

Planting for Conservation in Sublette County



Your guide to planting trees and shrubs sold through
the Sublette County Conservation District's
Seedling Tree Program





Ponderosa Pine needles



Quaking Aspen



Rocky Mountain Juniper branch



Douglas Fir bark and branch



Brought to you by
the Sublette County
Conservation District, 2008

This guide contains tips on species selection, windbreak design, planting methods, and care needed for successful conservation planting in the unique growing conditions of Sublette County, Wyoming. The purpose of Conservation Districts' seedling tree programs across the nation are to promote and encourage conservation plantings. In this guide, you will find information about the Sublette County Conservation District's (SCCD) seedling tree program, the various species sold, and how they can benefit you depending on where you live in the county.

Tree and shrub species listed in this guide have been approved by SCCD. Approval is based primarily on experience with trees or shrubs that do well in the county and work well for conservation purposes.

The SCCD compiled information used in the guide from many different sources. Growth rate and height estimates found often assume growth in ideal conditions. Many of the tree and shrub species included in this guide are native to milder climates and may not attain the growth rates and heights listed.

Extreme climatic conditions in altitudes between 6,000 and 9,000 feet in Sublette County can make successful tree plantings difficult. Specific problems posed by this climate in many areas of Sublette County are low rainfall, temperature extremes, a limited growing season, and frequent dry winds. However, with patience, enthusiasm, the right plant varieties, and correct planting techniques, you can be successful.

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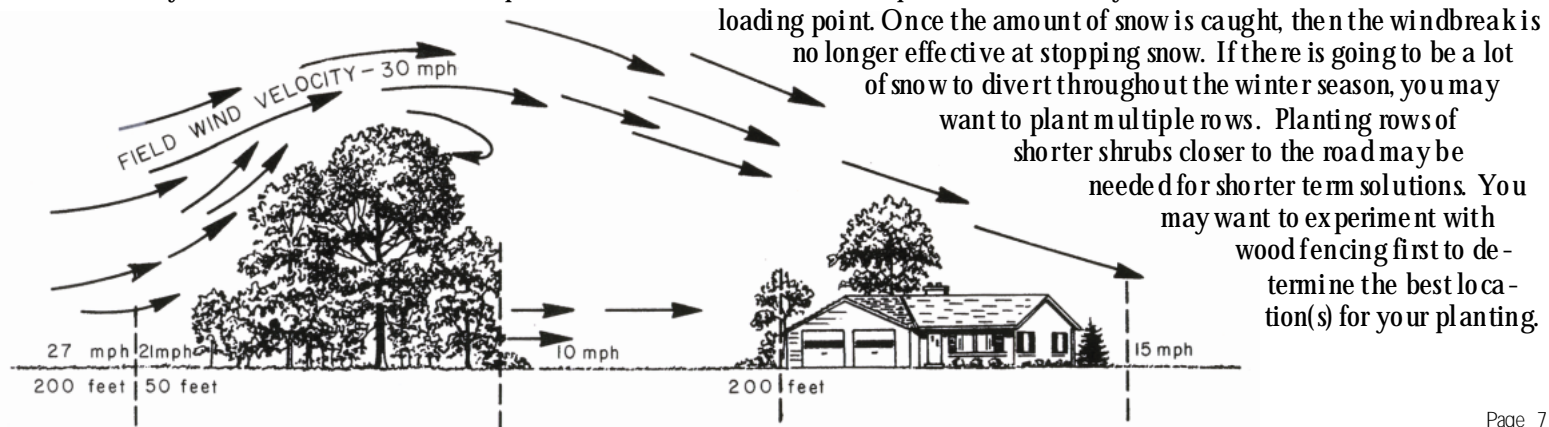
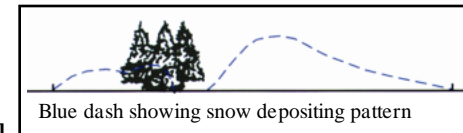
Benefits of conservation planting

Reduce wind

A windbreak planting of trees and shrubs creates a “wind shadow” on its leeward (downwind) side. Generally this protected area extends to a distance of 10 to 20 times the height of the windbreak’s tallest trees. In theory a windbreak with a height of about 20 feet will provide protection for about 200 feet from the planting. Depending on the wind direction, your protected area could be much further. Windbreaks reduce wind currents by diverting some over the top and the rest are filtered through the trees.

Control blowing snow / Manage snow drifts

Living snow fences when properly designed and located, can assist with control of relocated snow and preserving winter moisture. A living snow fence slows down the wind, which allows the snow particles to fall to the ground. If you have a road-way where snow accumulates, then a living snow fence can help to relocate the point at which that snow collects. A general rule for how far away the planting needs to be is 15 times the height of the trees at maturity. So if your trees or shrubs are expected to grow to a height of 10 feet, then you will want to plant your living snow fence 150 feet upwind of the road. This of course will depend on the density of the trees or shrubs, wind speed and wind direction. Also keep in mind that every windbreak will have a maximum



