

Saint Paul Garden Club - 2017

***Don't Hate Me for Not
Recommending that Tree!***

Online Notes

trees.umn.edu

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“Gary’s Notes”

then

“Don’t Hate Me _St Paul
Garden Club 2017”

Enough Already

Maples: *Norway, Sugar, Freeman*

Elms: *Especially Princeton, Valley Forge, Cathedral Elm*

*Colorado Spruce

Crabapples

Green Ash

**Overplanted on Private Landscapes*

There are too many of them in the parks, on the streets and in the yards. The term “too many” is more a reference to the vulnerability of a landscape to one biotic causal agent moving in and sweeping out an unacceptably high percentage of the overall tree population as in the case of maples and Asian Long-horned Beetle, elms and Dutch elm disease, ash and emerald ash borer.



It's easy to see why maples are over planted, but there are other trees with gorgeous autumn foliage. Consider ginkgo, red oak, tamarack, birches, ironwood, musclewood in lieu of so many maples.



The American elm cultivated varieties that show some resistance to Dutch elm disease have become popular for their fast growth rate. However, if you can't prune those trees annually for the first 15 years, this is what they will look like after a wind or ice storm. The American elm varieties that are the most demanding of all the elms and the most unforgiving of those that choose not to prune them every year. The Asiatic elm varieties, such as Accolade, are much better built and rarely have this kind of problem.

Enough Already

*Arborvitae: *Especially Techny*

**Littleleaf Lindens

Japanese Tree Lilac

**Overplanted on Private Landscapes*

***Overplanted on Boulevards*

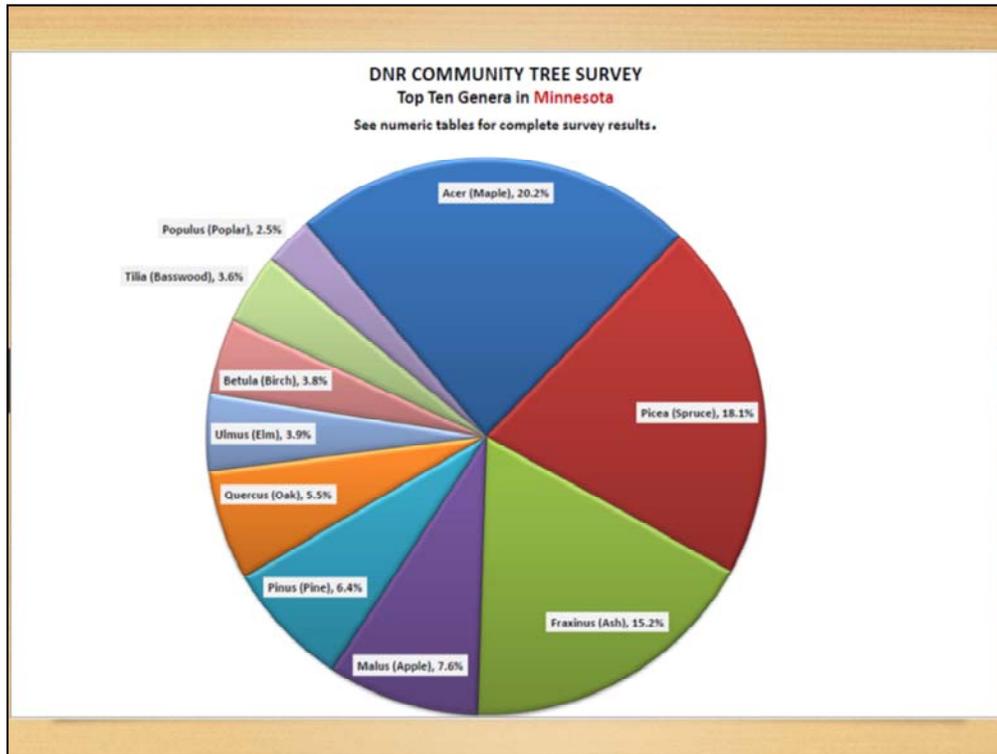
There are too many of them in the parks, on the streets and in the yards. The term “too many” is more a reference to the vulnerability of a landscape to one biotic causal agent moving in and sweeping out an unacceptably high percentage of the overall tree population. Arborvitae, especially the variety ‘Techny’ is overplanted in private landscapes, whereas littleleaf linden is reasonably represented in residential landscapes but way overplanted on boulevards.



