National Elm Trial
Bismarck, North Dakota

• Established: 2005, with replacement trees or additional cultivars added in each year 2006 to 2009.
• Located on in Bismarck, ND.
• 22 elm cultivars were planted
• All Alee, Dynasty, New Harmony and Princeton trees died within 2 years, so were considered “not established.”
• Growing site conditions were severe due to periodic damage from severe drought, weed competition, tillage, rabbit girdling, hail, and a tornado.
National Elm Trial
Bismarck, North Dakota Location

• The public may view the elms, but arrangement for access through locked gate is via the Bismarck Director of Service Operations (http://www.bismarcknd.gov/index.aspx?nid=96).

• The trees are located on the south side of Bismarck Landfill (2111 N 52nd St) along 17th Ave. NE, starting east of 66th St. NE.

• Plot will be removed pending funding of a state facility.
Bismarck Elms planted in June 2005
<table>
<thead>
<tr>
<th>Block 5 from east (Cv &amp; Yr last planted)</th>
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<tbody>
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- **Bismarck NET plot map**

- **East end**

- **driveway**

\[= \text{Dead tree as of October 29, 2014}\]
National Elm Trial
North Dakota Contacts

Dr. Jim Walla
• NorthernTrees@outlook.com
• (701) 235-5454
• Fargo, ND

Aaron Bergdahl
• Forest Health Specialist
• North Dakota Forest Service
• Aaron.D.Bergdahl@ndsu.edu
• (701) 231-5138
• NDSU Dept 7650
• PO Box 6050
• Fargo, ND 58108
Rating Notes on Bismarck, ND Elms

• The performance of each tree was rated based on a combination of health, vigor, and crown form. Rating scale: Excellent - 5 points; Very good - 4 points; Good - 3 points; Fair - 2 points; Poor - 1 point; Dead - 0 points.

• Tree performance was based on trees that established, whether or not they were alive in 2014.

• Height, crown width (CW), and diameter breast height (dbh) growth rates were the average of trees that established.

• Crown shape was based on trees that were alive in 2014.
‘Emerald Sunshine’ ® (*Ulmus propinqua*)

Date: Fall 2014
Survival: 75%
Performance rating: 0.3
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): 0.2
Height (m): N/A
Height growth rate (cm/yr): 1.5
Crown shape: oval
Crown width (m): N/A
Crown width growth rate (cm/yr): 6.4
Insects: N/A
Disease: N/A

‘Princeton’ (*Ulmus americana*)

Date: Fall 2014
Survival: 0%
Performance rating: 
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): N/A
Height (m): N/A
Height growth rate (cm/yr): N/A
Crown shape: N/A
Crown width (m): N/A
Crown width growth rate (cm/yr): N/A
Insects: N/A
Disease: N/A

No pictures available

No picture available since no trees established
‘Frontier’ (*Ulmus carpinifolia X U. parvifolia*)

Date: Fall 2014
Survival: 50%
Performance rating: 0.5
Diameter at 1.4m (cm): N/A
Diameter growth rate(cm/yr): 0.1
Height (m): N/A
Height growth rate(cm/yr): 2.1
Crown shape: Oval
Crown width (m): N/A
Crown width growth rate(cm/yr): 0.0
Insects: N/A
Disease: N/A

‘Homestead’ (*U. glabra X U. carpinifolia X U. pumila*)

Date: Fall 2014 Pictures 2015
Survival: 80%
Performance rating: 1.5
Diameter at 1.4m (cm): N/A
Diameter growth rate(cm/yr): 0.7
Height (m): N/A
Height growth rate(cm/yr): 7.6
Crown shape: Vase (oval)
Crown width (m): N/A
Crown width growth rate(cm/yr): 19.2
Insects: N/A
Disease: N/A
‘Morton Glossy’ Triumph™ *(U. pumila X U. japonica X U. wilsoniana)*

- Date: Fall 2014/Pictures 2015
- Survival: 100%
- Performance rating: 5.0
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): 0.9
- Height (m): N/A
- Height growth rate (cm/yr): 24.4
- Crown shape: Vase
- Crown width (m): N/A
- Crown width growth rate (cm/yr): 29.0
- Insects: N/A
- Disease: N/A

