

TECHNICAL NOTE

USDA-Natural Resources Conservation Service
Boise, ID – Reno, NV – Salt Lake City, UT – Spokane, WA

TN PLANT MATERIALS NO. 50

JANUARY 2008

Conservation Shrubs and Trees for the Intermountain West

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This Technical Note provides general descriptions of conservation shrubs and trees recommended for use in the Intermountain West (parts of Idaho, Oregon, Nevada, Utah and Washington). It covers plant origin, 20 year height, growth rate, growth habit, drought resistance, wildlife values, flowers/cones, disease and/or pest problems, recommended within row spacing when planted in windbreak or shelterbelt applications and other special attributes and/or cautions.



Ogle, Dan, USDA - NRCS, Twin Falls County, Idaho

SHRUBS

ALMOND, RUSSIAN

Prunus tenella

Origin: introduced
Mature Height: 3- 5 feet
Growth Rate: slow
Growth Habit: upright, suckering
Drought Resistance: good
Wildlife Value: exc. nesting and food source
for birds
Flowers: abundant pink to red
Disease/Pests: No major pests
In-row Spacing: 3- 5 feet
Other: prefers medium soils



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

BUFFALOBERRY, SILVER

Shepherdia argentea

Origin: native
Mature Height: 6- 14 feet
Growth Rate: moderate
Growth Habit: loosely branched and thorny
Drought Resistance: excellent
Wildlife Value: good cover, nesting, browse
and winter food source
Flowers: yellowish with red fruit
Disease/Pests: stem decay, branch canker
In-row Spacing: 6- 10 feet
Other: well adapted to dry, mod. sodic to
saline soils; berries used for jellies; fixes
nitrogen



Ogle, Dan. *USDA NRCS, Aberdeen PMC Windbreaks*

CHERRY, NANKING

Prunus tomentosa

Origin: introduced
Mature Height: 6- 10 feet
Growth Rate: fast
Growth Habit: upright, semi-spreading
Drought Resistance: good
Wildlife Value: browse; fruit for song birds
Flowers: small pink
Disease/Pests: branch cankers
In-row Spacing: 6- 8 feet
Other: prefers medium soils; short- lived;
excellent fruit for pies and jellies



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

SHRUBS

CHOCHECHERRY

Prunus virginiana

Origin: native
Mature Height: 12- 25 feet
Growth Rate: moderate
Growth Habit: oval to round; suckering
Drought Resistance: good
Wildlife Value: excellent food and cover
Flowers: creamy white
Disease/Pests: western x-disease, black knot, stem decay, shothole canker; tent caterpillar
In-row Spacing: 8- 12 feet
Other: landscaping – purple leaf, adapted to a wide variety of soils, fruits for jellies; do not plant near cherry or peach orchards



Monroe, Gary, Washoe Co. Nevada

COTONEASTER

Cotoneaster integerrimus

Origin: introduced
Mature Height: 6- 12 feet
Growth Rate: moderate
Growth Habit: spreading, open- upright arching branches
Drought Resistance: good
Wildlife Value: fruit attracts birds
Flowers: pinkish white
Disease/Pests: fireblight; pear slug
In-row Spacing: 6- 10 feet
Other: showy red berries, should not be planted near crabapples



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

CURRENT, GOLDEN

Ribes aureum

Origin: native
Mature Height: 5- 8 feet
Growth Rate: moderate
Growth Habit: spreading and upright
Drought Resistance: good to excellent
Wildlife Value: roosting, loafing, nesting and fruit attracts birds
Flowers: fragrant golden yellow
Disease/Pests: current worm; anthracnose, leafspots, white pine blister rust host
In-row Spacing: 4– 6 feet
Other: berries used fresh and for jellies; tolerant of slight to medium soil salinity



Ogle, Dan. *USDA NRCS, Aberdeen PMC Windbreak*

SHRUBS

DOGWOOD, REDOSIER

Cornus sericea

Origin: native
Mature Height: 7- 10 feet
Growth Rate: rapid
Growth Habit: loose and round – many stems
Drought Resistance: poor
Wildlife Value: dense cover and food (browse)
Flowers: creamy white
Disease/Pests: twig blight
In-row Spacing: 6– 10 feet
Other: blood-red bark provides winter color