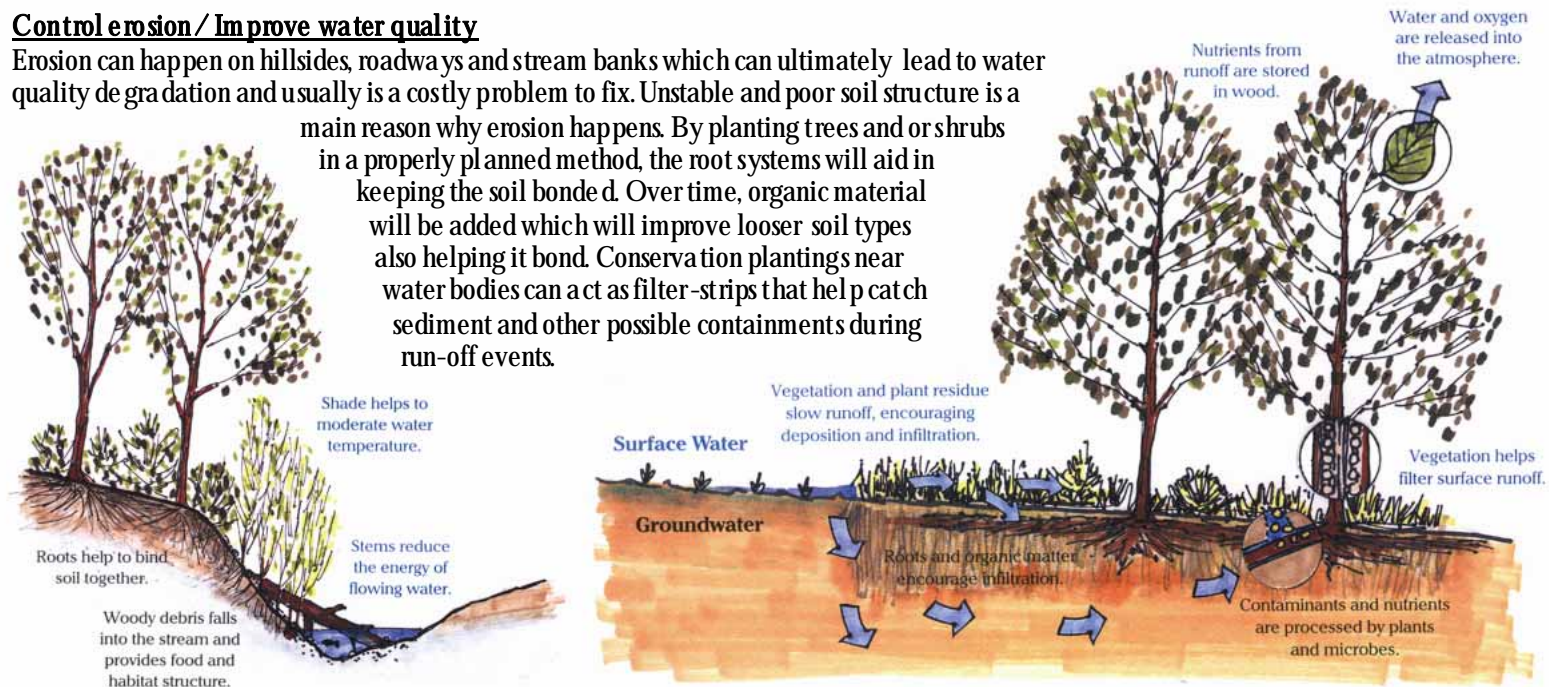
Benefits of conservation planting

Reduce dust and other air pollutants

Particle pollutants, such as dust, ash, pollen and smoke, settle on and are trapped by trees and shrubs and are then washed to the ground by rainfall. Trees remove gaseous pollutants such as Carbon dioxide or CO₂, by absorbing them through the pores of the leaves. The carbon is stored in the roots and trunks and oxygen is then released into the atmosphere. One study suggests that the amount of CO₂ absorbed by one acres worth of trees is equal to the amount given off by a car that has drove 26,000 miles

Control erosion/ Improve water quality

Erosion can happen on hillsides, roadways and stream banks which can ultimately lead to water quality degradation and usually is a costly problem to fix. Unstable and poor soil structure is a main reason why erosion happens. By planting trees and or shrubs in a properly planned method, the root systems will aid in keeping the soil bonded. Over time, organic material will be added which will improve looser soil types also helping it bond. Conservation plantings near water bodies can act as filter-strips that help catch sediment and other possible containments during run-off events.



Benefits of conservation planting

Increase property value

Having a living windbreak or other conservation planting can greatly increase property values in Sublette County. Many areas of the county do not have trees or shrubs naturally growing. By adding plantings you will increase the overall appeal and value of your property.

Increase livestock comfort

Livestock do better when protected from winter winds and blowing snow. Windbreaks help by providing needed shelter by reducing wind velocity and trapping snow away from corrals and other containment areas. Benefits include increased feed efficiency, survival of new-borns, greater weight gain and improved animal health. This all leads to an increase in profits. During months of high temperature, plantings will aid livestock in staying cooler which can lead to a reduction of water consumption as well.

Reduce energy bills

Living windbreaks can help reduce heating expenses by blocking cold winter winds that cause cool drafts inside the home. During summer months trees and shrubs provide shade and reduce the air temperature through evaporation.

Reduce noise

Tree and shrubs act as natural sound barriers. They can be a useful tool to muffle sounds from a busy street or highway, or that of ranchequipment. Usually this takes a multiple row planting and/or a dense planting with trees or shrubs that have a dense growth type. Spacing your planting a little tighter will also help you achieve the goal of reducing noise.



Planting & care of seedlings / site selection

Successful plantings can be accomplished through a well-defined plan that starts with choosing the right location. Things to consider might be prevailing or troublesome wind directions, problems with drifting snow, locations of water bodies, and locations power lines (both overhead and underground). Many factors must be considered in conservation plantings, regardless of whether they are located in the mountains or plains, or whether they have been designed to benefit wildlife or control wind.

When planning your planting site(s) it's important to keep in mind what the mature size of the trees or shrubs will be. It will be a waste of your hard work if you have to remove part or all of a planting later in its life because it eventually encroaches your leach field or gets too close to an overhead power line.

Key things to consider during the planning process

- *Elevation, slope and aspect*
- *Soil type and alkalinity*
- *Prevailing wind direction(s)*
- *Weed control methods*
- *Irrigation needs*
- *Snow drifting*
- *Over-head lines, such as power*
- *Species size and shape*
- *Underground utilities' locations*
- *Location of septic system*
- *Consideration for neighboring homes and roads*



site selection / Planting & care of seedlings

When planning your planting(s) you may want to consider planting multiple species. You may find that certain species do better than others based on your location and environmental factors. Planting in phases will allow you time to decide on the best species for your final planting(s). Future encroachment should be considered when planting near property boundaries.