Littleleaf lindens are valued for their uniform form, but in many situations they have become over planted. In this scene, with the exception of one residential tree – Colorado spruce - everything is either littleleaf linden or green ash.



Looking down the length of two city blocks in this community, only one tree is not a green ash. When emerald ash borer visits this community, unless this neighborhood aggressively controls the borer, almost all shade in this neighborhood will be lost.



In 2010, the Minnesota Department of Natural Resources published the results of their rapid assessments of the urban forests for every community in the state. These assessments included boulevard, ROW and front-yard trees. Note that maples, spruce, ash and crabapples made up more than 60% of all urban landscapes in Minnesota. Biotic causal agents tend to be a problem on specific genera, like oak wilt, emerald ash borer and Dutch elm disease..



Evergreen trees tend to dominate parks, commercial and residential landscapes more so than boulevards or areas where sight-lines are issues. The health of an evergreen tree depends on keeping its foliage low to the ground. Having said that, foliage low to the ground is what causes the blocked sight-lines, and therefore restricts their use as boulevard trees.

Species that Help Diversify

Carpinus - Blue Beech/Musclewood
Cercidiphyllum - Katsura Tree
Gymnocladus - KY Coffeetree
Ginkgo – “Silver Apricot”
Taxodium - Bald Cypress
Larix - The Larch, Tamarack
Maackia - Amur Maackia
Corktree – (Male) Amur or Sakhalin Corktree

So, what would be some species that would genetically diversify Minnesota urban forests? Try to consider trees beyond their homeland or the perception that they are “messy” since messy is only a personal perspective. Of the trees on this list, the best trees in terms of the fewest insect or disease problems, are the trees that many people discount because they falsely label them as “messy,” to wit: Coffeetree and Ginkgo. All of these trees represent a unique genus and botanical family...those genetics are what most commonly are the tools for diversifying a landscape.



Katsura tree in summer and autumn foliage, typical form from young tree to mature tree. In Minnesota, anticipate a 25-35 foot tall tree, depending on exposure to light and wind. This will become one of the more important, climatic adaptive trees for southern Minnesota (where we live).



Amur maackia showing unique bark color and texture. Very cold hardy so it can be used anywhere in the state. Another 25-ish foot tall tree. It's also in the legume family which makes it a good choice for less than fertile soils. Note the silver-blue color of its new foliage.

Poor Urbanized-Site Performers

Sugar Maple

Silver Maple (*high pH soils*)

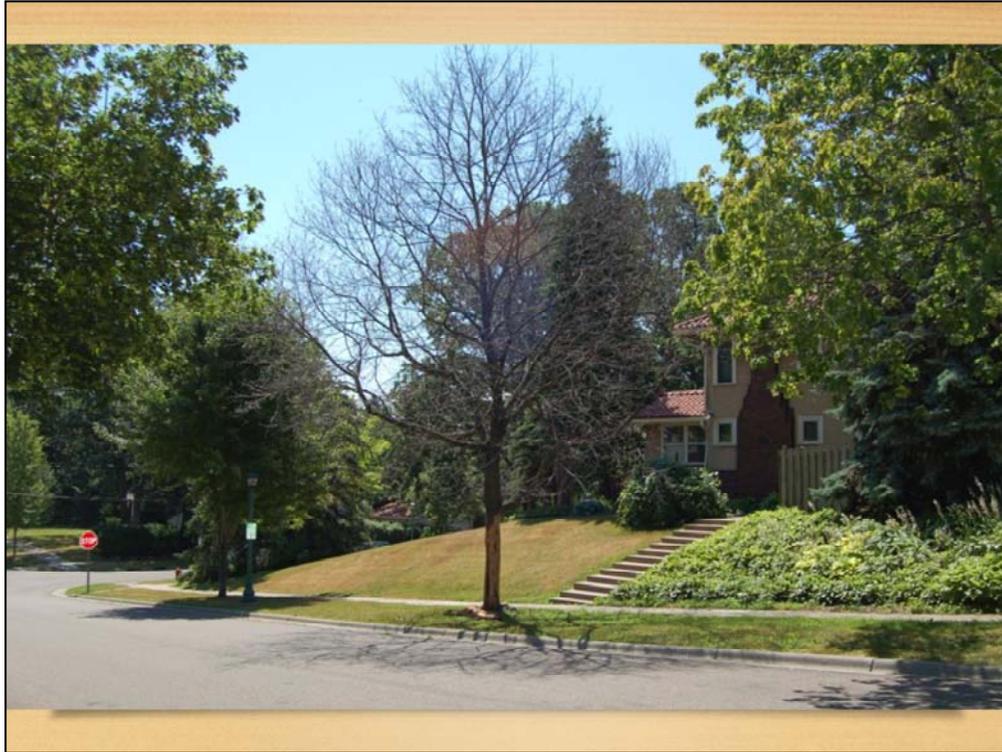
White Barked Birches (*except for high pH soils*)

