

Windbreaks Their Use



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USDA-NRCS
Knox City Plant Materials
Center



Introduction



- The difficulties in growing trees and shrubs where natural rainfall and other conditions are not the most favorable for tree growth should only stimulate the desire to succeed in planting and improving the home. The early ranchmen were not long in realizing the importance and value of tree planting and many of the old ranch headquarters are among the best planted home sites to be found, these early pioneers having taken advantage of the protection, comforts, and pleasures of trees. Trees and Shrubs in Northwest Texas, TAES Bulletin No.447 - April, 1932

Windbreaks and Their Uses

- **What is a Windbreak?**



In West Texas



Windbreaks and Their Uses

- **Webster Says – It's hedge, fence, or row of trees serving to break or lessen the force of the wind.**



But Windbreaks have more Uses

- **Farmstead Use**
- **Field Use**
- **Livestock Shelters**
- **Living Snow Fences**
- **Wildlife Habitat**
- **Screening**

Farmstead Windbreak



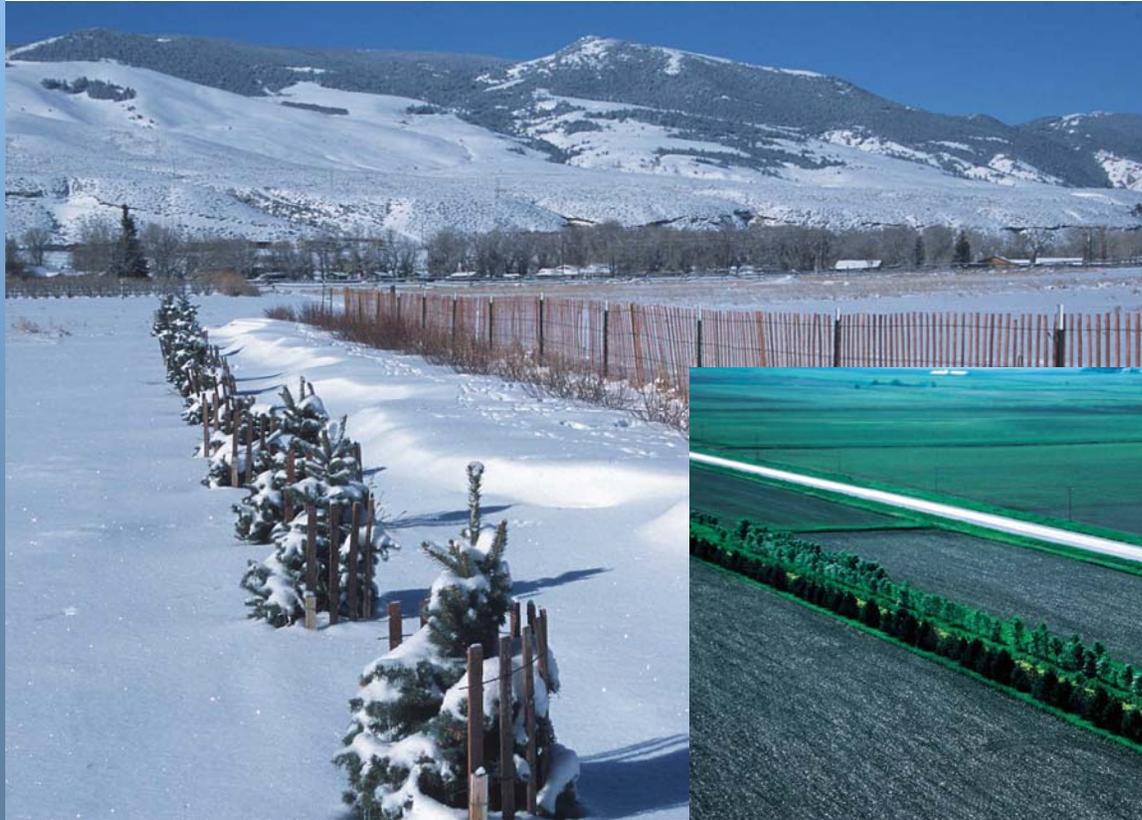
Field Windbreaks



Livestock Shelters



Living Snow Fences



Wildlife Habitat



Screening



So-why do we plant windbreaks?



- **Basic reason - to reduce wind speed**
- **Windbreaks reduce heating and cooling cost to homes, and add value**
- **Provide a barrier from sound and site, smell**
- **Protect livestock**
- **Aesthetics - they look good**
- **Wildlife habitat - birds and little furry critters**

Windbreaks Species Selection



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Best Performing Evergreens



- Eastern Redcedar, *Juniperus virginiana*
- Arizona Cypress, *Cupressus arizonica*
- Austrian Pine, *Pinus nigra*
- Rocky Mt.. Juniper, *Juniperus scopulorum*
- Arborvitae, *Thuja sp.*
- Ponderosa Pine, *Pinus ponderosa*
- Afghanistan Pine, *Pinus elderica*

Eastern Redcedar, *Juniperus virginiana*



- medium height
- up to 25 ft tall
- plant 15-25 ft apart
- long lived
- dense foliage



