that frequent fires would limit Norway maple establishment.

There is no published information available as of this writing (2003) describing the immediate effects of fire on Norway maple. Sugar maple, a native species that appears to share a number of biological and ecological traits with Norway maple, is easily damaged by fire.

Prescribed fire may or may not be an effective tool for controlling Norway maple. Where physical

conditions are sufficient for carrying surface fire, Norway maple presumably can be killed by fire. Although its ecological range in North America is poorly studied, areas where Norway maple is planted and is likely to escape cultivation are subject to a variety of fire regimes.

In the mixed mesophytic and northern hardwoods ecosystem types of the Northeast, where Norway maple is most commonly reported outside cultivation, fire return intervals range from 35 years to many centuries. Some of these areas, especially those with more frequent fire return intervals and a fire tolerant native flora, may provide suitable conditions for using prescribed fire to control invasive Norway maple.

Fire in mesic forest habitats may spread erratically, leaving a mosaic of burned and unburned patches. Prescribed fire is unlikely to be an effective measure for controlling Norway maple in mesic habitats, since many individuals may remain in unburned patches and other fire refugia.

Effects of fire on colonization and invasive potential of Norway maple are unclear. It does not appear that fire would directly promote an increase in Norway maple recruitment.

Use of fire in areas where Norway maple is present may or may not be appropriate, depending on management goals and the particular ecosystem involved. Using fire to control Norway maple in forest habitats where fire is infrequent may do substantial damage to fire-intolerant native species, such as sugar maple and American beech [61]. Conversely, fire may be appropriate where management goals simultaneously include controlling Norway maple and maintaining native seral species or otherwise enhancing ecosystem structure and function, such as oak (Quercus spp.) forests in the eastern U.S. or ponderosa pine (Pinus ponderosa) in the northern Rockies. For more information regarding fire effects on native flora, see the appropriate FEIS species summaries on this website. (Munger 2003)

The following information will not be scored in the assessment however it is useful in determining MIPC Plan of Action .

Response to fire

Many invasive species have the potential to invade burned areas. Since plants respond differently to varying levels of fire intensity, it is important from a managerial standpoint to determine which plants will survive and/or invade burned areas as well as determining which invasive plants are controlled by fire.

Response to fire: (Check all that apply)			
☐	**well adapted to fire**	☒	**numbers decline after fire**
☐	**top killed**	☐	**numbers increase after fire**
☐	**sprouts readily from rhizomes**	☐	**seeds survive in seed bed**
☒	**killed by high intensity fires**	☐	**seeds are dispersed easily in a burned area**
☒	**killed by low intensity fires**	☐	**seed dormancy broken by fire**
☐	**the presence of this plant can contribute to increased fire potential and/or intensity**		

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: See above			

Control Method Subrank: Section IV: Control Method Subrank

Method	Score	Method	Score
Mechanical	A	**Chemical**	A
Biological	UD	**Fire**	A

Section V. Management Effort

Management effort identifies management potential (investment in human and financial resources) and management activity (programs being presently conducted). For most statements, no particular control methods are specified but responses should relate to the methods that are most likely to be used (refer to section IV). Management potential considers feasibility, costs, and unavoidable non-target damage. Management activity identifies current programs being employed to suppress or eradicate this plant in public and private arenas.

V-A Management Potential

Documentation must be provided. Add all points from statements which are true for this plant and record the point at the bottom of this section.

Statement	Options	Points
Despite investigation, no legally permissible and effective herbicide treatments are available and cutting or mowing alone are not sufficient to eliminate this plant.	☐ **YES** **15 points**	
This plant is difficult to control without significant damage to native species because: it is widely dispersed throughout the sites (i.e., does not occur within discrete clumps nor monocultures); it is attached to native species (e.g., vine, epiphytes or parasite); or there is a native plant which is easily mistaken for this invader.	☐ **YES** **10 points**	
Total contractual costs of known control method per acre in first year, including access, personnel, equipment, and materials (any needed re-vegetation is not included) exceeds $2,000/acre (2002 estimated control costs are for acres with a 50% infestation).	☐ **YES** **5 points**	
Further site restoration is necessary following plant control to reverse ecosystem impacts and to restore the original habitat-type or to prevent immediate re-colonization of the invader.	☒ **YES** **5 points**	**5**
Following the first year of control of this species, it would be expected that individual sites would require re-survey or re-treatment, due to recruitment from persistent seeds, spores, or vegetative structures, or by dispersal from outside the site: (choose one)	☐ **multiple times per year (15 points)** ☐ **once a year for the next 5 years; (10 points)** ☒ **one to 4 times over the next 5 years; (6 points)** ☐ **regrowth not known. (2 points)**	**6**
Total Points		**11**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☐	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