Northern Red Oak (*alkaline, compacted clay*)

Quaking Aspen (*compacted clay, poorly drained*)

Ironwood (*poorly drained, deicing salt sites*)

These just haven't been performing well, either lately or for a long time (urban-site challenged). There is nothing specifically written behind the sugar maple mostly because just about everything in the urban landscape is tough going for a healthy sugar maple. These are all forest trees, therefore, they require a more stable, forest soil to do well. The exception would be quaking aspen, which can grow and thrive literally in a pile of rocks at the bottom of a mountain.



Not an uncommon scene for the last days of a sugar maple in urban MN.

Site-Tolerant Species

Honeylocust - *'Northern Acclaim'*

KY Coffeetree - *'Espresso'* and *'True North'*

Ginkgo - *'Autumn Gold'* or *'Windover Gold'*

River Birch - *'Heritage'* or *'Dura Heat'*

Oaks: *Bicolor Oak*, *Bur*, *Shingle*, *Chinquapin*

Turkish Filbert: *Corylus colurna*

Hardy Rubbertree: *Eucommia*

What are some site-tolerant trees? That 'True North' coffeetree is a UMN introduction, and is male, like 'Espresso,' which means it has no fruit. All of these trees have the potential to perform well in southern MN as the climate gets more hostile for forest-type trees. Turkish filbert and hardy rubbertree are not native.



Turkish filbert – *Corylus colurna*

Adaptable, medium-sized tree. Good alternative to littleleaf linden and/or Boulevard American linden



Hardy rubbertree – *Eucommia ulmoides*

Resilient small tree from China

Dr. John Ball's "5% Solution" Very heat/drought-tolerant. Looks so much like an elm...except it doesn't die from Dutch elm disease or rip apart in wind storms.

A Lot of Maintenance When Young

Freeman Maples: *'Autumn Blaze'*

Elms: *'Princeton'* *'Valley Forge'* *'Cathedral'*

Crabapples

Eastern Redbud

Littleleaf Linden

Good grief, they take a lot of maintenance, mostly in the form of annual pruning! Too many of the crabapples sucker like crazy and get fungal leaf diseases.



And if you don't give them the care they need, this is the kind of result to expect. Pretty typical wind storm damage to an 'Autumn Blaze' maple that didn't have adequate and timely pruning – removal of weakly-attached branches.

