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Elms for North Dakota

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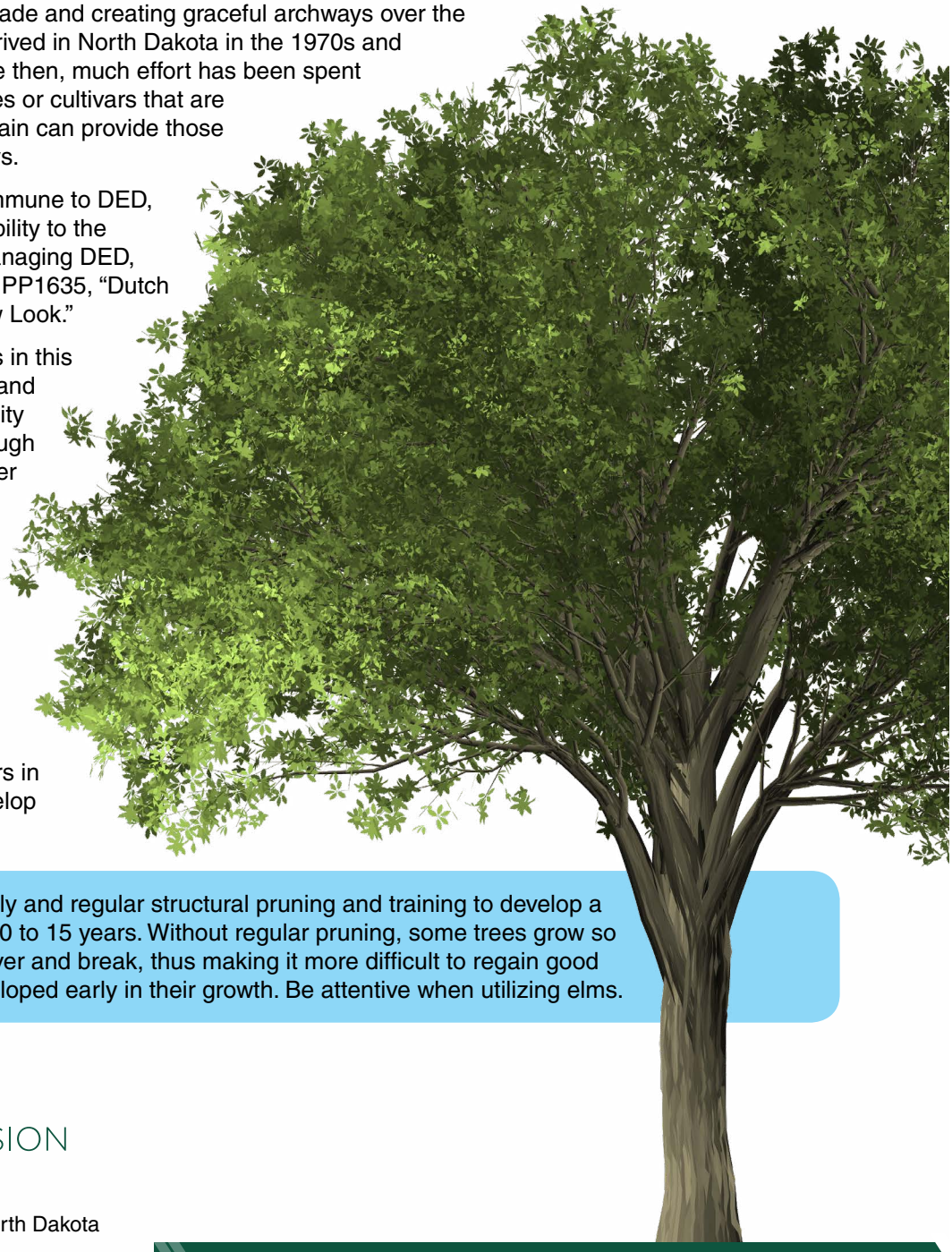
In many North Dakota communities, American elm trees once were abundant, providing large amounts of ample shade and creating graceful archways over the streets. Dutch elm disease (DED) arrived in North Dakota in the 1970s and began to destroy this resource. Since then, much effort has been spent on identifying and testing new species or cultivars that are resistant to the disease and once again can provide those magnificent views down the roadways.

While no elm species or cultivar is immune to DED, elms have varying levels of susceptibility to the disease. For more information on managing DED, refer to NDSU Extension publication PP1635, "Dutch Elm Disease in North Dakota: A New Look."

Recommended species and cultivars in this publication are generally cold hardy and have shown relatively low susceptibility to DED in research trials and/or through years of field experience. Some newer cultivars have not been tested adequately in North Dakota and they are noted below. North Dakota has two sites that are part of the National Elm Trial (http://bspm.agsci.colostate.edu/national-elm-trial/).