It's extremely helpful to do a sketch of your property to determine the appropriate location of your planting. Make your drawing as close to scale as possible so you can determine the appropriate distances from areas to avoid for your planting(s). Once you finish your drawing and decide on your location and what species you will be using, then an additional drawing may be needed if you are going to install a drip irrigation system, which SCCD highly recommends for improving survivability of your planting. Be sure to include any future plans that may interfere with your planting.

Things to include in your sketch:

- *All buildings*
- *Roads*
- *Any existing plantings*
- *Power, water and septic lines*
- *Fences and gates*
- *Leach field*
- *Wind direction(s) (rank in order of frequency if more than one)*
- *Livestock areas (this may include feeding and calving areas, corrals and sheds, etc)*
- *Any future buildings or projects*



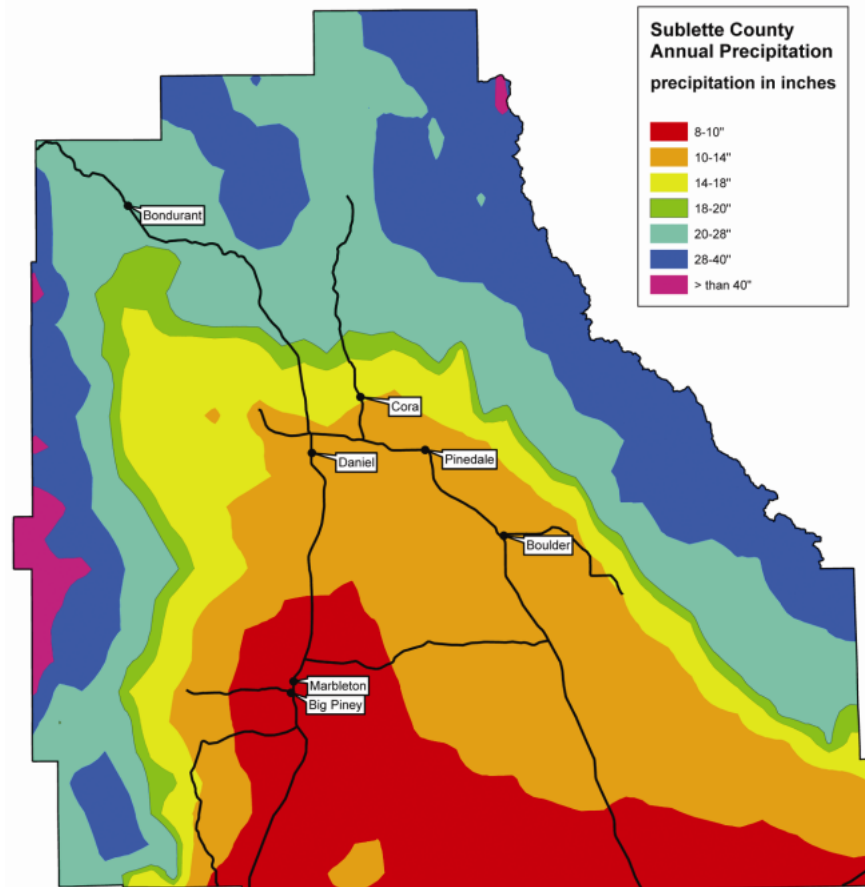
Planting & care of seedlings /site selection

Precipitation in Sublette County

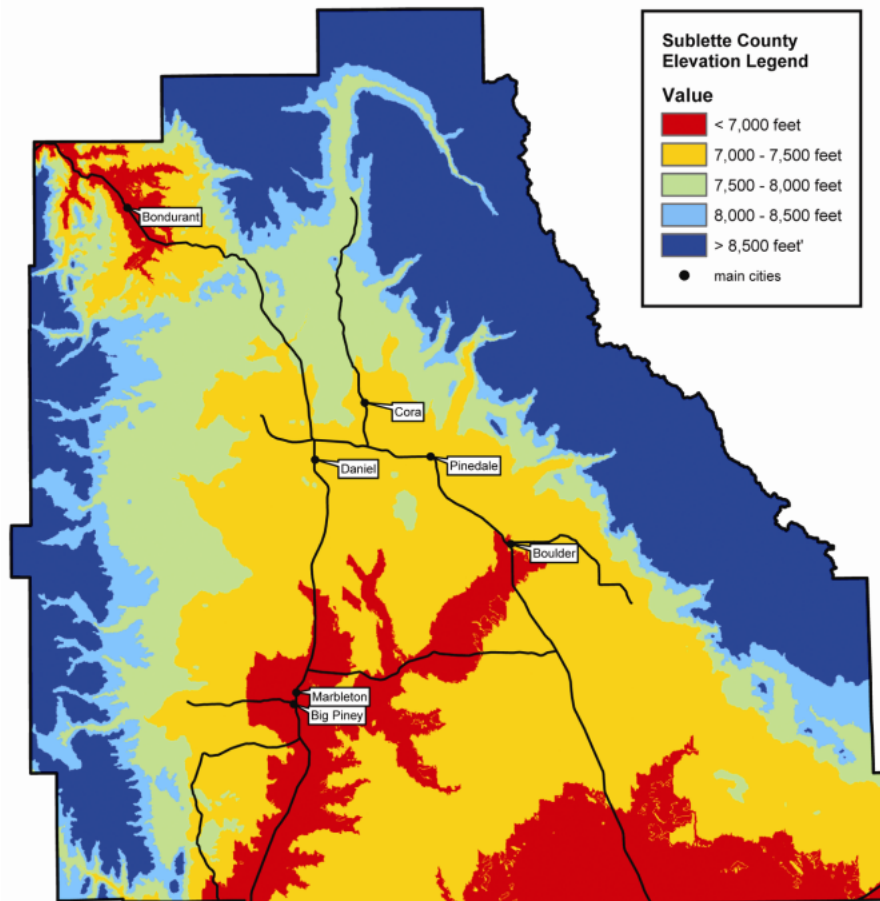
Plantings will need to be watered on a regular basis to get established. This time period will vary with species. Generally the conifers will take longer to get established than most deciduous trees and shrubs. The frequency of water application in conjunction with soil types will need to be considered.