(Comment on both the difficulty of control and on the extent of knowledge that exists regarding the management of this species. Please keep comments brief – do not go into detail on control methods):

Because removal of Norway maple from a site may entail removing a large proportion of existing plant biomass, drastic changes in site conditions and species composition may result. While such efforts will hopefully benefit native species, there is also substantial risk of facilitating invasion by other nonnative plant species. Removal of overstory Norway maple trees in a New Jersey forest dominated by Norway maple and sugar maple resulted in invasion by new or newly conspicuous nonnatives, including tree of heaven (Ailanthus altissima), Japanese barberry (Berberis thunbergii), winged burning bush (Euonymus alata), Japanese honeysuckle (Lonicera japonica), and garlic mustard (Alliaria petiolata). (Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Although removal of canopy trees appears effective as a restoration tool, other exotic species (especially Lonicera japonica, Allaria petiolata, and Robinia pseudoacacia) proliferated where tree removals opened the canopy. Restoring the pre-invasion community will thus require future intervention. (Webb, SL, Pendergast, TH and Dwyer, ME. 2001. Response of native and exotic maple seedling banks to removal of the exotic invasive Norway maple (Acer platanoides). Journal of the Torrey Botanical Society 128(2):141-149)

These results indicate that both the Cut+Triclopyr and the Weed Wrench methods achieved 100 % success in preventing live resprouts after two years. In practice, this means that neither method requires that sites be revisited to kill resprouts. The Cut treatment was significantly less effective, with 13 % of Cut trees still having live resprouts after two years. (McNair 2005)

Early observations showed that most Norway maples had resprouted and would require additional treatment to control. (results of manual/mechanical removal) (Webb, SL, Dwyer, M, Kaunzinger, CK, and Wyckoff, PH. 2000. The myth of the resilient forest: case study of the invasive Norway maple (Acer platanoides). Rhodora 102(911):332-354)

Contrary to the canopy removals that benefited sugar maple, the removal of Norway maple seedlings caused a significant pulse of new Norway maple recruitment. Where we removed the Norway maple seedling bank, new seedlings rapidly recolonized and partially replenished this seedling bank. . . Thus it appears that seed germination was promoted for Norway maple by soil disturbance. (Webb, SL,

Pendergast, TH and Dwyer, ME. 2001. Response of native and exotic maple seedling banks to removal of the exotic invasive Norway maple (Acer platanoides). Journal of the Torrey Botanical Society 128(2):141-149)

Based on observations on Mackinac Island, it appears that areas where frequent low intensity disturbance (e.g., mowing and/or brush clearing) has been removed should be monitored closely since A. platanoides saplings that have been released from repeated cutting resprout vigorously and may be able to capture the site and inhibit the colonization of native trees. (Webster, CR, Nelson, K and Wangen, SR. 2005. Stand dynamics of an insular population of an invasive tree, Acer platanoides. Forest Ecology and Management 208:85-99)

Management Potential Subrank: Section V-A Management Potential

Add the total points:	**Value**
< 15 = High potential for control **>=15 = Low potential for control** **Transfer information to the Management Effort Subrank**	**H**

V-B MANAGEMENT ACTIVITY

Given the current state of knowledge regarding control methods, are activities being employed to suppress or eradicate this plant in Michigan.	☒ **YES**	☐ **NO**

If yes please provide documentation on management efforts being used: method(s); agency(ies); location(s).

Public Lands		**Private Lands**	
☐	Federal (F):	☐	Non-profit organizations (O):
☒	State (S):	☐	Commercial (C):
☒	Municipal (M):	☐	Individual (I)

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☐	**Observational**
☒	**Other published material**	☒	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Trees are incidentially removal in State prgrams. City of Ann Arbor removes mature trees.

Management Activity Subrank: Section V-B Management Activity

Indicate whether management activities are being employed by a letter indicating the sector involved: federal (F), state (S), municipal (M), non-profit organization (O), commercial (C), individual (I).	Value
Transfer information to the Management Effort Subrank	H

Section V. Management Effort Subrank

	Value
Management Potential	H
Management Activity	S,M

Section VI. Value within Michigan

Value within Michigan indicates economic, aesthetic, erosion control, and wildlife habitat value. Value is designated either as high (H), low (L), or none (N) in each of the respective categories.

Does this plant have any value?	☒ **YES**	☐ **NO**
If response is **NO** then VI = N in the value subrank table If response is **YES** then go to Section VI-B		

VI-A. Factors that Indicate a Economic, Aesthetic, Erosion Control or Wildlife Habitat

Add the points from statements that are true for this plant. Please provide documentation on the size, scope, and extent of the use of the designated plant. Please provide state and federal statistics where applicable. Record the score in the table following this section.