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

HONEYSUCKLE, BLUELEAF

Lonicera korolkowii

Origin: introduced
Mature Height: 6- 10 feet
Growth Rate: moderate
Growth Habit: spreading
Drought Resistance: good
Wildlife Value: nesting and food
Flowers: yellowish pink
Disease/Pests: no major pest problems
In-row Spacing: 5– 8 feet
Other: plant only aphid resistant varieties;
tolerates high pH soils



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

LILAC, COMMON

Syringa vulgaris

Origin: introduced
Mature Height: 6- 12 feet
Growth Rate: moderate
Growth Habit: upright, leggy, suckering
Drought Resistance: excellent
Wildlife Value: nesting
Flowers: white to purple, fragrant and showy
Disease/Pests: powdery mildew; lilac borer
In-row Spacing: 5– 10 feet
Other: root sprouts



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

SHRUBS

PEASHRUB, SIBERIAN

Caragana arborescens

Origin: introduced
Mature Height: 16- 20 feet
Growth Rate: rapid
Growth Habit: erect oval shrub
Drought Resistance: excellent
Wildlife Value: nesting
Flowers: small showy yellow
Disease/Pests: stem decay, leaf spot, branch cankers; blister beetles
In-row Spacing: 5- 10 feet
Other: produces pods with multiple seeds; saline tolerant; very drought tolerant

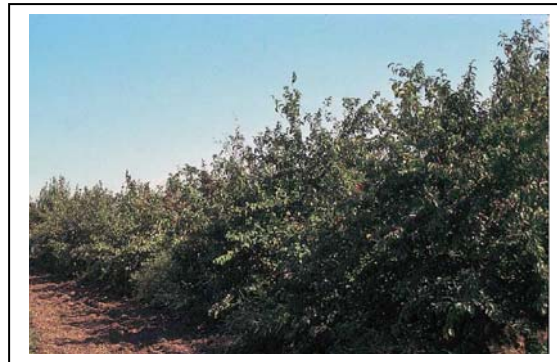


Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

PLUM, AMERICAN

Prunus americana

Origin: native to N. America
Mature Height: 8- 10 feet
Growth Rate: moderate
Growth Habit: round-headed crown, suckers
Drought Resistance: good
Wildlife Value: nesting, loafing, food, browse
Flowers: white
Disease/Pests: stem decay, branch cankers, black knot, plum pockets; tent caterpillar
In-row Spacing: 6- 10 feet
Other: thorny, winter-hardy, thicket-forming tall shrub, edible fruit



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

ROSE, WOODS

Rosa woodsii

Origin: native
Mature Height: 3- 6 feet
Growth Rate: moderate
Growth Habit: stems upright, semi-weeping, suckers
Drought Resistance: fair
Wildlife Value: nesting, cover and exc. food source for upland birds
Flowers: showy pink
Disease/Pests: no major problems
In-row Spacing: 3- 5 feet
Other: thorny, thicket-forming small shrub, rose hips edible fruit and source of Vitamin C



Peterson, Scott, USDA, NRCS, LA
Rechenthin, Clarence, USDA NRCS, TX - flower

SHRUBS

SANDCHERRY, WESTERN

Prunus pumila

Origin: native to N. America
Mature Height: 3- 6 feet
Growth Rate: moderate
Growth Habit: open and spreading
Drought Resistance: good
Wildlife Value: loafing, food, browse
Flowers: white
Disease/Pests: leaf curl, black knot, fireblight
In-row Spacing: 3- 6 feet
Other: relatively short- lived, fruit in pies and jellies



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

SEA-BUCKTHORN

Hippophae rhamnoides

Origin: introduced
Mature Height: 12- 20 feet
Growth Rate: moderate
Growth Habit: spreading, irregular rounded, loose and open
Drought Resistance: excellent
Wildlife Value: cover
Flowers: yellow before leaf-out
Disease/Pests: no major problems
In-row Spacing: 5- 10 feet
Other: relatively short- lived, thorns, fruit high in Vitamin C, prefers moist soils, saline tolerant, attractive silver-green foliage



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

SERVICEBERRY

Amelanchier alnifolia

Origin: native
Mature Height: 6- 15 feet
Growth Rate: slow
Growth Habit: upright
Drought Resistance: good
Wildlife Value: good cover and food
Flowers: white
Disease/Pests: no major problems
In-row Spacing: 5- 10 feet
Other: nutritious fruit used fresh or processed