For areas that receive below 12-14 inches of annual precipitation, most plantings will need supplemental water.

Use the map to the right to help determine how much supplemental water your new planting will need.



site selection / Planting & care of seedlings



Elevation in Sublette County

Trees sold by the SCCD are recommended based on their relation to elevation levels found throughout the county. The map to the left should be helpful in choosing the appropriate plant species for your specific area.

Many other factors will also need to be considered when choosing the appropriate species for your planting.

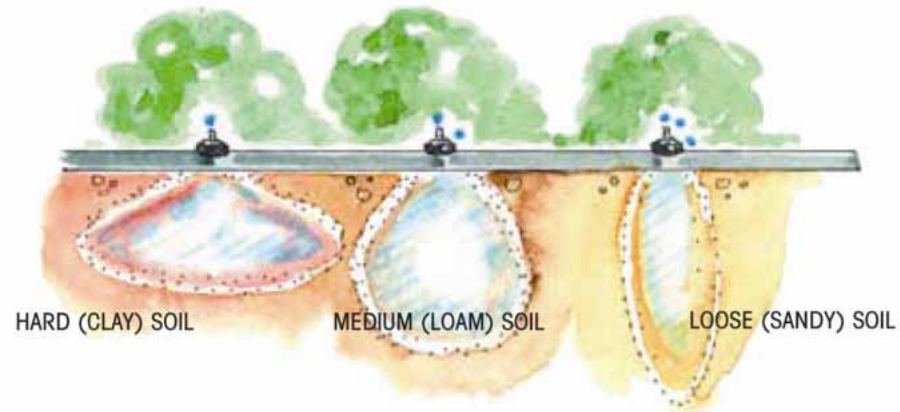
Planting & care of seedlings / soil considerations

Available Water Capacity

Soils are a key component when evaluating an area for potential tree growth. The available water capacity (AWC) is the amount of water that a soil can store and is available for use by plants. There are several soil properties that affect AWC including texture, organic matter, osmotic pressure (in relation to soil salinity), bulk density and rock fragments.

Soil Texture

Soil texture has a significant effect on soil-water relationships. It describes the relative proportion of three different grain sizes: sand, silt, and clay. In general, hard (clay) soils drain slowly and compact easily making root penetration difficult. Clay soils can result in root damage as the soil freezes and thaws with changing weather. Medium (loam) soil retains moisture but also drains well to allow water to reach the plant roots. Loose (sandy) soils are well-drained but dry out quickly, so additional watering is needed. However, keep in mind that different types of plants have adapted to growing in different soil types.



Organic Matter

Soil organic matter is composed of decaying plant and animal matter and it provides nutrients such as nitrogen, phosphorus and sulfur. This soil organic matter improves the soil's ability to store and transmit water by reducing soil crusts, lowering bulk density and improving soil structure. AWC can be improved by applying organic matter to the surface or by mixing it into the upper few inches. The increase in available water near the surface is especially important at the seedling stage while roots are still very shallow.

Soil Salinity

The soil salinity is the accumulation of water soluble salts in the soil. Excess salts can hinder plant growth by limiting their ability to take up water. Salinity indicators include: increased soil wetness in semiarid and arid areas; white crusting on the surface; white spots and streaks in the soil, even where no surface crusting is visible; and the presence of naturally growing, salt tolerant vegetation such as salt bush and greasewood. AWC can be improved by maintaining salts below the root zone. Also, soil water infiltration should be kept high, evaporation can be reduced with a residue cover, and tillage should be minimized to avoid mixing the lower soil layers with the surface.

Bulk Density

The bulk density of a soil plays a role in AWC through its control of the pore space that retains available water. High bulk densities for a given soil tend to lower the AWC. Soils that are highly compacted, or dense, can limit plant growth because it doesn't allow for proper root penetration. Compaction can be identified through degraded soil structure, greater penetration resistance, higher bulk density, restricted plant rooting, and flattened, turned, or stubby plant roots. Minimizing compaction by reducing the weight of vehicles and the amount of traffic can improve the AWC. If tilling the soil is not an option, then aerating the soil may help avoid soil compaction.

Rock Fragments

Rock fragments are the unattached particles that are 2 mm or larger in diameter and are strongly cemented or more resistant to rupture. The size and occurrence of rock fragments in the soil has significant implications for hydrologic processes, soil temperature, soil erosion, and degradation. Rock fragments reduce the AWC in direct proportion to their volume unless the rocks are porous.



Planting & care of seedlings / site preparation

The best time to start site preparation is usually the fall before planting. First, stake the location of the rows, making sure that the dimensions are right. Ripping the ground prior to winter will help allow snow moisture to saturate the soil as it melts in the spring. This step will also make the pre-planting steps easier. In the spring, one to three weeks prior to your planting, a more thorough tilling is needed (as pictured to the right). Plows, disks, or rototillers can be used to achieve necessary tillage and are available at rental equipment stores. If your planting is going in on a slope, the possibility of erosion must be considered. If there is a chance of unwanted erosion, then leaving the current vegetation in place and doing all the site prep in the spring may be best. Just before planting check your site preparation by completing a shovel test. If the shovel does not go into the soil easily, rototill the site again. The time and energy put toward land preparation will be time well invested.



site preparation / Planting & care of seedlings



If the aid of larger equipment is not an option for you, keep in mind that vegetation should be removed at least three feet on each side of the rows or for at least a three-foot radius around each plant. Seedling survival will be greater if they don't have to compete with other plants while getting established. By removing unwanted vegetation, damage to new plantings by rodents may also be less likely.

