Conifers for North Dakota
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NDSU Woody Plant Improvement Program

Why Conifers (Evergreens)
Provide year round color in the landscape with greens, blues, even yellow to gold
Provide a backdrop for smaller plants in beds and landscape
Can be used as hedges for screening and privacy
Can be utilized in many forms – pyramidal, columnar, weeping, shrub form, ground covers
Can be planted to provide winter and summer windbreaks for the home, garden, orchard, and other ornamental plantings

The Pines (Pinus)
• Two species native to western North Dakota- Ponderosa and Limber pines
• Scotch pine hardy across state
• Asian and European white pine species hardy to ND conditions- Swiss stone pine, Siberian stone pine, Korean stone pine, Japanese stone pine
• The eastern white pine of the eastern US is generally not adapted to ND plains conditions

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**Limber Pine** - *Pinus flexilis*
A five needled pine native to southwest ND, SD and Nebraska. Very drought tolerant once established, branches are limber which prevents snow breakage.

**Scotch Pine** – *Pinus sylvestris*
Widely adaptable, Northern European and Northern Asian seed origins perform best in ND

**Swiss Mountain Pine**
*Pinus mugo var. uncinata*
Tree form variety of mugo pine reaching 15 to 30’ in height. Extremely cold hardy and adaptable. ‘Tannaenbaum’ is the most widely available cultivar.

**The Stone Pines**
- White pine species of mostly Asian origin and so having resistance to white pine blister rust.
- Extreme cold hardiness to -50f reported with some species.
- Highly resistant to winter needle sunburning.
- Underutilized in the North Dakota landscape.
Swiss Stone Pine – *Pinus cembra*

- Cultivars include Prairie Statesman (NDSU), Chalet, Blue Mound, glauca compacta.

Siberian Stone Pine

Foliage is greener in color, resistant to winter sunburning, slow growth to 35’, does not overwhelm a landscape.

Spruces - *Picea*

- **Colorado spruce** – highly adaptable, cold hardy, ornamental, but our next overplanted species with increasing disease problems.
- **Black Hills spruce** – Native to the Black Hills of SD. Dense form, less needle disease susceptibility.
- **Norway spruce** – cultivars showing hardiness and potential in ND.
- **Meyer spruce** – Chinese species being trialed in ND to increase spruce diversity.

Spruce collection, NDSU Absaraka Farm

Colorado Spruce – *Picea pungens*

40’ to 65’ in height and 20’ to 35’ in spread, needles end in a sharp point.
**Colorado Spruce**
Many cultivars selected for blue color, size, and form

- Fat Albert
- Baby Blue Eyes
- Royal Knight

**Colorado Spruce, dwarf cultivars**
Any size you want for the landscape

- Sester Dwarf

**But...too many of a good thing causes problems**

**Needlecast and Branch death on Colorado spruce**
Several disease pathogens are responsible, *Rhizosphaera, Stigmina,* and *Cytospora.*

**Black Hill Spruce – *Picea glauca densata***
Dense branching and form, short needles and cones, widely adaptable and cold hardy, less susceptible to needle diseases but still able to be infected. 35' to 50' height.

- More green than blue in color.

**Black Hills Spruce**
Meyer Spruce – Picea meyeri

- Meyer spruce is new to ND and being trialed in the state. Good cold hardiness, better resistance to needle cast diseases, blunt rather than sharp tipped needles, blue-green in color.
- Height

Meyer Spruce

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Royal Splendor® Norway Spruce

Picea abies ‘Noel’

- NDSU Release
- 40 x 25’
- Maintains a narrowly-pyramidal form which is not typical of the species which typically develops drooping pendulous tertiary branchlets when mature.
- Medium to fast growth rate.
- Available from Iseli Nursery, Oregon Pride Nurseries, Sester Farms.

Royal Splendor® Norway Spruce

Short needled foliage

Winter scion collection for nursery grafting

Spruce cultivars

Pendula white spruce

Red cone Norway spruce
Douglas Fir, *Pseudotsuga menziesii*

**Douglas Fir – Wheatland, ND source**

Very winter hardy, northern prairies adapted source, Not susceptible to spruce needlecast diseases. Being grown as container sldgs by Towner Nursery.

**True Firs - Abies**

- Not generally adapted to ND conditions, very subject to winter burning of needles.
- Place away from winter sun exposure if tried.
- Best choices include Minnesota sources of balsam fir and trial of Siberian fir.

**Arborvitae-Thuja occidentalis**

Dense evergreen foliage for screening, Susceptible to winter burn of foliage, Not drought tolerant, Native to the northeast US, Cultivars variable in height, 5' to over 20', and width, 3' to over 8'.

**Cold Hardy Cultivars:**
- Brandon
- Fastigiata (Columnaris)
- Skybound
- Techny
- Wareana (Siberian)

**Winter burn of fir needles**
Arborvitae

Problems: Winterburning, deer browse, rabbit browse, drought stress and dieback

Upright Junipers, *Juniperous*

- Eastern red cedar and Rocky Mt. Juniper native to North Dakota and South Dakota.
- Very drought and cold tolerant, soil pH adaptable.
- Useful in mixed plantings or as a screen planting.
- Generally good resistance to winter foliage sunburning.
- Heights 10’ to 20’, widths 3’ to 8’ with cultivar.

Upright Junipers

Cultivars: Eastern Red- Taylor Upright
Rocky Mt.- Medora (ND), Sky High (ND), Cologreen, Wichita Blue

Larch - *Larix*

- Deciduous conifers- Loose needles annually and so no winter burning of foliage
- Soft attractive foliage in spur type growth
- Very winter hardy species- Siberian and European, pH adaptable but less tolerant of drought than other genera
- Pyramidal in form, cultivars exist for many varied forms- weeping, fastigiate, dwarf

Larch

Foliage with new cones

Siberian Larch, *Larix sibirica*
Siberian Larch - Fall Foliage

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All photos Greg Morgenson, NDSU, except where noted