Arizona Cypress, *Cupressus arizonica*



- medium height
- up to 30 ft tall
- plant 15-25 ft apart
- dense foliage
- older trees brittle
- pollen allergies



Austrian Pine, *Pinus nigra*



- medium height
- up to 35 ft
- medium density
- plant 15-25 ft apart
- leave lower limbs for effect



Rocky Mt.. Juniper, *Juniperus scopulorum*



- medium height
- up to 20 ft tall
- plant 10-20 ft apart
- slow growth
- good native selection



Arborvitae, *Thuja sp*

- small to medium height
- up to 20 ft tall
- dwarf varieties to 15 ft
- plant 10-20 ft apart
- very dense foliage
- multi-trunks
- slow growth



Ponderosa Pine, *Pinus ponderosa*



- medium height
- up to 35 ft
(taller in native habitat)
- medium density
- plant 15-25 ft apart
- leave lower limbs
for effect



Afghanistan Pine, *Pinus elderica*

- tall tree
- up to 50+ ft
- plant 10-20 ft apart
- narrow growth form
- fast growth- multi flush
- leave lower limbs for effect



Afghanistan Pine, *Pinus elderica*



- excellent example



Best Performing Hardwoods/Shrubs



- Little Walnut, *Juglans microcarpa*
- Hackberry, *Celtis occidentalis*
- Bur Oak, *Quercus macrocarpa*
- Redbud, *Cercis canadensis*
- Green Ash, *Fraxinus pennsylvanica*
- Desert Willow, *Chilopsis linearis*
- Chickasaw Plum, *Prunus angustifolia*

Little Walnut, *Juglans microcarpa*



- **deciduous**
- **medium height up to 30 ft**
- **plant 10-20 ft apart**
- **similar to pecan in growth form**
- **slow growth rate**
- **good wildlife plant**

Hackberry, *Celtis occidentalis*



- **deciduous small tree**
- **20-30 ft tall**
- **plant 10-20 ft apart**
- **slow growth**
- **medium density**
- **best drought resistance**



Bur Oak, *Quercus macrocarpa*

- deciduous tall tree
- height up to 40 ft
- plant 15-25 ft apart
- dense foliage
- moderate growth rate
- good wildlife value



Redbud, *Cercis canadensis*

- **deciduous**
- **small tree
up to 15 ft**
- **plant 10-15 ft
apart**
- **multi-trunk**
- **very showy**



Green Ash, *Fraxinus pennsylvanica*



- **deciduous**
- **medium height
up to 30 ft**
- **plant 10-20 ft apart**
- **medium density**
- **moderate growth
rate**



Desert Willow, *Chilopsis linearis*



- **deciduous**
- **most are small, older ones can reach up to 25 ft**
- **plant 10-20 ft apart**
- **moderate growth rate**
- **very showy - orchid like blooms**
- **foliage density similar to mesquite**
- **good wildlife value - hummingbirds**

Chickasaw Plum, *Prunus angustifolia*

- small shrub
- up to 10 ft
- plant 6-10 ft apart
- spreads from root sprouts
- excellent wildlife plant



Other Species



- Limber Pine or Southwest White Pine - starts off slow but shows good results after 3 or 4 growing seasons
- Italian Stone Pine - similar to Afghanistan Pine
- Scotch Pine
- Digger Pine
- Pinyon Pine
- Cottonwood
- Sycamore
- Chinese Elm
- Keteleeri Juniper

Other Species

- Caragana
- Hawthorn
- White Honeysuckle
- Common Lilac
- Cotoneaster
- Nanking Cherry
- Sand Cherry
- Shunkbush Sumac
- Osage Orange

!!Stay Away From Species!!



- Russian Olive
- Siberian Elm
- Salt Cedar
- Black Locust
- Hybrid Poplar – i.e.. Lombardy Poplar
- Aspen
- Blue Spruce
- Some Mulberry species

Windbreak Planting



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Planting Windbreak Trees



- Always plant the green side up



Windbreak Planting

- **Before Planting**
- **CONIFERS** – containerized (avoid buying bareroot conifers in our area)
 - ❖ Protect from extreme temperatures, freezing and high heat.
 - ❖ Place in area protected from wind and direct sun.
 - ❖ Water seedlings once a week until ready to plant.
 - ❖ Schedule planting before new growth starts.



Windbreak Planting



- **BAREROOT SEEDLINGS**
 - ❖ Bareroot seedlings have an incomplete root system.
 - ❖ Never expose seedling roots to air for long periods.
 - ❖ Protect bundles from freezing or high temperatures.
 - ❖ Water seedlings once a week until ready to plant.
 - ❖ Schedule planting before new growth starts.
 - ❖ If you have to hold bundles for long periods, heel in.
 - ❖ Try to plant on calm cool days.

Windbreak Wind and Rodent Protection



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Seedling Protection



- After Planting
 - Climate
 - Livestock
 - Rodents and Other Animal Pest
 - Weed Competition

Conclusions



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