Planting & care of seedlings / planting instructions

When deciding on the date(s) to plant your seedlings, there are a few things to keep in mind. Ideally you want to get your seedlings in the ground just after frost is out and before local trees and shrubs begin to leaf out. Most of the seedlings sold by SCCD will arrive to you while they are in their dormant winter stage. By planting them while they are still in this stage, you will be letting them decide when it's safe to bud out. You also want to avoid planting on windy days or when the sun is in full force. Wind and sun will more than likely dry the roots of your seedlings out before you can get them in the ground, which can lead to death. The best planting weather is during cool, cloudy days.

While storing your seedlings it is important to keep them in the same state as they were getting to you. Those seedlings that are still dormant, need to stay that way. The best way to do this is by keeping them in a cool, shaded area. Even refrigeration works well, but not freezing. Don't forget to keep their roots moist. Keep in mind these steps are if your seedlings are still dormant and no foliage is present. If your seedlings have already broke bud, it's important not to expose them to cold temperatures that may freeze the new growth.

When you are ready to plant, remove bare root seedlings from the shipping package and immediately place the roots in a bucket of soil and water (mud) slurry. Carry the plants in this slurry and remove one seedling at a time planting immediately. Never remove a number of trees from the bucket and carry them from place to place with the roots exposed. The general rule is not to leave the roots exposed for longer than 30 seconds, after that root tissue begins to die.

Potted seedlings should be moistened before removal, then grasped at the base of the stem and gently pulled out; the seedlings should come free easily. Do not break the root ball or leave seedlings in sun or wind following their removal from the styrofoam block.

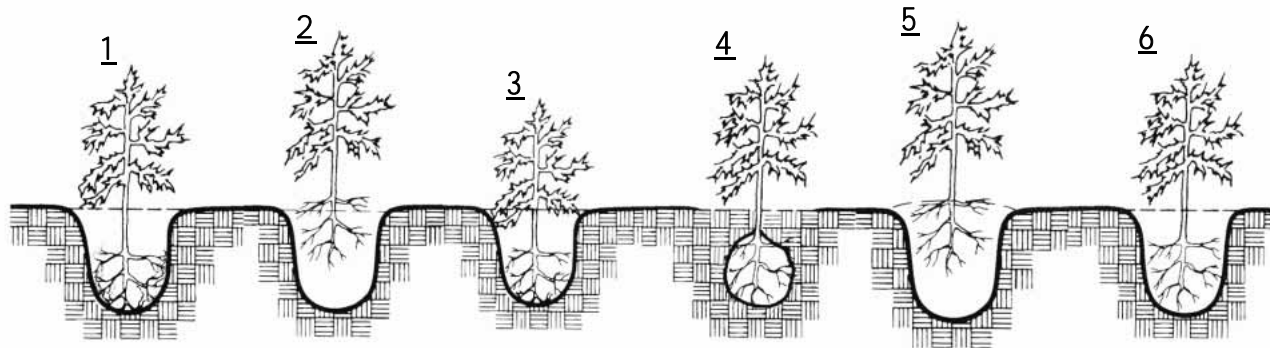
There are a number of different planting techniques that are satisfactory. The object is to get the trees in the proper place at the correct depth with roots straight and the soil packed firmly around the roots. Care should be taken to avoid J-rooting or leaving air pockets around the roots.

With the plant held upright and the roots spread naturally, fill the hole with moist soil, gently pack and water liberally. You can also use a mud slurry mixture as described above to fill in the hole. As the moisture leaves, the soil will then compact around the roots of the seedling. Some settling may occur with this method, so you will want to check back and top off with more soil if necessary.



Death of a Seedling Tree

- Improper storage before planting
- Planted with roots tangled or not spread out
- Lack of water
- Staked too tight
- Weeds allowed to grow up and around the seedling
- Fertilized young seedlings, this can burn roots or over-stimulate crown growth
- Keeping the soil around the roots too compacted
- restricting passage of oxygen and water to the roots
- Bang lawnmowers into them or cut into them with weed trimmers
- Not fencing out livestock, wildlife or rodents
- Weed killer sprayed on them after planting
- Using liberal amounts of salt on sidewalks near them
- Low quality of water used for irrigation



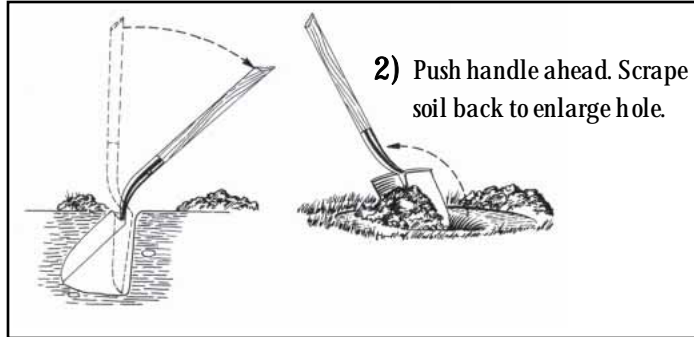
- 1) Roots tangled and/or turned up.
- 2) Planted too shallow.
- 3) Planted too deep.
- 4) Air pocket, soil was not packed around roots.
- 5) Planted on a mound.
- 6) *Correctly planted!*

Planting & care of seedlings / planting instructions

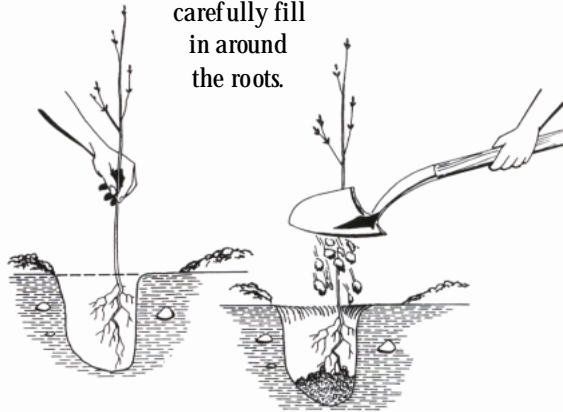
1) Scrape dry soil from surface. Reverse shovel and push into soil



2) Push handle ahead. Scrape soil back to enlarge hole.