A Lot of Maintenance When Young

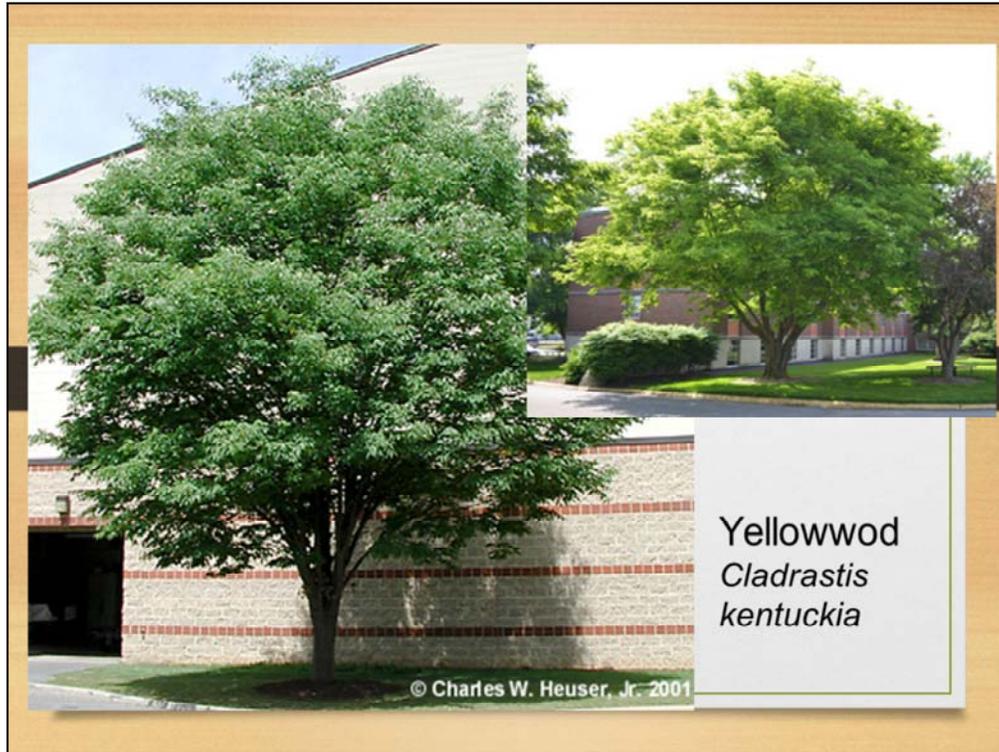
Zelkova

Yellowwood - *Cladrastis*

Boxelder

Silver Maple

All of these trees are good trees, but all are notorious for having poorly-attached branches and leaders. If they're not removed when the trees are young, they tend to suffer excessively during wind storms.



Yellowwood is an excellent tree but it become decurrent (multi-stemmed) far too close to the ground. Like Maackia, it's a legume, so does well on poor soils where other trees may suffer.



'Autumn blaze' in nursery-language means high maintenance

Lower Maintenance Species

Silver Maple: *'Silver Cloud'*

Ironwood - *Ostrya*

Catalpa

Cucumbertree Magnolia

Shagbark Hickory

Okay, what are some lower-maintenance trees? Any of these. Few health problems, much less pruning/maintenance required. All of these trees are native to the upper Midwest.



Zelkova has the same problem as yellowwood, but it's a nice medium-sized tree for most landscapes and with regular pruning when it is young (less than 15 years old), it turns out to be a nice, strong tree.

Lower Maintenance Species

Northern Pin Oak

Korean & Showy Mountain-ash - *Sorbus*

Ponderosa Pine

Jefferson American Elm

All of these trees are lower maintenance in terms of disease, insect and lousy growing site pressures. They all do well in southern MN (where we live).



Absolutely beautiful tree for Minnesota. Once you see one, you'll want it for your landscape.



Showy Mountain-ash

'Jefferson' Elm

Young Showy Mountain-ash (left) Jefferson American elm (right)