Unless otherwise noted, the mature form of elms listed here is vase-shaped. Typical fall foliage is yellow unless listed otherwise; in some years in North Dakota, fall color may not develop on elms.



The majority of elm trees need early and regular structural pruning and training to develop a single lower trunk during the first 10 to 15 years. Without regular pruning, some trees grow so fast that the main leader can fall over and break, thus making it more difficult to regain good structure that may have been developed early in their growth. Be attentive when utilizing elms.

NDSU EXTENSION

North Dakota State University, Fargo, North Dakota

October 2018

American Elm (*Ulmus americana*)

Fully Recommended

- Prairie Expedition® (‘Lewis & Clark’) – A cold-hardy American elm that grows up to 4 feet per year. This cultivar has high DED resistance; the original tree was a survivor of the first wave of DED to come through North Dakota. **NDSU release**.
- ‘Princeton’ – A fully hardy and highly DED-resistant selection of American elm. ‘Princeton’ has a very upright form; managers have some concern about branch angles being too acute. However, this cultivar is easy to train when it is young.
- ‘Valley Forge’ – This cultivar also is fully hardy and very DED resistant, but the branch attachments may be weaker than desired. Also, some trees’ growth has been so vigorous that the central leader became top-heavy and fell over, resulting in a lopsided or unsymmetrical crown.

Partially Recommended

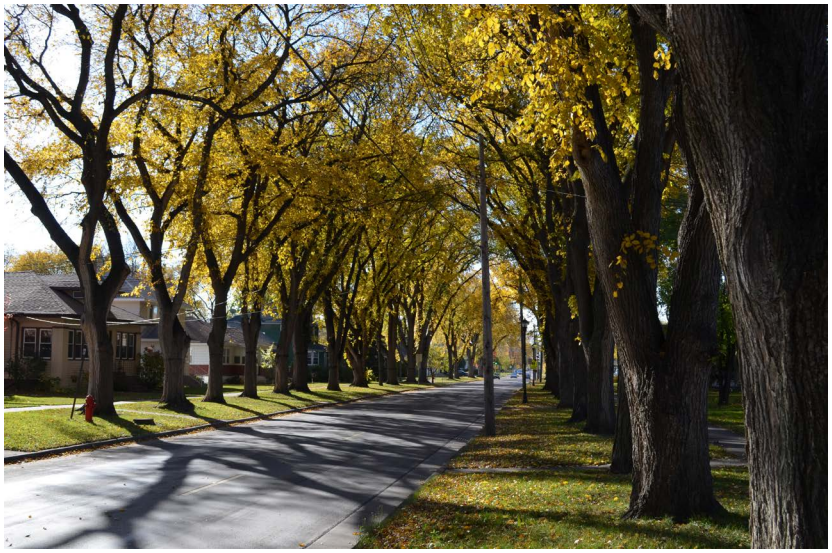
The following cultivars have received relatively little testing in North Dakota. They have high resistance to DED and are likely hardy enough to survive North Dakota winters. Further testing and experience may allow us to move these into the Fully Recommended category.

- Colonial Spirit® (‘JFS-Prince II’)
- ‘Jefferson’
- ‘New Harmony’
- ‘St. Croix’ – Originated in southeastern Minnesota

Not Recommended

The following cultivars are not recommended for North Dakota due to their poor resistance to DED and/or lack of cold hardiness.

- ‘American Liberty’
- ‘Brandon’
- ‘Independence’
- ‘Minneapolis Park’
- Washington
- American elm – seedling origin



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Hybrid Elms

A large number of hybrids have been developed utilizing Asian and European elm species as parents. Hardiness, growth characteristics and pest resistance are highly variable. While our list is not exhaustive, these cultivars are most likely to be seen in the nursery industry in this region.

Fully Recommended

- Accolade™ (‘Morton’) – A large, hardy tree that will do well in North Dakota. In one trial, it scored midrange in terms of survival, growth and natural structure; it may have codominant stems that will need pruning when young. Leaves are dark like American elm but smaller. Overall tree form similar to American elm.
- ‘Cathedral’ – A very fast-growing tree that requires annual pruning for the first 10 years to develop good structure. The long branches give young trees a somewhat weeping form. Only moderately resistant to DED.
- Commendation™ (‘Morton Stalwart’) – A somewhat upright tree, but the overall form is more oval than vase-shaped. Leaves are relatively large and fall color is a muted yellow. A good tree, but scored midrange in North Dakota trials. Likely lower maintenance than Accolade™ or ‘Cathedral’ elm.
- Danada Charm™ (‘Morton Red Tip’) – Somewhat upright tree with fast growth. Has performed extremely well in trials in Bismarck and Fargo. Emerging new growth has a reddish tinge.
- ‘New Horizon’ – A medium tree with slightly arching branches, upright oval form and dark green leaves. Fall color is yellowish brown and develops later than other cultivars. One of the better elm trees in NDSU trials, tolerating very dry conditions in one central North Dakota site. May suffer some damage from foliage-feeding insects.
- Triumph™ (‘Morton Glossy’) – Outstanding tree for much of North Dakota. Shiny, attractive dark green foliage. Somewhat upright form.