Agriculture: Crops and Forage		
This plant constituents more than 10% of the crop on commercial farms producing and/or using this plant within the State.	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has provided a crop, forage, or seed source (e.g., forage, nectar) that has been or resulted in a source of commercial income within the state.	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has provided a crop, forage, or seed source (e.g., forage, nectar) that is used by the general public within the state	☐ **YES** **3 points**	☒ **NO** **0 points**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Horticulture (Fruit, Vegetable, Herbs, and Ornamentals)		
This plant constituents more than 10% of the crop produced or sold by commercial growers within the State	☒ **YES** **5 points**	☐ **NO** **0 points**
This plant has provided a crop, forage, and/or seed source that has been or resulted in a source of commercial income within the state	☒ **YES** **5 points**	☐ **NO** **0 points**
This plant has provided a crop, forage, or seed source (e.g., forage, nectar) that is used by the general public within the state	☒ **YES** **3 points**	☐ **NO** **0 points**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Michigan Department of Agriculture Crop Survey

Michigan Nursery and Landscape Association Buyers Guide

Turf (Sod, Golf Course, Commercial Turf (sport fields, schools, etc)		
This plant constituents more than 10% of the crop produced or sold by commercial growers within the state	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has provided turf, forage, and/or seed source that has been, or resulted in a source of commercial income within the state	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant contribute significantly to recreation and leisure activities	☐ **YES** **3 points**	☒ **NO** **0 points**
This plant is used in land development (public and private property)	☐ **YES** **3 points**	☒ **NO** **0 points**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☐	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level:			

Forestry (Wood, Pulp, Christmas Trees)		
This plant constituents more than 10% of the crop produced, managed, or sold by commercial forest/Christmas tree operations within the state	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has provided timber, pulp, plantations, seedlings/transplants, and/or seed orchards that has been or resulted in a source of commercial income for public and private forestry	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has value added wildlife and environmental benefits during production cycles within forest operations	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant has provided timber, plantations, seed orchard, or recreational uses by non-commercial property owners within the state	☐ **YES** **3 points**	☒ **NO** **0 points**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

Norway maple is used sparingly as a lumber species in Europe for veneer and for specialty items such as tool handles, gun stocks and violins. (Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Landscape (Public and Private)		
This plant is currently sold in national or regional retail stores, Michigan garden centers, horticultural distribution centers or by landscape contractors	☒ YES 5 points	☐ NO 0 points
This plant is used in residential and commercial landscapes	☒ YES 5 points	☐ NO 0 points
This plant is use in public landscapes	☒ YES 5 points	☐ NO 0 points

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**

Comments, supportive evidence, and explanation of documentation level:

A commonly planted shade and street tree. Sold in horticultural trade (Swearingen et al 2002; Dosmann and Del Tredici 2003). A commonly planted shade and street tree. (www.natureserve.org)

Norway maples are popular on the commercial ornamental tree market. (Shakespere, G. 2003. Introduced Species Summary Project: Norway Maple (Acer platanoides). Invasion Biology Introduced Species Summary Project – Columbia University.

http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/Acer_platanoides.html)

Erosion: Soil and Water Erosion		
This plant has been and/or is currently used in erosion control practices such as soil erosion, storm water management, phyto-remediation, bank stabilization, etc.	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant is specified and used by federal and state agencies in erosion control practices	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant is specified and used by private contractors in erosion control and/or habitat restoration	☐ **YES** **5 points**	☒ **NO** **0 points**
This plant provides value added benefits in wildlife conservation	☐ **YES** **3 points**	☒ **NO** **0 points**

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	**Reviewed scientific publication**	☒	**Observational**
☒	**Other published material**	☒	**Anecdotal**
Comments, supportive evidence, and explanation of documentation level: **No mention was made of the above uses in all the literature reviewed.**			

Wildlife: Food and Shelter		
This plant is currently used in wildlife management	☐ YES 5 points	☒ NO 0 points
This plant is specified or used by wildlife organizations in habitat restoration or feed plot establishment	☐ YES 5 points	☒ NO 0 points
This plant is specified and used by federal and state agencies in providing shelter and/or feed sources on public lands	☐ YES 5 points	☒ NO 0 points
This plant provides value added benefits in soil and water conservation	☐ YES 3 points	☒ NO 0 points

Level of Documentation

Place a check next to the most accurate category and briefly explain			
☐	Reviewed scientific publication	☒	Observational
☒	Other published material	☒	Anecdotal

Comments, supportive evidence, and explanation of documentation level:

There are no reports of the use of Norway maple by North American wildlife, as of this writing, but sugar maple and red maple are browsed by white-tailed deer, moose, and snowshoe hares. (Munger, GT. 2003. Acer platanoides. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2007, January 18])

Value Within Michigan Subrank: Section VI: Value within Michigan

Please total the points for each area and place them in the appropriate column.