3) Place seedling in hole and carefully fill in around the roots.

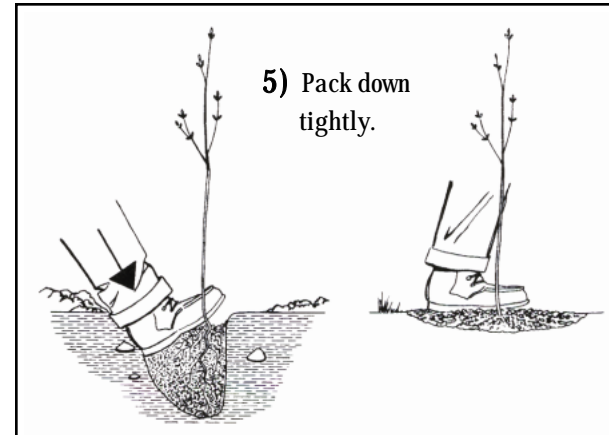


4) It's helpful, but not always necessary, to use your fingers to work the soil around the roots.



This will help get any air pockets out.

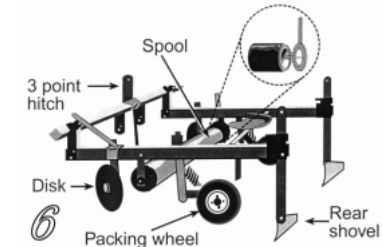
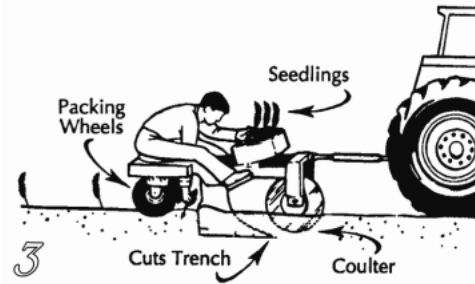
5) Pack down tightly.



planting instructions / Planting & care of seedlings

Use of equipment to assist in large plantings

Check with your local equipment rental store or call the Sublette County Conservation District for further information. You may want to consider splitting up your planting into annual phases. Planting more than 50 seedlings can be very labor-intensive. Planting in phases also allows you to determine if the species you have chose will be successful in our location.



1, 2 and 3) Mechanical seedling tree planter. 4) A Dingo rented from Pinedale Rental assists in the digging process. 5 and 6) Mechanical weed barrier machine.

Planting & care of seedlings / survival aids

Fencing out wildlife and livestock

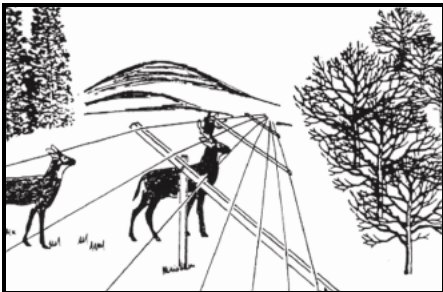
Most young seedling trees and shrubs are a delicious treat for wildlife such as moose, deer, rabbits and porcupine. Livestock can be detrimental as well, usually due to damage from their hoofs if they happen to step on the seedlings. Fencing is the



most effective method to minimize this damage. Wood slat fencing and other wind deterring fencing can also give you a short term solution to snow drifting control while your seedlings mature. Be sure to put the wood slat fencing up-wind of your planting and another type of fencing on the downwind side of your planting. The snow drift that will accumulate will also provide your seedlings with protection during the harsh winter months and additional moisture in the spring when snow melts. If you are going to need to fence out smaller pests such as rabbits, be sure to

use a fencing type such as chicken wire for at least the first 3 feet.

Some species will attract wildlife more than others such as (from highest to lowest): dogwoods, aspens, chokecherry, serviceberry, willows, cottonwoods, native plums and wild rose.





Drip irrigation system

Installing a drip irrigation system is highly recommended for any planting in Sublette County. Your seedlings will need supplemental water for at least the first 3 to 5 years (or until they are well established) depending on your soil type, the species you are planting and your location. By providing extra water, even past the establishment stage, their survivability will increase and they will achieve their maximum growth rate easier. A drip irrigation system also allows you to have complete control over the amount of water your seedlings receive and how often they get it.

Whether you are installing a single line of drip tubing or a multi-zone system, a little planning is needed before you roll out your system. Start with your pre-drawn plan (it's a good idea to work with a copy of your original). If the species selected all have close to the same watering requirements, and your area is small a single zone may be able to handle your entire drip system, otherwise your plants may require multiple zones based on their water needs. The amount of water pressure you have will also determine whether to use a single zone or multi-zone system. There are a number of manufactures of drip irrigation parts and kits. Your local hardware store will probably have everything you need to get started. Your local landscaper can also be hired to install one for you.



Planting & care of seedlings / survival aids

Weed barrier

There are many methods to controlling weeds around your seedlings. SCCD recommends and sells rolls of woven plastic mulch/ fabric that will significantly improve the survival of tree plantings by reducing competition from weeds and also conserve soil moisture. In addition it will help keep soil in place. Different sizes and type are available including a type with a biodegradable center which is helpful in avoiding girdling of the plants as they grow bigger. SCCD currently sells more of an economical option that comes on 300 ft x 6 ft rolls.

If choosing to use this type of weed barrier, it is important to secure the edges of the fabric with stakes or soil. If the wind gets underneath the material it will eventually pull free from the soil. Soil will quickly dry out if its not protected.



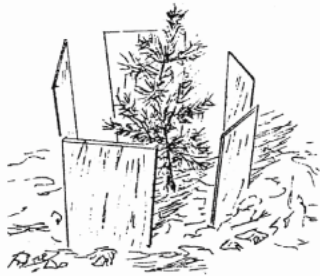
Far left: Weed barrier is laid out overtop of newly planted seedlings. The seedlings are located, then two small cuts forming an X shape is made to pull the seedling up through. Left: an example of weed barrier with a biodegradable center strip. Above: One of the rolls of weed barrier sold by SCCD.

