

Table 2: TREE and SHRUB CHARACTERISTICS

COMMON NAME	SCIENTIFIC NAME	Plant Origin	Windbreak Suitable	Mature Crown Height (feet)	Mature Crown Spread (feet)	Conservation Varieties Available	Growth Rate	Shade Tolerance	Snow/Ice Tolerance	Root or Basal Suckers	Coppicing Potential	Flood Tolerance	Wildlife Food	Wildlife Cover	Bank Stabilization	Detritus Source	Sediment Trapping	Stream Shading	Regeneration Potential	Lifespan	Fall Leaf Color
<b>Deciduous Shrubs</b>																					
Almond, Russian	<i>Prunus tenella</i>	I	Y	3-5	3-5	Y	SLOW	N	M	Y	Y	N	M	Y	Y	N	M	NA	N	S	ORG.
Buffaloberry, Silver	<i>Shepherdia argentea</i>	N	Y	6-14	8-14	Y	MED.	N	N	Y	M	N	Y	Y	M	N	N	NA	M	M	NONE
Cherry, Mongolian	<i>Prunus fruticosa</i>	I	M	3-6	3-6	Y	SLOW	N	M	Y	M	N	M	M	M	N	N	NA	N	S	YEL.
Cherry, Nanking	<i>Prunus tomentosa</i>	I	M	6-10	6-10	N	MED.	N	M	N	M	N	M	Y	M	N	N	NA	M	S	YEL.
Chokecherry	<i>Prunus virginiana</i>	N	Y	12-25	10-20	Y	MED.	M	H	Y	Y	N	M	Y	Y	M	M	M	Y	M	YEL.
Cotoneaster, European*	<i>Cotoneaster integerrimus</i>	I	Y	8-12	8-12	N	MED.	M	M	N	Y	N	M	Y	M	N	N	NA	N	S	YEL./BRN.
Cotoneaster, Peking*	<i>Cotoneaster acutifolia</i>	I	Y	6-10	6-10	N	MED.	M	M	N	Y	N	M	Y	M	N	N	NA	N	S	PUR.
Currant, Golden	<i>Ribes aureum</i>	N	M	3-6	3-6	N	MED.	M	M	M	M	N	M	Y	M	N	N	NA	Y	S	YEL.
Dogwood, Redosier	<i>Cornus sericea</i>	N	M	7-10	10-15	N	FAST	Y	M	M	Y	Y	M	Y	Y	N	Y	M	Y	M	PUR.
Forsythia	<i>Forsythia europa x F. ovata</i>	I	M	6-11	6-11	N	MED.	M	M	N	Y	N	N	M	M	N	N	NA	N	M	PUR./YEL.
Honeysuckle, Amur*	<i>Lonicera maackii</i>	I	Y	10-14	10-14	N	MED.	Y	M	N	Y	M	M	Y	M	N	N	M	Y	M	BRN./PUR.
Honeysuckle, `Freedom`*	<i>Lonicera korolkowii</i>	I	Y	6-9	6-9	Y	MED.	N	M	N	Y	M	M	Y	M	N	N	M	M	M	BRN.
Lilac, Common	<i>Syringa vulgaris</i>	I	Y	8-12	6-12	N	MED.	N	M	Y	Y	N	N	Y	Y	M	M	NA	N	L	BRN./PUR.
Lilac, Late	<i>Syringa villosa</i>	I	Y	6-10	5-10	N	MED.	N	M	N	Y	N	N	M	M	N	N	NA	N	M	BRN./PUR.
Peashrub, Siberian	<i>Caragana arborescens</i>	I	Y	6-14	6-12	N	MED.	M	M	N	Y	N	M	Y	M	N	N	NA	M	L	YEL.
Plum, American	<i>Prunus americana</i>	I	Y	8-10	8-10	N	MED.	M	M	Y	M	N	Y	Y	M	N	M	NA	M	S	YEL./ORG.
Rose, Woods	<i>Rosa woodsii</i>	N	Y	3-4	3-4	N	MED.	N	N	Y	Y	N	Y	Y	M	N	M	N	M	M	PUR.
Sandcherry, Western	<i>Prunus pumilla besseyi</i>	N	M	3-6	3-6	N	MED.	N	M	M	M	N	M	M	M	N	N	NA	N	S	YEL.
Serviceberry	<i>Amelanchier alnifolia</i>	N	Y	6-15	5-12	N	SLOW	M	M	Y	Y	N	M	Y	Y	N	M	NA	M	M	YEL.
Silverberry	<i>Elaeagnus commutata</i>	N	Y	6-9	3-6	N	MED.	N	M	Y	Y	M	Y	M	Y	N	M	N	N	S	NONE
Snowberry	<i>Symphoricarpos occidentalis</i>	N	N	2-3	1-2	N	SLOW	M	N	Y	Y	M	M	M	N	N	M	N	N	S	NONE/BLK.
Sumac, Skunkbush	<i>Rhus trilobata</i>	N	Y	6-8	4-10	Y	MED.	M	M	N	M	N	M	M	M	N	M	NA	M	M	RED/YEL.
Sumac, Smooth	<i>Rhus glabra</i>	I	M	5-15	10-15	N	SLOW	M	M	Y	Y	N	Y	M	N	N	M	M	N	M	RED
Viburnum	<i>Viburnum lentago</i>	I	M	10-14	8-12	N	SLOW	M	M	M	Y	M	Y	M	M	N	N	M	N	M	YEL./RED
Willow, Bebb's	<i>Salix bebbiana</i>	N	M	8-12	4-8	N	FAST	N	M	M	M	Y	M	M	M	N	N	M	N	M	NONE
Willow, Sandbar-Coyote*	<i>Salix exigua</i>	N	Y	6-10	5-10	N	FAST	N	M	Y	Y	Y	M	Y	Y	M	Y	M	N	M	NONE