‘Morton Plainsman’ Vanguard™ *(U. pumila X U. japonica)*

- Date: Fall 2014/Pictures 2015
- Survival: 80%
- Performance rating: 4.0
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): 1.3
- Height (m): N/A
- Height growth rate (cm/yr): 37.2
- Crown shape: Vase
- Crown width (m): N/A
- Crown width growth rate (cm/yr): 44.2
- Insects: N/A
- Disease: N/A
‘Morton Red Tip’ Danada Charm™ (*U. japonica* X *U. wilsoniana*)

- **Date:** Fall 2014/Pictures 2015
- **Survival:** 100%
- **Performance rating:** 5.0
- **Diameter at 1.4m (cm):** N/A
- **Diameter growth rate (cm/yr):** 1.3
- **Height (m):** N/A
- **Height growth rate (cm/yr):** 33.8
- **Crown shape:** Vase
- **Crown width (m):** N/A
- **Crown width growth rate (cm/yr):** 41.8
- **Insects:** N/A
- **Disease:** N/A

‘Morton Stalwart’ Commendation™ (*U. carpinifolia* X *U. pumila* X *U. wilsoniana*)

- **Date:** Fall 2014/Pictures 2015
- **Survival:** 100%
- **Performance rating:** 3.4
- **Diameter at 1.4m (cm):** N/A
- **Diameter growth rate (cm/yr):** 0.9
- **Height (m):** N/A
- **Height growth rate (cm/yr):** 18.2
- **Crown shape:** Oval (Vase)
- **Crown width (m):** N/A
- **Crown width growth rate (cm/yr):** 33.2
- **Insects:** N/A
- **Disease:** N/A
‘Morton’ Accolade ® (*U. japonica X U. wilsoniana*)

- **Date**: Fall 2014/Pictures 2015
- **Survival**: 60%
- **Performance Rating**: 3.0
- **Diameter at 1.4m (cm)**: N/A
- **Diameter growth rate (cm/yr)**: 0.9
- **Height (m)**: N/A
- **Height growth rate (cm/yr)**: 25.3
- **Crown shape**: Oval (Vase)
- **Crown width (m)**: N/A
- **Crown width growth rate (cm/yr)**: 55.2
- **Insects**: N/A
- **Disease**: N/A

‘New Horizon’ (*U. pumila X U. japonica*)

- **Date**: Fall 2014/Pictures 2015
- **Survival**: 100%
- **Performance rating**: 5.0
- **Diameter at 1.4m (cm)**: N/A
- **Diameter growth rate (cm/yr)**: 1.2
- **Height (m)**: N/A
- **Height growth rate (cm/yr)**: 32.0
- **Crown shape**: Oval
- **Crown width (m)**: N/A
- **Crown width growth rate (cm/yr)**: 34.1
- **Insects**: N/A
- **Disease**: N/A
‘Patriot’ (U. glabra X U. carpinifolia X U. pumila) X U. wilsoniana

Date: Fall 2014/Pictures 2015
Survival: 40%
Performance rating: 2.0
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): 1.0
Height (m): N/A
Height growth rate (cm/yr): 10.4
Crown shape: Vase to oval
Crown width (m): N/A
Crown width growth rate (cm/yr): 22.9
Insects: N/A
Disease: N/A

‘Pioneer’ (U. glabra X U. carpinifolia)

Date: Fall 2014/Pictures 2015
Survival: 80%
Performance rating: 3.6
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): 0.9
Height (m): N/A
Height growth rate (cm/yr): 21.9
Crown shape: Oval (Vase)
Crown width (m): N/A
Crown width growth rate (cm/yr): 30.8
Insects: N/A
Disease: N/A
‘Prospector’ (*U. wilsoniana*)

Date: Fall 2014/Pictures 2015
Survival: 0%
Performance rating: 0.0
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): N/A
Height (m): N/A
Height growth rate (cm/yr): N/A
Crown shape: N/A
Crown width (m): N/A
Crown width growth rate (cm/yr): N/A
Insects: N/A
Disease: N/A

‘Valley Forge’ (*U. americana*)

Date: Fall 2014/Pictures 2015
Survival: 20%
Performance rating: 0.0
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): 0.3
Height (m): N/A
Height growth rate (cm/yr): 0.0
Crown shape: Vase
Crown width (m): N/A
Crown width growth rate (cm/yr): 18.9
Insects: N/A
Disease: N/A

No picture available since no trees survived
‘New Harmony’ (*U. americana*)

Jefferson was found to be the same species as Princeton.