Williams, Margaret. Nevada Plant Society

SHRUBS

SILVERBERRY, HYBRID

Elaeagnus commutata X *E. angustifolia*

Origin: sterile hybrid
Mature Height: 6- 10 feet
Growth Rate: moderate
Growth Habit: upright, weeping
Drought Resistance: excellent
Wildlife Value: dense thickets for cover,
food source (seed is sterile)
Flowers: light yellow
Disease/Pests: none known
In-row Spacing: 5- 8 feet
Other: tolerates high pH soils, use in place of
Russian-olive



Jefferies Nurseries Ltd, Manitoba

SUMAC, SKUNKBUSH

Rhus trilobata

Origin: native
Mature Height: 6- 8 feet
Growth Rate: slow to moderate
Growth Habit: ascending, new branches hairy
Drought Resistance: excellent
Wildlife Value: fall and winter food for bird,
browse, loafing, nesting
Flowers: light yellow
Disease/Pests: no major problems
In-row Spacing: 4- 8 feet
Other: scented leaves and stems, fruit red



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

SYRINGA (MOCKORANGE)

Philadelphus lewisii

Origin: native
20 Year Height: 6-10 feet
Growth Rate: rapid
Growth Habit: upright
Drought Resistance: poor
Wildlife Value: cover and food
Flowers: white & fragrant
Disease/Pests: voles girdle stems
In-row Spacing: 5- 8 feet
Other: very sensitive to broadleaf herbicides



Lohr, Virginia, PhD, WSU, Pullman, WA

SMALL TREES

CRABAPPLE, SIBERIAN

Malus baccata

Origin: introduced
Mature Height: 10- 25 feet
Growth Rate: moderate
Growth Habit: round to spreading
Drought Resistance: fair
Wildlife Value: fair cover, good food and browse

Flowers: white
Disease/Pests: fireblight, cedar-apple rust, apple scab, canker; cankerworm, apple maggot
In-row Spacing: 12 - 16 feet
Other: edible fruit, protect from rodents/rabbits, do not plant with juniper species



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

HAWTHORN, ARNOLD

Crataegus arnoldiana

Origin: native to N. America
Mature Height: 15- 20 feet
Growth Rate: slow - moderate
Growth Habit: upright, symmetrical
Drought Resistance: good
Wildlife Value: nesting, food, browse
Flowers: white with disagreeable odor
Disease/Pests: hawthorn rust; aphid
In-row Spacing: 12- 16 feet
Other: large thorns, tolerates urban pollution

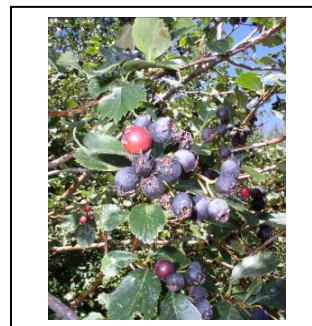


Conservation Trees & Shrubs for Montana, NRCS

HAWTHORN, BLACK (DOUGLAS)

Crataegus douglasii

Origin: native
20 Year Height: 15- 20 feet
Growth Rate: slow - moderate
Growth Habit: upright
Drought Resistance: poor
Wildlife Value: cover, food, browse
Flowers: white
Disease/Pests: unknown
In-row Spacing: 4- 8 feet
Other: thorns, thicket forming



Dring, Tim, USDA-NRCS, Washington

SMALL TREES

MAPLE, AMUR

Acer ginnala

Origin: introduced
Mature Height: 15- 20 feet
Growth Rate: moderate
Growth Habit: multi- stemmed
Drought Resistance: good
Wildlife Value: browse, fair cover
Flowers: yellowish white
Disease/Pests: leaf spot
In-row Spacing: 12- 16 feet
Other: sensitive to phenoxy herbicides, iron chlorosis may occur on saline/sodic poorly drained soils



Conservation Trees & Shrubs for Montana,
USDA, NRCS

WILLOW, LAUREL

Salix pentandra

Origin: introduced
Mature Height: 20- 40 feet
Growth Rate: rapid
Growth Habit: ascending long flexible limbs,
rounded crown
Drought Resistance: low
Wildlife Value: excellent cover, food
Flowers: golden yellow
Disease/Pests: leaf disease, aphids when stressed – seeping sweet sap
In-row Spacing: 10- 16 feet
Other: very attractive shiny bright green leaves on upper side