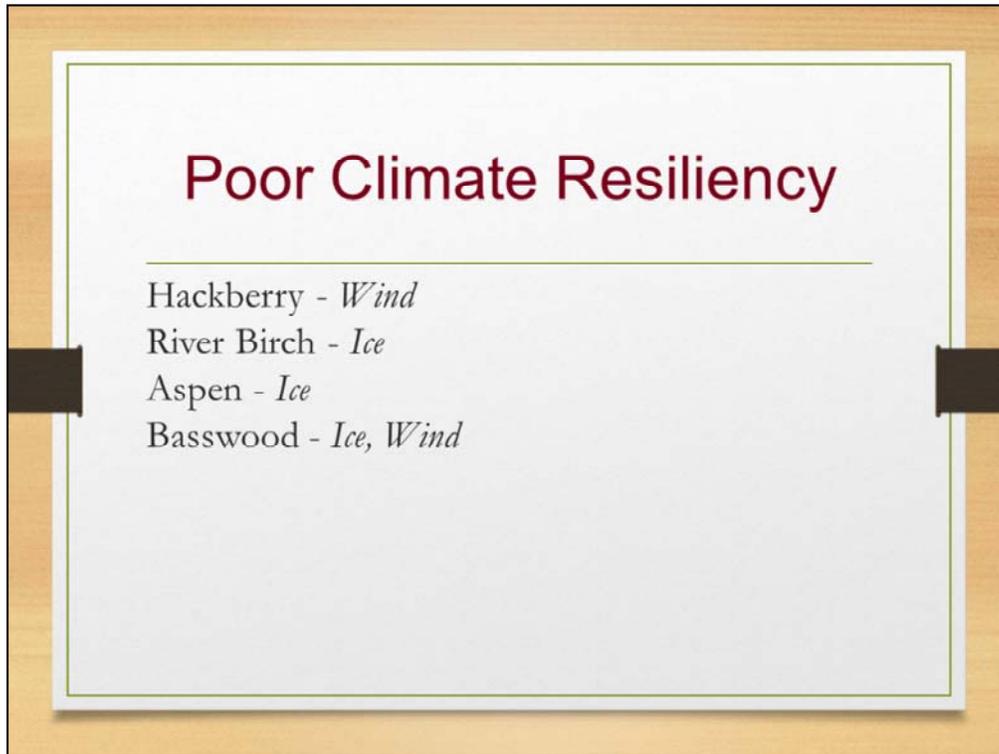
Poor Climate Resiliency

Paper Birch - *Chronic Drought, Heat*
Sugar Maple - *Chronic Drought, Heat*
White Pine - *Chronic Drought, Ice, Snow*
Colorado Spruce - *Chronic Drought, Wind*
Silver Maple - *Wind, Ice*
Eastern Pin Oak - *Alkalinity, Heat, Drought*

All but Colorado spruce are forest trees, requiring a more stable above and below-ground environment to do well. They (genetically) just don't adjust to change very well. Forest trees are the least able to adjust to a changing climate due to their reliance on a stable (temperature, moisture, exposure) environment.



Eastern pin oak, *Quercus palustris*, is a notoriously poor performer on droughty and alkaline soils. Note the extreme chlorosis (leaf yellowing from a break down of chlorophyll a) on these declining pin oaks.



I don't know, they don't seem to be very climate-resilient, especially ice and wind-loading events.

Littleleaf linden = #1 tree in boulevard failures (Stem girdling roots cause most of the failures)

American linden = #2 for trunk failure at points of decay

Tilia genus = most likely to fail due to root damage due to sidewalk repair

Hackberry = #1 for trunk failure at points of decay (80% of trunk failures for 11 years)

Species with Good Resiliency

American Elm - *Chronic Drought, Wind*

Catalpa - *Chronic Drought, Wind, Ice, Snow*

Black Maple - *Seasonal Drought, Ice, Snow*

Regal Prince Oak - *Seasonal Drought, Wind, Snow*

Ginkgo - *Drought, Wind, Ice, Snow*

Bur Oak - *Drought, Wind, Ice, Snow*

Baldcypress - *Ice, Snow*

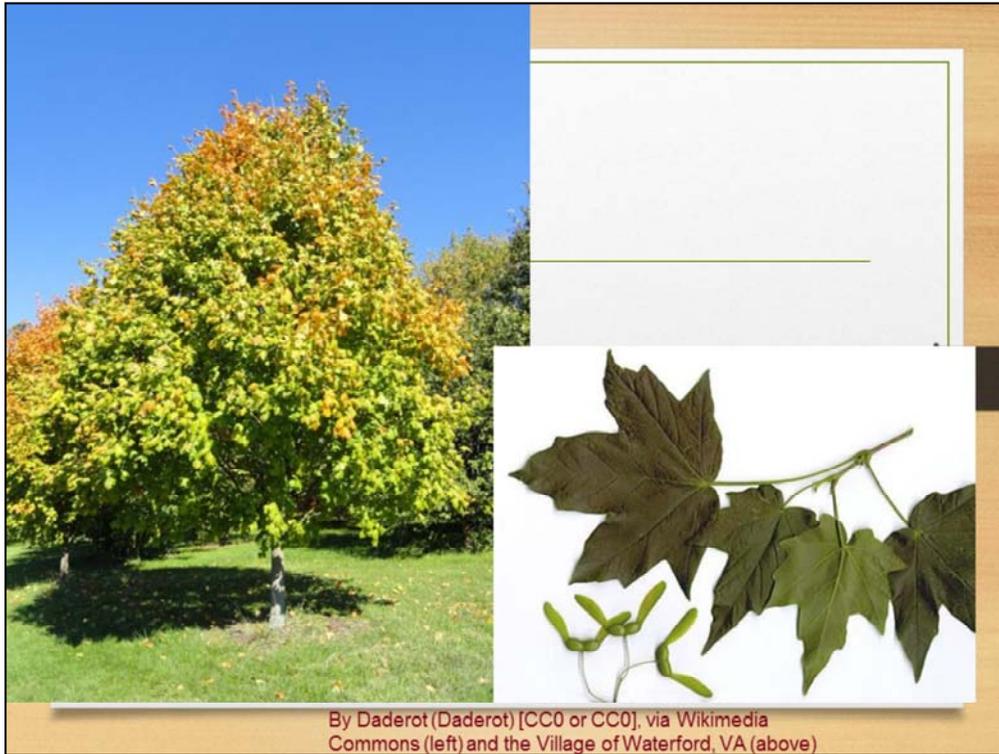
What are the worst? What are the best?