No pictures available since no trees established.

Date: Fall 2014
Survival: 0%
Performance rating: N/A
Diameter at 1.4m (cm): N/A
Diameter growth rate (cm/yr): N/A
Height (m): N/A
Height growth rate (cm/yr): N/A
Crown shape: N/A
Crown width (m): N/A
Crown width growth rate (cm/yr): N/A
Insects: N/A
Disease: N/A

‘Jefferson’ (*U. americana*)

Not planted at this site.

Date: Fall 2014
Survival: N/A
Performance rating: N/A
Diameter at 1.4m (cm): N/A
Diameter growth rate: N/A
Height (m): N/A
Height growth rate: N/A
Crown shape: N/A
Crown width (m): N/A
Crown width growth rate: N/A
Insects: N/A
Disease: N/A
‘Lewis and Clark’ Prairie Expedition® *(U.americana)*

- **Date:** Fall 2014/Pictures 2015
- **Survival:** 80%
- **Performance rating:** 3.0
- **Diameter at 1.4m (cm):** N/A
- **Diameter growth rate (cm/yr):** 0.8
- **Height (m):** N/A
- **Height growth rate (cm/yr):** 23.8
- **Crown shape:** Vase (oval)
- **Crown width (m):** N/A
- **Crown width growth rate (cm/yr):** 29.9
- **Insects:** N/A
- **Disease:** N/A

‘Athena Classic’ Lacebark Elm *(U. parvifolia)*

- **Date:** Fall 2014/
- **Survival:** N/A %
- **Diameter at 1.4m (cm):** N/A
- **Height (m):** N/A
- **Crown shape:** N/A
- **Crown width (m):** N/A
- **Insects:** N/A
- **Disease:** N/A

Not planted at this site
“Dynasty’ (*U. parvifolia*)

- Date: Fall 2014/Pictures 2015
- Survival: 0%
- Performance rating: 0.0
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): N/A
- Height (m): N/A
- Height growth rate (cm/yr): N/A
- Crown shape: N/A
- Crown width (m): N/A
- Crown width growth rate (cm/yr): N/A
- Insects: N/A
- Disease: N/A

‘Regal’ (*Ulmus x ‘Regal’*)

- Date: Fall 2014
- Survival: 20%
- Performance rating: 1.0
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): 0.0
- Height (m): N/A
- Height growth rate (cm/yr): 0.0
- Crown shape: Oval
- Crown width (m): N/A
- Crown width growth rate (cm/yr): 4.0
- Insects: N/A
- Disease: N/A

No picture available
only one tree established
‘Discovery’ (*U. japonica*)

- Date: Fall 2014/Pictures 2015
- Survival: 0%
- Performance rating: 0.0
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): N/A
- Height (m): N/A
- Height growth rate (cm/yr): N/A
- Crown shape: N/A
- Crown width (m): N/A
- Crown width growth rate (cm/yr): N/A
- Insects: N/A
- Disease: N/A

No picture available since no trees survived

‘Cathedral’ (*U. pumila X U. japonica X U. wilsoniana*)

- Date: Fall 2014
- Survival: 80%
- Performance rating: 2.2
- Diameter at 1.4m (cm): N/A
- Diameter growth rate (cm/yr): 0.2
- Height (m): N/A
- Height growth rate (cm/yr): 6.7
- Crown shape: Oval to Vase
- Crown width (m): N/A
- Crown width growth rate (cm/yr): 11.6
- Insects: N/A
- Disease: N/A