Anti-Transpirant spray

Conifers are very susceptible to moisture loss during winter months. Also the extra sunlight that is being reflected from the snow can cause additional transpiration that leads to desiccation. Trees vary in their tolerance to direct sunlight. Deciduous trees and shrubs are better able to withstand direct sun than conifers. Pine and juniper species are generally more tolerant of direct sunlight than fir and spruce species. Anti-Transpirant spray can be purchased through your local tree care specialist. The thin film-like spray provides a water-impermeable layer on the needles or leaves that help trees and shrubs hold moisture while providing some protection from the sun and wind.

Tree protectors

Shading seedlings and blocking the prevailing winds (usually from the north and west in Sublette County) is critical. Shake shingles or other commercially manufactured shade products can be used around your seedlings. It's important to place these protectors around the seedlings when they are planted. This will help reduce any added stress to your planting(s).



SCCD's seedling tree program

Each year, the Sublette County Conservation District participates in a nation-wide effort to provide seedling trees at nominal costs for the purpose of conservation planting. Through this program SCCD sells an average of 6,000 seedlings each year. The program encourages landowners to plant effective wind barriers to protect buildings, cropland and feedlots, and for erosion control, reforestation and other conservation practices. Landowners wanting to participate in the program must own at least two acres and sign an agreement stating they will not use the seedlings for ornamental plantings.

Each spring SCCD staff travel to Rock Springs to pick up all the seedlings delivered from the Colorado State Forest Service Nursery. Other districts' orders arrive on the same truck and it's a group effort by all to sort the boxes and bundles out.



SCCD's seedling tree program



Seedlings typically arrive in late April to early May and come from the nursery as either bare-root or potted stock.

Bare-root is packaged in quantities of 50 per species. The roots are surrounded by a moisture-holding medium and wrapped with plastic. Seedlings range in top height from 10 to 30 inches.

Potted seedlings are placed in special potting soil and incased in individual 2" X 2" X 7" pods within Styrofoam blocks of 30. These seedlings range in top height from 6 to 12 inches.




Deciduous trees & shrubs

The word deciduous is defined in the dictionary as: falling off or shed at the end of a particular stage of growth; shedding leaves at the end of a growing season.

Deciduous trees and shrubs annually drop their leaves in the fall. This is done to conserve water and energy during the cold winter months. The process also helps reduce damage from the weight of snow fall when their leaves are not present. In other parts of the world deciduous plants may lose their leaves during dry seasons due to varying rainfall amounts.

In this section you will find information for the following species:

	New Mexico Foresteria _____ <i>Forestiera neomexicana</i>
	Lilac _____ <i>Syringa spp.</i>
	Sumac (Skunkbrush) _____ <i>Rhus trilobata</i>
	Caragana _____ <i>Caragana arborescens</i>
	Cotoneaster _____ <i>Cotoneaster acutifolia</i>
	Golden Willow _____ <i>Salix alba vitellina</i>
	Coyote Willow _____ <i>Salix exigua</i>
	Native Willow Mix _____
	Red-Osier Dogwood _____ <i>Cornus serica</i>
	Narrowleaf Cottonwood _____ <i>Populus angustifolia</i>
Quaking Aspen _____ <i>Populus tremuloides</i>	

Red-Osier
Dogwood

Quaking Aspen

Golden Willow

Caragana seed
pod and
branch

Deciduous / New Mexico Foresteria (Privet)

Forestiera neomexicana

Large shrub with low water requirement once established, preferring full sun and well drained soils. Not a native plant, but will grow in protected areas of Sublette County's lower elevations.

Leaves: greyish green

Flowers, fruit: inconspicuous, fragrant, yellow flowers that bloom before leaves emerge. Blackish inedible fruit.

Bark: new stems almost black, mature tan to whitish

Growth form: irregular

Crown density: dense

Cold hardiness: good

Soil considerations: moist, alkaline tolerant

Size: up to 10 ft. tall / 8-15 ft. wide

Elevation: up to 7500 ft

Other: a prized hardwood of the Native Americans to make tools. Pest resistant. Also known as Desert Olive.



1) Close up of berries and leaves. 2) Mature New Mexico Foresteria. 3) Branches and leaves. 4) A grouping of mature Foresteria plants.

Lilac / Deciduous

Syringa spp.

A favorite of conservationists due to the rapid growth, drought tolerance and beautiful sweet scented flowers. Grows into dense walls by sprouting shoots. Great for Sublette County because it tolerates alkaline soil and is very cold hardy.

Leaves: heart shaped, dark green

Flowers: purple or white and fragrant

Bark: grayish brown, smooth to rougher with age

Growth form: round to irregular

Crown density: dense

Drought resistance: very good

Cold hardiness: excellent

Soil considerations: good alkaline tolerance

Size: 10-12 ft. tall / up to 10 ft. wide

Elevation: up to 8000 ft.

Other: provides food for butterflies.

Sublette County location: found in many yards throughout Pine dale and Big Piney.



1) Close up of leaves and flowers. 2) Close up of branches. 3) Overall of Lilacs in a dense row planting.

Deciduous / Sumac (Skunkbush)

Rhus trilobata

Strong root system makes this a great erosion controller and works good as a row in a windbreak. Forms thickets and adapts to a variety of conditions.

Leaves: groups of three leaflets, the middle leaflet often being larger. Wedge shaped at base and coarsely toothed on sides. Changes colors in fall.

Flowers, fruit: Blooms yellow to white in dense clusters yielding bunches of red hairy fruits that contain a nutlet.

Bark: gray-brown, smooth, splits with age

Growth form: irregular

Crown density: dense

Drought resistance: excellent

Cold hardiness: excellent

Soil considerations: excellent alkaline tolerance

Size: up to 4 ft. tall / up to 8 ft. wide

Elevation: up to 7500 ft.