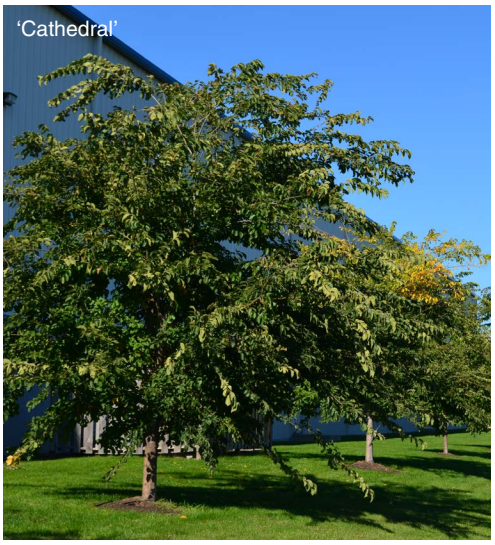
Partially Recommended

- ‘Patriot’ – While this tree has proven to be cold hardy, it has been midrange in other characteristics, and sometimes can have a large amount of damage from foliage-feeding insects.
- ‘Pioneer’ – A medium to large tree with a dense, rounded crown. Generally considered hardy to Zone 5, ‘Pioneer’ has shown mixed results in North Dakota trials, with survival ranging from 0 to 100 percent at three sites.
- Vanguard™ (’Morton Plainsman’) – Definitely a hardy cultivar but has proved to be midrange in growth, pest-resistance and ornamental characteristics. Upright form.

Not Recommended

The following cultivars are not recommended because of hardiness problems, wildlife issues and/or high amounts of damage from foliage-feeding insects.

- ‘Frontier’
- ‘Homestead’
- ‘Lincoln’
- ‘Prospector’
- ‘Regal’



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Japanese Elm
(*Ulmus davidiana* var. *japonica*)

In Asia, Japanese elm has a very large native range. Northern seed sources generally have done well in North Dakota. However, if you do not know the seed source of the tree, or if it is not one of the recommended cultivars listed below, be cautious.

Fully Recommended

- 'Discovery' – A very slow-growing tree with a very dense crown and many fine branches. Highly resistant to DED.
- 'Freedom' – This cultivar was selected in Manitoba and is very cold hardy. Mature trees achieve a compact mushroom-shaped form. Fall foliage gets a red/purple tinge. May be difficult to find in the nursery industry.
- Northern Empress® ('Burgundy Glow') – A small to medium-sized tree with a rounded crown, open branching and attractive foliage. Fall foliage changes from green to apricot-orange to burgundy red before leaf drop. First availability in retail nurseries in 2021. **NDSU release**.

Partially Recommended

- Greenstone™ ('JFS KW2UD') – A new release that has not been tested in North Dakota. However, Greenstone™ was selected from a northern seed source. Has the upright, vase-shaped form of the American elm, although a shorter mature height.
- 'Night Rider' – A new release that has not been tested in North Dakota, although it is being sold in Manitoba, Canada. Purple fall color.

Not Recommended

- Emerald Sunshine® ('JFS-Bieberich') – Lacking sufficient cold hardiness for North Dakota.

Siberian Elm (*Ulmus pumila*)

Siberian elm has been used mostly in shelterbelts, especially since the 1950s, and often is found in North Dakota communities. It is cold hardy and highly drought tolerant but has a lifespan of only 40 to 60 years. While relatively resistant to DED, this species is sensitive to damage from broadleaf herbicides and is susceptible to black-spot Nectria canker (formerly Tubercularia canker).

Note: Siberian elm (*Ulmus pumila*) sometimes is referred to as Chinese elm. However, another species known as lacebark elm (*Ulmus parvifolia*) also sometimes is called Chinese elm. To be clear, Siberian elm (*Ulmus pumila*) is hardy in North Dakota; lacebark elm (*Ulmus parvifolia*) should not be considered to be adapted to North Dakota conditions.


'Freedom'


Northern Empress®


'Discovery'


'Discovery'

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For more information on this and other topics, see www.ag.ndsu.edu