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<b>Deciduous Trees</b>																					
Apricot, sp.	<i>Prunus armeniaca</i>	I	Y	10-15	12-18	Y	MED.	N	M	N	M	N	M	M	N	N	N	NA	N	M	YEL./ORG.
Ash, Black	<i>Fraxinus nigra</i>	I	M	30-50	15-30	N	MED.	M	Y	N	M	Y	M	M	N	Y	N	Y	N	L	YEL.
Ash, Green	<i>Fraxinus pennsylvanica</i>	I	Y	35-65	30-40	Y	MED.	M	Y	N	M	Y	M	M	N	Y	N	Y	M	L	YEL.
Ash, Manchurian	<i>Fraxinus mandshurica</i>	I	M	30-55	25-35	Y	MED.	N	M	N	M	Y	M	M	N	Y	N	Y	N	L	YEL.
Aspen, Quaking	<i>Populus tremuloides</i>	N	N	25-60	20-30	N	FAST	N	Y	Y	Y	M	Y	Y	M	Y	M	Y	N	L	YEL.
Boxelder*	<i>Acer negundo</i>	N	Y	30-60	30-60	N	FAST	N	M	N	Y	Y	M	M	N	Y	N	Y	Y	L	YEL./BRN.
Cottonwood, sp.	<i>Populus sp.</i>	N	Y	50-99	40-75	Y	FAST	N	M	N	Y	Y	M	M	Y	Y	N	Y	N	L	YEL.
Crabapple	<i>Malus mandshurica</i>	I	M	10-25	15-25	Y	MED.	N	M	N	M	N	Y	M	N	M	N	NA	N	L	YEL.
Elm, Siberian*	<i>Ulmus pumila</i>	I	Y	25-50	20-40	Y	MED.	M	Y	M	Y	M	M	M	N	Y	N	NA	Y	M	BRN.
Hackberry, Common	<i>Celtis occidentalis</i>	N	M	40-60	25-45	Y	MED.	M	Y	N	M	Y	Y	M	N	Y	N	Y	M	L	YEL.
Hawthorn, Arnold	<i>Crataegus x anomala</i>	N	Y	15-20	15-20	Y	SLOW	N	M	N	M	M	M	Y	N	M	N	M	N	M	YEL.
Linden, American	<i>Tilia americana</i>	I	N	50-70	30-50	N	MED.	Y	M	M	Y	M	M	M	N	Y	N	Y	M	L	BRN./YEL.
Locust, Honey	<i>Gledisia triacanthos</i>	I	M	30-50	30-40	Y	FAST	N	M	N	N	N	M	N	N	M	N	NA	N	M	YEL.
Maple, Amur*	<i>Acer ginnala</i>	I	Y	15-20	15-20	N	MED.	N	M	N	Y	N	N	M	N	M	M	NA	N	M	YEL./RED
Maple, Tatarian	<i>Acer tataricum</i>	I	Y	18-30	15-25	N	MED.	N	M	N	Y	N	N	M	N	M	M	NA	N	M	YEL.
Oak, Bur	<i>Quercus macrocarpa</i>	N	Y	40-70	35-60	N	SLOW	N	Y	N	M	Y	Y	M	N	Y	N	NA	M	L	YEL./BRN.
Pear, Harbin	<i>Pyrus ussuriensis</i>	I	Y	15-30	15-20	Y	MED.	N	M	N	M	N	Y	M	N	M	N	NA	N	L	ORG./YEL.
Poplar, Hybrid	<i>Populus sp.</i>	I	Y	40-60	20-35	Y	FAST	N	M	M	Y	Y	M	M	N	M	N	Y	N	M	BRN./YEL.
Poplar, White*	<i>Populus alba</i>	I	Y	40-60	35-50	N	FAST	N	M	Y	Y	Y	M	M	M	Y	N	Y	N	L	NONE/YEL.
Walnut, Black	<i>Juglans nigra</i>	I	N	35-60	30-50	N	MED.	N	M	N	M	N	Y	M	N	M	N	NA	M	L	BRN./YEL.
Willow, Laurel	<i>Salix pentandra</i>	I	Y	25-40	20-35	N	FAST	N	M	N	Y	Y	M	M	Y	Y	N	Y	N	L	NONE
Willow, Peachleaf	<i>Salix amygdaloides</i>	N	Y	40-55	30-45	N	FAST	N	M	N	Y	Y	M	M	Y	Y	N	Y	N	L	NONE
Willow, White*	<i>Salix alba</i>	I	Y	40-65	30-50	Y	FAST	N	M	N	Y	Y	M	M	Y	Y	N	Y	N	L	NONE