St. Croix elm (left), Prairie Expedition (right)



Regal Prince oak, Catalpa, Regal Prince foliage (close-up). Regal prince is an English x bicolor oak cross and selection.



By Daderot (Daderot) [CC0 or CC0], via Wikimedia Commons (left) and the Village of Waterford, VA (above)

Black maple, a sub species of sugar maple. This maple doesn't have the beautiful fall color of sugar maple but is more likely to grow well in our climate as we get hotter and drier. You'll see this tree used commonly in Iowa as a boulevard tree. Native to MN.

They're Sick Far Too Often

Sugar Maple - *General Decline*

Eastern Pin Oak - *Iron Chlorosis, Scale*

Balsam Fir - *Heat*

Austrian Pine - *Tip Blight*

Crabapples - *Scab, Fireblight*

They're always sick and likely to get sicker. Too much work to be worth it.

They're Sick Far Too Often

Colorado Spruce - *Needlecast, Canker*

American Elm - *DED, Leaf Beetles*

Black, Green, White Ash - *EAB*

Northern Red Oak - *Oak Wilt, Spider Mites*

They're always sick and likely to get sicker.



Spider Mite leaf bronzing on heat/drought-stressed red oak. This is a pretty common problem, but it rarely if ever kills the tree.



Austrian pine tip blight. Different story. This fungal disease has become a real problem on Austrian pines in southern MN in the recent past and has killed trees....slowly but surely.

Species with Fewer Pest & Pathogen Problems

Serviceberry
White Oak - *Quercus alba*
Larch
Baldcypress
Black Hills Spruce
Ginkgo

Those that are less vulnerable.



Windover Gold Ginkgo. Male, more contained growth habit. Hardy to southern third of MN. Spectacular in autumn. Ginkgo to lower right is a species, male.

Species with Fewer Pest & Pathogen Problems

River Birch

Osage Orange

Silver Linden - *Tilia tomentosa*

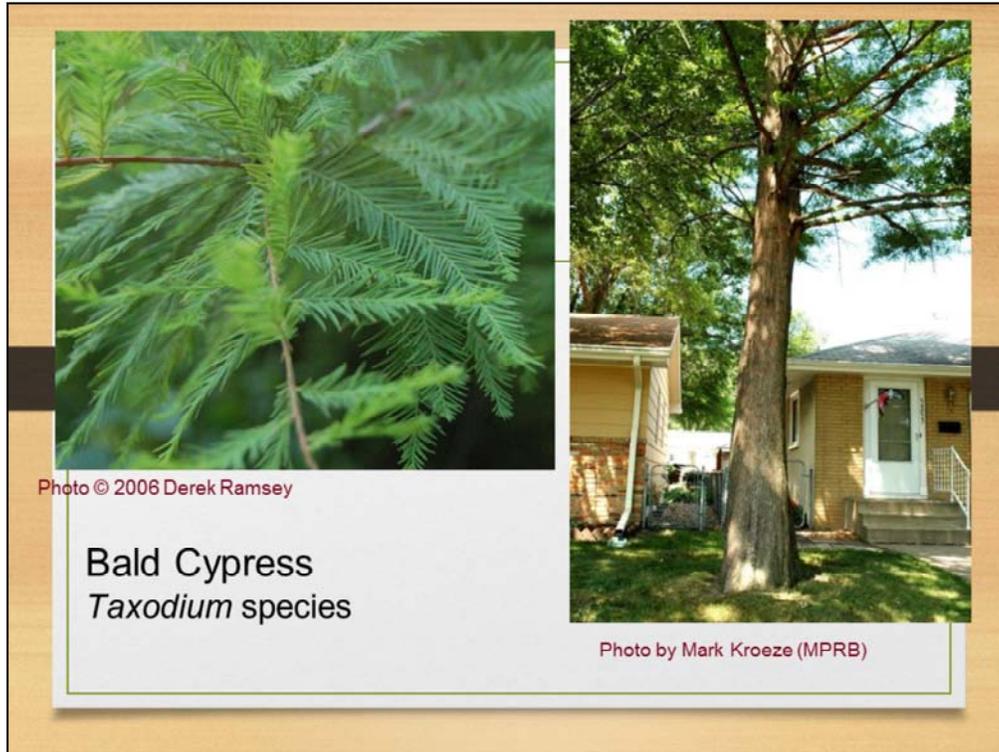
Amur Corktree: 'Eyestopper'