Ogle, Dan. USDA NRCS, Aberdeen PMC
Windbreak

MEDIUM TO TALL TREES

ASH, GREEN

Fraxinus pennsylvanica

Origin: native to N. America

Mature Height: 35- 65 feet

Growth Rate: moderate

Growth Habit: single trunk, oval to elliptical crown,

Drought Resistance: good

Wildlife Value: cover, nesting and seeds are eaten by birds

Flowers: ---

Disease/Pests: stem decay, branch/twig canker, anthracnose, leaf rust, ash yellow; cankerworm, ash borers, ash plant bugs

In-row Spacing: 12 - 16 feet

Other: can withstand flooding for short periods and has some tolerance to salinity



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

ASPEN, QUAKING

Populus tremuloides

Origin: native

Mature Height: 25- 50 feet

Growth Rate: moderate - rapid

Growth Habit: single trunk, fairly straight, drops lower limbs and suckers

Drought Resistance: poor – requires moist soils to sub moisture to perform well

Wildlife Value: heavily browsed in winter, grouse utilize buds for food

Flowers: catkin

Disease/Pests: canker and stem decay

In-row Spacing: 12- 16 feet

Other: usually regenerates from root suckers, does not survive well in hot valley bottoms of the intermountain west – recommended in mountains and mountain foothills, commonly damaged by livestock, deer and beaver



Ogle, Dan. *USDA NRCS, Teton, County Idaho*

ELM, SIBERIAN

Ulmus pumila

Origin: introduced

Mature Height: 25- 50 feet

Growth Rate: moderate

Growth Habit: open with ascending branches

Drought Resistance: good

Wildlife Value: nesting

Flowers: ---

Disease/Pests: canker and wetwood; cankerworm

In-row Spacing: 12- 16 feet

Other: highly sensitive to phenoxy herbicides; brittle wood subject to breakage; saline and urban pollution tolerant; may be invasive



Steve Hurst, ARS

Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS

MEDIUM TO TALL TREES

HACKBERRY, COMMON

Celtis occidentalis

Origin: native to N. America

Mature Height: 35- 60 feet

Growth Rate: moderate

Growth Habit: single trunk, broadening crown

Drought Resistance: good

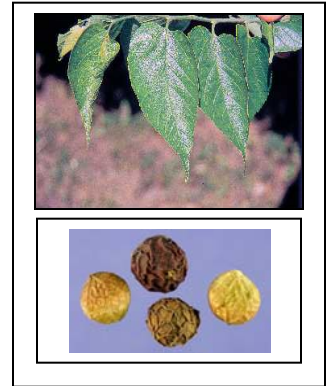
Wildlife Value: fruit eaten by birds/mammals

Flowers: ---

Disease/Pests: damaged by rodents, rabbits, deer

In-row Spacing: 12- 16 feet

Other: good alternate for elm due to similar form and adaptability, somewhat saline tolerant



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*
&
Hurst, Steve, ARS

HONEYLOCUST

Gleditsia tricanthos

Origin: introduced

Mature Height: 30- 50 feet

Growth Rate: moderate - rapid

Growth Habit: develops a deep tap-root

Drought Resistance: good

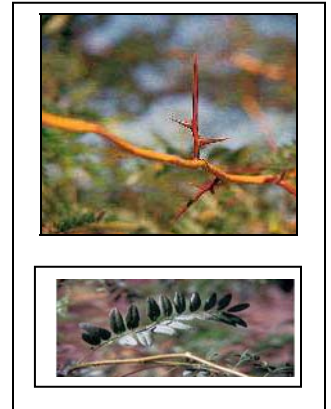
Wildlife Value: food deer, nesting for birds

Flowers: ---

Disease/Pests: relatively disease free, canker sometimes develops; gall midge

In-row Spacing: 12- 16 feet

Other: thorns, fine leaves, legume, must irrigate and fertilize to avoid winter dieback