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<b>Conifers</b>																					
Fir, Douglas	<i>Pseudotsuga menziesii</i>	N	M	40-60	20-30	N	SLOW	N	Y	N	N	N	N	Y	N	Y	N	NA	N	L	NONE
Juniper, Rocky Mountain	<i>Juniperus scopulorum</i>	N	Y	20-40	12-20	N	SLOW	M	M	N	N	N	Y	Y	M	Y	N	NA	M	L	NONE
Larch, Siberian	<i>Larix sibirica</i>	I	M	30-60	15-25	N	MED.	N	M	N	N	N	N	M	N	Y	N	NA	N	L	YEL.
Pine, Austrian	<i>Pinus nigra</i>	I	Y	50-70	20-30	N	MED.	M	Y	N	N	N	N	Y	N	Y	N	NA	N	L	NONE
Pine, Ponderosa	<i>Pinus ponderosa</i>	N	Y	50-70	25-30	N	MED.	N	N	N	N	N	N	M	N	Y	N	NA	N	L	NONE
Pine, Scotch	<i>Pinus sylvestris</i>	I	Y	25-50	20-35	N	MED.	N	N	N	N	N	N	M	N	Y	N	NA	N	L	NONE
Redcedar, Eastern	<i>Juniperus virginiana</i>	I	Y	30-45	15-30	N	SLOW	Y	M	N	N	M	Y	Y	M	Y	N	NA	M	L	NONE
Spruce, Blue	<i>Picea pungens</i>	N	Y	30-65	15-25	N	MED.	N	M	N	N	N	N	Y	N	Y	N	NA	N	L	NONE
Spruce, Norway	<i>Picea abies</i>	I	Y	30-65	15-25	N	SLOW	N	M	N	N	N	N	Y	N	Y	N	NA	N	L	NONE
Spruce, White	<i>Picea glauca</i>	I	Y	35-65	15-25	N	SLOW	N	M	N	N	N	N	Y	N	Y	N	NA	N	L	NONE

**Legend** Definition of Symbols and Explanation of Characteristics

\* Potentially Invasive - Species may spread.