Cottonwood: 'Skyfest'

Those that are less vulnerable.



Osage seedling (UMN) and hedge balls (from IA)



Baldcypress foliage (left) and MPRB Heritage Tree (right) on Upton Ave. N in Minneapolis



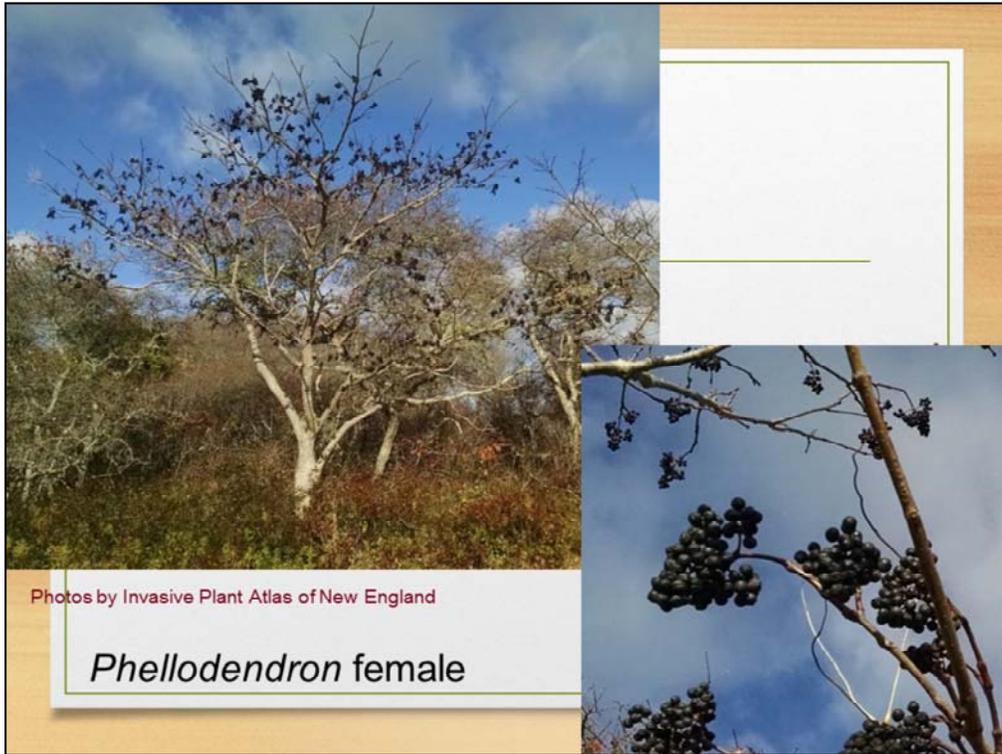
Skyfest Cottonwood (left) Sterling Silver Linden (right). Both are tough, climatic-adaptive trees. Cottonwood does grow fast. Skyfest is a male cultivar.

Invasive & Aggressive Species

Ussurian Pear
Bradford Pear
Boxelder
Green Ash
Amur Maple
Siberian Elm

Corktree - *Females*
Norway Maple
American Elm
Hackberry
Silver Maple
KY Coffeetree - *Females*

They're mighty invasive or aggressive, which means they tend to displace other, sometime more desirable species. Half of these trees are native to the upper Midwest.



Female Corktree. Very invasive so do not plant it.