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

MAPLE, SILVER

Acer saccharinum

Origin: native to N. America

Mature Height: 40- 65 feet

Growth Rate: moderate to rapid

Growth Habit: spreading branches form uniform rounded crown

Drought Resistance: fair

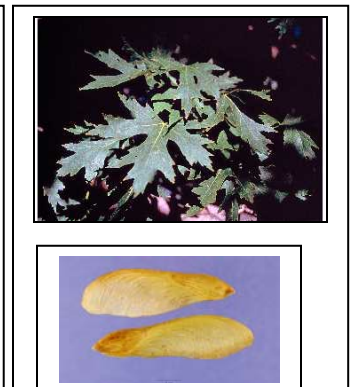
Wildlife Value: browsed by deer/rabbits, seeds eaten by squirrels, nesting for birds

Flowers: ---

Disease/Pests: very subject to iron and manganese chlorosis in alkaline soils

In-row Spacing: 12- 16 feet

Other: performs poorly on clay soils, does not tolerate saline-sodic soils



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

MEDIUM TO TALL TREES

OAK, BUR

Quercus macrocarpa

Origin: native to N. America

Mature Height: 35- 70 feet

Growth Rate: slow

Growth Habit: stout limbs with a broad crown

Drought Resistance: good

Wildlife Value: excellent food and cover

Flowers: ---

Disease/Pests: leaf-twig anthracnose, leaf curl, stem decay

In-row Spacing: 12- 16 feet

Other: long- lived, deep taproot, acorns may be messy, commonly damaged by rodents, rabbits and deer



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

POPLAR, HYBRID

Populus species/crosses

Origin: native to introduced crosses

Mature Height: 40- 70 feet

Growth Rate: rapid

Growth Habit: upright spreading branches

Drought Resistance: poor

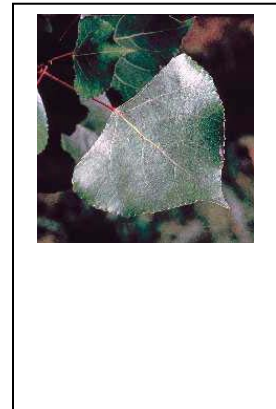
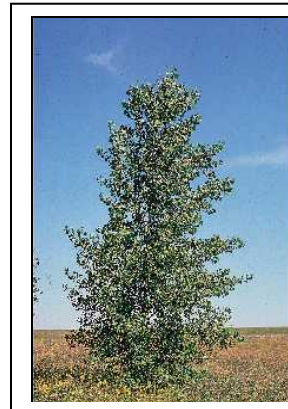
Wildlife Value: cover, buds provide food for birds, good browse

Flowers: ---

Disease/Pests: leaf rust, leaf spot, canker, wetwood, stem decay; poplar borers, aphids, bud gall mite, leaf beetle

In-row Spacing: 12- 16 feet

Other: relatively short- lived, commonly damaged by mice, rodents, rabbits, livestock, deer and beaver, suckers; do not plant in riparian areas



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

POPLAR, SIMON

Populus simonii

Origin: introduced

Mature Height: 35- 50 feet

Growth Rate: rapid

Growth Habit: upright tall narrow branches

Drought Resistance: poor

Wildlife Value: cover, buds provide food for birds, good browse

Flowers: ---

Disease/Pests: leaf rust, leaf spot, canker, wetwood, stem decay; poplar borers, aphids, bud gall mite, leaf beetle

In-row Spacing: 8- 16 feet

Other: relatively short- lived, commonly damaged by mice, rodents, rabbits, livestock, deer and beaver



St. John, Loren, *USDA NRCS, PMC, Aberdeen, Idaho*

MEDIUM TO TALL TREES

WALNUT, BLACK

Juglans nigra

Origin: native to N. America
Mature Height: 35- 60 feet
Growth Rate: slow- moderate
Growth Habit: large oval to round tree
Drought Resistance: fair
Wildlife Value: excellent food and cover
Flowers: ---
Disease/Pests: no major pest problems
In-row Spacing: 12- 16 feet
Other: long- lived, drops lower branches, deep taproot, prefers moist well drained soils, nuts may be messy



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*

WILLOW, GOLDEN (WHITE)