1 Native Plants N = native plant (naturally occurring in Idaho)  
I = introduced plant (introduced from another state or country - may be naturalized)

2 Windbreak Suitability The ability to withstand the exposed conditions, moisture stress and limited maintenance associated with conservation plantings.  
Y = Ability to withstand exposed field conditions and vegetative competition  
M = Ability to withstand exposed field conditions, but survival and growth rates may be significantly reduced  
N = inability to withstand exposed conditions and vegetative competition.

3 Mature Crown Height Height at maturity is that observed within conservation plantings or on sites exposed to the elements in rural settings. Trees and shrubs planted in protected areas and urban settings will often grow taller. Assumes healthy stock planted on the most productive soils with good to excellent weed control. Generally, tree heights will decrease from east to west across North Dakota. Trees will tend to grow taller when planted in blocks or multiple row windbreaks compared to single row or specimen plantings. Use mature crown height to determine space requirements when designing tree and shrub plantings.

4 Mature Crown Spread Spread at maturity is that observed within conservation plantings or on sites exposed to the elements in rural settings. Trees and shrubs planted in protected areas and urban settings will often grow wider. Assumes healthy stock planted on the most productive soils with good to excellent weed control. Generally, tree size will decrease from east to west across

North Dakota. Trees will show reduced crown spread when planted in blocks or multiple row windbreaks compared to single row or specimen plantings. Use mature crown spread to determine space requirements when designing tree and shrub plantings.

- 5 Conservation Varieties Available Y = Varieties have been tested and released for conservation plantings.  
N = Varieties may exist within the horticultural trades for ornamental uses, but have not been used for conservation plantings.  
At this time, only the naturally occurring species has proven hardy in conservation plantings.
- 6 Growth Rate Fast, >2 feet per year  
Med. (Medium), 1-2 feet per year  
Slow, <1 foot per year  
Note: Growth rates assume average weather conditions and appropriate weed control on better soils.  
Tree growing conditions deteriorate as one progresses from eastern to western North Dakota.  
Trees and shrubs in western North Dakota may grow at slower rates than shown.
- 7 Shade Tolerance Plant's ability to do well when shaded from direct sunlight for most of each day during the growing season.  
Y = Yes the plant will grow well in shade. The plant is shade tolerant.  
M = The plant is moderately well adapted to growing in shade.  
N = The plant will not grow well in shade. It is shade intolerant.
- 8 Snow/Ice Tolerance Plant's ability to withstand normal snow drifts and ice loading, without severe deformity or breakage, such as commonly found on the windward edges of multiple row windbreaks.  
Y = Withstands heavy snow and ice loading with minimal damage.  
M = Heavy snow and ice loads cause damage to small limbs and branches, but basic plant form and function are maintained.  
N = Heavy snow and ice loads cause severe deformity and destruction to plant form and function.
- 9 Root or Basal Suckers Plant's tendency to produce root suckers or basal trunk sprouts. Does not include basal sprouts arising from the stump when the tree has been cut.  
Y = Commonly develops root suckers.  
M = Rarely develops root suckers unless roots are damaged, but may produce basal trunk sprouts or spread by layering.  
N = Does not develop root suckers or basal trunk sprouts.
- 10 Coppicing Potential Plant's ability to initiate sprouting after the top growth has been removed (as in harvest or ice shearing).  
Note: For some species, the removal of top growth may not initiate resprouts from the cut stump but rather encourage a flush of basal and root sprouts in the area immediately adjacent to the stump. For the purposes of this characteristic, both are considered as coppice regeneration.  
Note: In some situations, by the time that the need for coppicing is noted, the health of the root stock has

deteriorated to the point that successful regeneration is not likely. The references in this table to a plant's coppicing potential assumes healthy root stock.

Y = High. Even mature healthy root stock can initiate resprouts of sufficient quantity to reestablish the stand.

M = Moderate. Mature root stock may not initiate enough resprouts to fully stock the stand.

Juvenile root stock can reestablish a fully stocked stand after the tops have been removed.