Subrank	Agriculture	Horticulture	Turf	Forestry	Landscape	Erosion Control	Wildlife Habitat
	Crop and Forage	Fruit, Vegetable, Ornamentals	Sod, Golf Course, Commercial Turf	Wood, Pulp, Christmas Trees	Public and Private	Soil and Water	Food and Shelter
Points	0	13	0	0	15	0	0
Rating	0=N <5= L >8 =H	0=N <5= L >8 =H	0=N <5= L >10 =H	0=N <5= L >8 =H	0=N <5= L >10 =H	0=N <5= L >8 =H	0=N <5= L >8 =H

Section VII. Invasiveness Rank, MIPC Plan of Action, and Plant Summary Report

Section VII is for use by MIPC. The Invasive Plant Assessment Committee will use the information provided in Sections I-VI to establish an Invasiveness Rank (based on Potential Invasiveness and Impact for each systems within the four ecological regions), a MIPC Plan of Action, and a Plant Summary Report.

Potential Invasiveness

Potential Invasiveness is a based on biological characteristics that may predispose a plant to invasive behavior. Reproductive Ability (Seed and Vegetative) + Dispersal = Potential Invasiveness.

Determine a Reproductive Ability value for this plant using the table below and the scores from the Seed and Vegetative reproduction sections on Biological Character

Reproductive Ability

Table of Reproductive Ability Values

		Vegetative Reproduction			
		H	M	L	I
Seed Reproduction	H	H	H	H	H
	M	H	M	M	L
	L	H	M	L	L
	I	H	I	I	I

	Value
Enter the Reproductive Ability Value for this plant:	L

Use the Reproductive Ability Value and the Dispersal rating from Section 1. to determine the Potential Invasiveness Value for this plant from the table below.

Potential Invasiveness

Table of Potential Invasiveness Values

		Dispersal			
		H	M	L	I
Reproductive Ability	H	H	H	M	M
	M	H	M	M	L
	L	M	M	L	L
	I	I	I	I	I

	Value
Enter the Potential Invasiveness Value for this plant:	L

Invasiveness Rank is a function of Potential Invasiveness and Impact. Impact is the expression of potential invasiveness under a given set of environmental conditions within a system (Natural System, Forest Production, Constructed Habitats, Ag/Hort/Turf Production, and Urban and Suburban Landscapes). Impact may vary among or within ecological regions. A plant's impact may occur over a broad set of environmental conditions (temperature, light, water) or be limited by one or more factors specific to a system or ecological region.

Table of Invasiveness Rank

		Impact			
		H	M	L	I
Potential Invasiveness	H	H	H	M	M
	M	H	M	M	L
	L	M	M	L	L
	I	I	I	I	I

Invasiveness Rank

Determine the Invasiveness rank for each system:	Value
Natural System	M
Forest Production	M
Ag/Hort/Turf Production	L
Constructed Habitats	M
Urban and Suburban Landscapes	M

Regional Importance

Distribution establishes the regional importance of a plant's impact on Michigan's natural, production, managed, and constructed systems. Use Invasiveness rank for each system and the Regional Impact rating for each ecological region from Section III. to determine regional importance. Regional importance is recorded as: high (H); medium (M); and low (L); and Insignificant (I)

Conversion table for determining Regional Importance

		Regional Impact			
		N	W	L	I
Invasiveness Rank	H	H	H	M	I
	M	H	M	M	I
	L	M	M	L	I
	I	I	I	I	I

Regional Importance

Regional Importance in five system types in each of four ecological regions.

Record the Invasiveness Rank for each system within each ecological region below.		System Type				
		Natural	Constructed Habitats	Managed Forests	Suburban/ Urban	Ag/Hort/ Turf
Ecological Region	WUP	I	I	I	I	I
	EUP	I	I	I	I	I
	NLP	I	I	I	I	I
	SLP	M	M	M	M	L

This information will aid in assessing and determining the overall MIPC Plan of Action.

MIPC Plan of Action

MIPC Plan of Action is based on the information obtained through this assessment. The Plan of Action is develop by the MIPC Invasive Plant Assessment Committee for review and endorsement of the MIPC Board of Directors. The Plan of Action outlines recommendation that may include one or all of the following: Education; Suppression; Restoration; and Elimination.

References

References	

Form Updated: 2/3/09