Salix alba

Origin: introduced
Mature Height: 40- 60 feet
Growth Rate: rapid
Growth Habit: large low branching tree with broad- rounded crown and slender drooping branches
Drought Resistance: poor
Wildlife Value: excellent food and cover
Flowers: ---
Disease/Pests: aphid can be a serious problem
In-row Spacing: 12- 16 feet
Other: long- lived, branches shed easily throughout year, prefers moist soils, tolerates flooding and high water-tables



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*
Yankey, Tom, USDA NRCS, Adams County, Idaho

CONIFERS

FIR, DOUGLAS

Pseudotsuga menziesii

Origin: native
Mature Height: 40- 60 feet
Growth Rate: slow
Growth Habit: pyramidal with stiff branches (upper ascending - lower drooping), dense when young – more open with age
Drought Resistance: fair
Wildlife Value: good nesting, birds and rodents utilize seed, good browse
Cones: oval, 2- 4 inches long, 3-lobed bracts extend beyond cone scales
Disease/Pests: fir beetle, bud worm
In-row Spacing: 12– 16 feet
Other: does not tolerate ponding, tolerates slightly saline- sodic soils



©AI Schneider. SW Colorado Wildflowers. USA

JUNIPER, ROCKY MOUNTAIN

Juniperus scopulorum

Origin: native
Mature Height: 20- 40 feet
Growth Rate: moderate
Growth Habit: pyramidal to narrow crown with numerous long, upward-reaching branches
Drought Resistance: excellent
Wildlife Value: excellent food, nesting, cover
Cones: juniper “berry” ovoid, pitted, dark blue, matures 2nd year - 1- 3 seeds
Disease/Pests: cedar-apple rust, tip blight, spider mites
In-row Spacing: 6– 10 feet
Other: do not plant near crabapple, currant, serviceberry or hawthorn



Ogle, Dan, USDA NRCS, ID.

Herman, D.E., *ND Tree Handbook, USDA NRCS & Hurst, Steve, ARS*

JUNIPER, EASTERN REDCEDAR

Juniperus virginiana

Origin: native to N. America
Mature Height: 25- 45 feet
Growth Rate: moderate
Growth Habit: dense irregular pyramidal Crown; more open with age
Drought Resistance: good
Wildlife Value: excellent food, nesting, cover
Cones: juniper “berry” globose to ovoid, pitted, matures 1st year - 1- 3 seeds
Disease/Pests: cedar-apple rust, tip blight, spider mites
In-row Spacing: 6– 10 feet
Other: do not plant near crabapple, currant, serviceberry or hawthorn; susceptible to stem breakage by snow



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS; Hurst, Steve, ARS and Allain, Larry, USGS*

CONIFERS

PINE, AUSTRIAN

Pinus nigra

Origin: introduced

Mature Height: 40- 60 feet

Growth Rate: moderate

Growth Habit: pyramidal when young,
rounded flat top when mature

Drought Resistance: fair - good

Wildlife Value: cover, nesting and bird food,
browse for deer

Cones: yellowish-brown, 2-4 inches long,
broad at base – taper to a point

Disease/Pests: no serious problems

In-row Spacing: 12– 16 feet

Other: tree somewhat trashy and not
recommended for yards, very tolerant of high
pH and slight salinity, requires at least 20
inches mean annual precipitation



Ogle, Dan, USDA NRCS, Ada Co. ID & Hurst, Steve, ARS (seed)

PINE, LIMBER

Pinus flexilis

Origin: native

Mature Height: 25- 40 feet

Growth Rate: slow

Growth Habit: dense, pyramidal when young,
flat topped when mature, flexible
branches

Drought Resistance: fair - good

Wildlife Value: cover, nesting and food source
for birds and small animals

Cones: 3 – 6 inches long, 2 winged seeds per
scale

Disease/Pests: white pine blister rust

In-row Spacing: 12– 16 feet

Other: tolerant of road salt



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS;
Hurst, Steve, ARS

PINE, LODGEPOLE

Pinus contorta

Origin: native

Mature Height: 25- 40 feet

Growth Rate: slow - moderate

Growth Habit: slender, tall, straight, with
short stout branches

Drought Resistance: poor

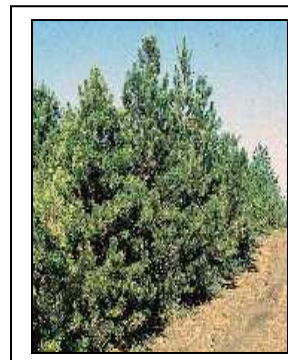
Wildlife Value: good grouse habitat, food,
browse