N = Unlikely that a stump will initiate new top growth.

- 11 Flood Tolerance An established plant's ability to withstand soil saturation or surface ponding. Note: Most plants will withstand extended periods of flooding when dormant, but some plants are particularly sensitive to excess water during the growing season. Certain plants that may be tolerant to flooding once established may be sensitive to excess moisture during their establishment period.  
Y = Plants are able to withstand flooding or soil saturation for more than three weeks during the growing season.  
M = Plants are able to withstand one to three weeks of flooding or soil saturation during the growing season.  
N = Plants are unable to withstand flooding or soil saturation for more than seven days during the growing season.
- 12 Wildlife Food  
Y = This plant is an excellent source of winter food.  
M = This plant provides food prior to winter, with most food utilized during the growing season.  
N = This plant provides no food supplies that are carried into the winter and little food is available or utilized during the growing season.
- 13 Wildlife Cover  
Y = Provides three or more of the following cover types; *nesting, loafing, escape, winter cover*.  
M = Provides two of the needed cover types.  
N = Provides only one of the cover types.
- 14 Bank Stabilization  
Y = Dense roots stabilize soils and supple tops resist tearing out during high water.  
If tops are sheared by ice, they readily resprout.  
M = Root system provides effective soil stabilization, yet mature tops do not bend easily during high water. If sheared off they may not resprout as readily.  
N = Neither root systems nor top growth respond favorably to high water depths and velocities.
- 15 Source of Detritus  
Y = Listed plant is able to provide an appropriate source of detritus for the riparian system. (Detritus, as used for this characteristic, is stems and limbs of sufficient size to provide in-water habitat for aquatic species.)  
M = Listed plant is only moderately useful as a source of detritus.  
N = Due to size or rapid deterioration of stems, the listed plant is not an appropriate source of detritus.
- 16 Sediment Trapping  
Plant's ability to trap sediment in out-of-bank flood flows. (Directly related to the number of stems per unit area.)  
More stems per square foot translates to more efficient trapping. Note: Larger stems of larger trees may not trap sediment by themselves, but strain debris, increase roughness, and retard velocities which also translates to increased sediment trapping.  
Y = This plant exhibits excellent sediment trapping ability, even with out-of-bank stream flows.  
M = This plant provides good sediment trapping ability, yet less effectively, during flood conditions.  
N = Plant's characteristics reduce its effectiveness in filtering sediments from overland flows.

- 17 Stream Shading Y = Dense canopy and effective plant height provide shade and cooling to stream or water body.  
M = Crown density and height provide some temperature moderation to stream or water body.  
N = Short stature or sparse foliage provide little temperature moderation to stream or water body.  
NA = Species usually not adapted to riparian sites.
- 18 Regeneration Potential Relative ability of the plant to regenerate from seed spread by birds, mammals, floods, snowmelt or wind.  
Y = Plant seeds can become established on sites with existing dense vegetation or mulch layers and minimal amounts of exposed mineral soil.  
M = Plant seeds can become established on sites with moderately dense amounts of existing vegetation or mulch  
N = Plant seeds will become established only on suitable sites of exposed mineral soil under optimal climatic conditions.
- 19 Life Span How long the plant will live under average field conditions found in conservation plantings. Generally plants in the eastern part of North Dakota will survive longer than in the western part of North Dakota. Life span refers only to the survival capability of the originally planted above-ground plant parts. This characteristic does not apply to situations where the above-ground part of the plant dies, but new root sprouts emerge from the existing root stock.  
  
L = Long. Above ground plant parts can be expected to survive for greater than 50 years.  
M = Moderately long. Above ground plant parts can be expected to survive for 20-50 years.  
S = Short. Above ground plant parts can be expected to survive for less than 20 years.
- 20 Fall Leaf Color indicates the normal fall color of leaves, however, numerous environmental and soil conditions may affect ultimate coloration.  
RED = Red  
YEL. = Yellow  
ORG. = Orange  
BRN. = Brown  
PUR. = Purple or reddish purple  
BLK. = Black  
None = Do not turn color in the fall. Will remain green or silvery till leaf drop.

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Note: When differences existed between references, the PLANTS database was generally used for resolution.