Cones: clustered, broadest near base, 1- 2
inches long, each scale armed with a
short spine

Disease/Pests: pine beetles, sawflies, budworm

In-row Spacing: 8– 16 feet

Other: can tolerate very wet conditions



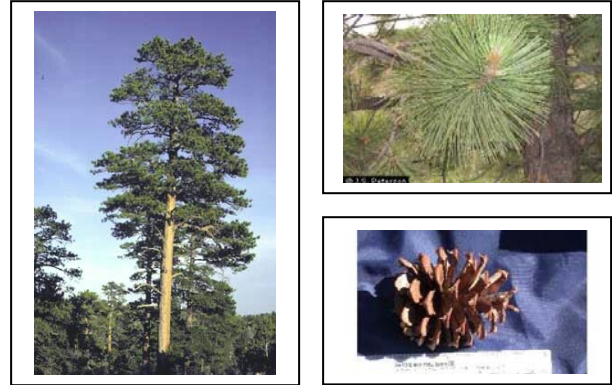
Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS;
Hurst, Steve, ARS; Peterson, Scott, USDA NRCS

CONIFERS

PINE, PONDEROSA

Pinus ponderosa

Origin: native
Mature Height: 45- 70 feet
Growth Rate: moderate
Growth Habit: pyramidal when young
irregular- oblong- open with age
Drought Resistance: good
Wildlife Value: nesting and food
Cones: 3- 5 inches long with sharp thorn at tip
of scale – seeded winged
Disease/Pests: needle cast, gall rust; tip moth,
sawfly, scale, aphid
In-row Spacing: 12– 16 feet
Other: 5- 9 inch long needles, prefers well-
drained soils – full sun, tolerates slight
salinity/ sodicity, does not tolerate flooding



Banner, R., Utah State University; Monroe, Gary, NV;
and Peterson, Scott, USDA NRCS

PINE, SCOTS (SCOTCH)

Pinus sylvestris

Origin: introduced
Mature Height: 25- 50
Growth Rate: moderate
Growth Habit: pyramidal when young, flat-
rounded top and open when mature
Drought Resistance: good
Wildlife Value: nesting and winter cover
Cones: 1.5- 2.5 inches long, diamond shaped
scales, seed two- winged
Disease/Pests: needle cast, gall rust; tip moth,
sawfly, scale, aphid
In-row Spacing: 12– 16 feet
Other: lower stump is commonly crooked,
prefers well drained soils, does not tolerate
the high pH soils in Intermountain West
valley bottoms



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS;
Hurst, Steve, ARS

SPRUCE, BLUE

Picea pungens

Origin: native
Mature Height: 30- 60
Growth Rate: moderate
Growth Habit: pyramidal, broad and dense
branching to ground level
Drought Resistance: good
Wildlife Value: nesting sites for birds
Cones: 2.5- 4 inches long, papery scales, small
winged seed
Disease/Pests: needle cast, canker, needle
blight; spider mites, needle miner,
scale, sawfly and aphid
In-row Spacing: 12– 16 feet
Other: not tolerant of flooding, tolerates high
pH soils; susceptible to wind throw



Herman, D.E. et al. *ND Tree Handbook*, USDA NRCS;
Hurst, Steve; Peterson, Scott, USDA NRCS

CONIFERS

SPRUCE, ENGELMANN

Picea engelmannii

Origin: native

Mature Height: 30- 45 feet

Growth Rate: slow

Growth Habit: pyramidal to conical, long stout ascending branches

Drought Resistance: fair

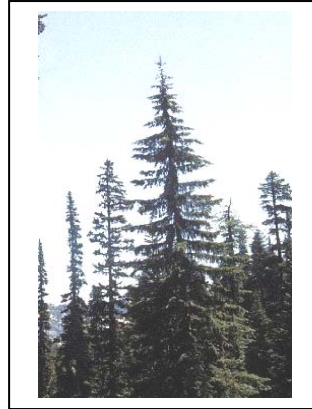
Wildlife Value: browse, nesting, winter cover

Cones: leathery, broadest at middle tapering to a rounded tip, scales wedge-shaped

Disease/Pests: needle blight, needle cast, canker; spider mite, needle miner, budworm, scale, sawfly, aphids

In-row Spacing: 12– 16 feet

Other: prefers moist soils, very tolerant of wet conditions



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SPRUCE, WHITE (BLACK HILLS)

Picea glauca

Origin: native

Mature Height: 35- 60 feet

Growth Rate: slow

Growth Habit: pyramidal to conical, long stout ascending branches

Drought Resistance: fair

Wildlife Value: browse, nesting, winter cover

Cones: 1.5- 2 inches, rounded smooth scales, small winged seed

Disease/Pests: needle blight, needle cast, canker; spider mite, needle miner, budworm, scale, sawfly, aphids

In-row Spacing: 12– 16 feet

Other: prefers moist soils, tolerates wet feet



Herman, D.E. et al. *ND Tree Handbook, USDA NRCS*;
Hurst, Steve, ARS

ADDITIONAL INFORMATION

"Common Insect Pests of Trees and Shrubs in North Dakota"

<http://www.ext.nodak.edu/extpubs/plantsci/trees/e296w.htm>

"Deciduous Tree Diseases"

<http://www.ext.nodak.edu/extpubs/plantsci/hortcrop/pp697-1.htm>

"Diseases and Related Problems of Evergreens"

<http://www.ext.nodak.edu/extpubs/plantsci/trees/pp789-1.htm>

"Insect and Disease Management Guide for Woody Plants in North Dakota"

<http://www.ext.nodak.edu/extpubs/plantsci/trees/f1192w.htm>

Idaho Brochure "Living Snow Fence" <ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/snowfence092605.pdf>

Idaho Forestry Technical Note No. 14
"Water Needs of Windbreaks for Trickle
Irrigation System Design." ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/trickle_irrigation.pdf

Idaho Plant Materials Technical Note No. 24
"Grass, Grass-Like, Forb, Legume, and
Woody Species for the Intermountain West."
ftp://ftp-fc.sc.egov.usda.gov/ID/programs/technotes/seed_species07.pdf

Idaho Plant Materials Technical Note No. 32
"Users Guide to Description, Propagation,
and Establishment of Native Shrubs and
Trees for Riparian Areas in the
Intermountain West." ftp://ftp-fc.sc.egov.usda.gov/ID/programs/technotes/riparian_woodys.pdf

Idaho Plant Materials Technical Note No. 34
"Guidelines to Reducing Rodent Damage
While Establishing Windbreaks." ftp://ftp-fc.sc.egov.usda.gov/ID/programs/technotes/windbreaks_rodents.pdf

Idaho Plant Materials Technical Note No. 39
"Waterjet Stinger: A tool to plant dormant
unrooted cuttings of cottonwoods, dogwoods
and other species." ftp://ftp-fc.sc.egov.usda.gov/ID/programs/technotes/waterjet_stinger06.pdf

Montana NRCS Planting Guide "Planting
Guide for Bareroot Trees and Shrubs" ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/planting_guide_bareroot3.pdf

Montana NRCS Planting Guide "Planting
Guide for Container, Balled and Bur-lapped
Stock" ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/planting_guide_balledbur_lap.pdf

PNW Extension Publication "Trees Against
the Wind" ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/trees_wind05.pdf

"Pruning Trees and Shrubs"
<http://www.ext.nodak.edu/extpubs/plantsci/trees/h1036w.htm>

"Weed Control in Tree Plantings"
<http://www.ext.nodak.edu/extpubs/plantsci/weeds/w1097-1.htm>

"Weed Barrier Fabric Maintenance for
Conservation Tree Plantings" ftp://ftp-fc.sc.egov.usda.gov/ID/programs/plant/weed_barrier.pdf

"Windbreak Establishment", University of
Nebraska Extension EC 91-1764-B.
<http://www.unl.edu/nac/brochures/ec1764/ec1764.pdf>

"Windbreak Management", University of
Nebraska Cooperative Extension EC 96-1768-X.
<http://www.unl.edu/nac/brochures/ec1768/ec1768.pdf>

"Windbreak Renovation" University of Nebraska
Cooperative Extension EC.98-1777-X
<http://www.unl.edu/nac/brochures/ec1777/ec1777.pdf>

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