Other: historically been used for medicinal purposes. Flexible branches have been sought after for basketry and rugs.

Sublette County location: Along streams in lower elevations such as the Big Sandy River.



1) Close up of flower clusters, forming before leaves emerge. 2) Berries of the Sumac. 3) Leaf detail. 4) Leaves in the fall. 5) Fall foliage of a mature Sumac plant.

Caragana / Deciduous

Caragana arborescens

Leafy shrub that does well, even in poor soil types. It tolerates harsh winters and full sun. Has extensive root systems that assists with erosion control. Also known as Siberian Pea Tree or Shrub

Leaves: groups of 8-12 leaflets growing on opposite sides of twig

Flowers, fruit: yellow, resembles a tiny snap dragon bloom. Flowers yield pea-like seed pods.

Bark: smooth and olive green, becomes duller with age.

Growth form: irregular or hedge like

Crown density: dense

Drought resistance: excellent

Cold hardiness: excellent

Soil considerations: salt and alkaline tolerant

Size: up to 15 ft. tall / 5-10 ft. wide

Elevation: up to 9500 ft.

Other: native to Siberia. Bee attractant.

Sublette County location: a large caragana shrub standing alone can be found in front of the county courthouse near the front sidewalk.



1) A row of mature Caragana being used as a wind/visual block at a Pinedale residence. 2) Close up of bark. 3) Another look at Caragana bark. 4) Close up of flowers and leaves. 5) Nearing fall, pods will begin to form where flowers once were.

Deciduous / Cotoneaster

Cotoneaster acutifolia

Rapid growing shrub with colorful fall foliage, flowers and berries that attract birds. Grows well in Sublette County because it is cold hardy and tolerates a variety of soils.

Leaves: dark green, glossy, 1-2 inches long with smooth edges.

Flowers, fruit: little cup shaped pinkish-white flowers bloom in small clusters. Blackish to reddish fruit.

Bark: reddish brown, new growth is smooth, turns scaly and rough with age.

Growth form: ovoid to irregular

Crown density: dense

Drought resistance: very good

Cold hardiness: excellent

Soil considerations: good alkaline tolerant

Size: 5-8 ft. tall / 3-5 ft. wide

Elevation: up to 9500 ft

Other: also known as Peking Cotoneaster. Brought to Northern America from China. In the rose family.



1) Overall of Cotoneaster shrub. 2) Close up of late summer leaves and berries. 3) Windbreak of mature Cotoneaster shrubs. 4) Fall foliage.

Golden Willow / Deciduous

Salix alba vitellina

A shrubby willow that, if pruned just right, can grow into a tall tree. Great for conservation projects, such as screens and erosion control, because it grows quickly and forms walls of branches. Prefers moist soil and full sun.

Leaves: 1½-4 inches long with finely serrated edges, long narrow leaves.

Bark: Greyish brown, furrowed.

Growth form: globular to spreading

Crown density: moderate

Drought resistance: poor

Cold hardiness: excellent

Soil considerations: tolerates alkaline and salts well

Size: 35-50 ft. tall / up to 35 ft. wide

Elevation: up to 8000 ft.

Other: not originally found in the wild but has been cultivated since Roman times. Twigs are used in basket making.

Sublette County location: several yards throughout the county bear these large trees - look for a very leafy tree similar to a cottonwood in size and trunk color but with golden branches.



1) A mature Golden Willow. 2) A row of Golden Willows being used as a windbreak for a pasture. 3) Close up of leaves and golden colored branches. 4) Younger Golden Willows during winter months.

Deciduous / Coyote Willow

Salix exigua

It has a rapid growth rate and is great for conservation practices because it forms thickets. Can be used in stream-bank restoration and stabilization. Best to plant in areas that will receive ample moisture.

Leaves: long and narrow, medium-light dull green, not as shiny as the whiplash willow.

Flowers: bushy yellow, resembles cat's tail.

Bark: multi-stemmed, rhizomatous growth form.

Growth form: irregular

Crown density: dense

Drought resistance: poor

Cold hardiness: excellent

Soil considerations: needs to be moist

Size: up to 10 ft. tall

Elevation: up to 9500 ft.

Other: also known as Sand Bar Willow.

Sublette County location: In 2007 the Sublette County Conservation District planted a living snow fence including rows of this shrub on the northwest side of town along Highway 191.



1) Close up of leaves and flower. 2) Another view showing multiple spring flowers. 3) Young Coyote Willows planted in the SCCD's living snow fence North of Pinedale.

Native Willow Mix / Deciduous

Salix lucida subsp. *lasiandra* (Whiplash) and *Salix ligulifolia* (Strapleaf)

Whiplash and Strapleaf willows are part of a “Native Willow Mix” offered by the Sublette County Conservation District. The mix may also include Coyote willows and other native willows. Species mix may vary from year to year. The mix is great for stabilizing stream banks and will grow suckers and spreads. Willows will grow quickly and they work well for many conservation efforts. They prefer damp, heavy soil and should be planted in areas that will receive ample moisture.



Willows make great soil stabilizers as seen in the above photos. The project utilized a number of native species including willows to keep the stream banks in place. Sediment was ultimately reduced and the water quality was improved.

Deciduous / Red-Osier Dogwood

Cornus serica

A medium sized shrub with showy red branches giving this shrub it's common name. Forms thickets, therefore is a good choice for conservation projects, especially erosion control. Prefers moist sites.

Leaves: grow on opposite sides of the twig, 1 ½-3 ½ inches long and 5/8-2 inches wide, elliptical and smooth edged. Long, curved, sunken veins, dull to bright green on top, whitish green and covered with fine hairs beneath. Beautiful reds in the autumn.

Flowers, fruit: Clusters of small white flowers that yield clusters of small whitish fruit.

Bark: color can vary from a golden brown to more typically, a brilliant red.

Growth form: irregular

Crown density: open

Drought resistance: fair

Cold hardiness: excellent

Soil considerations: not suited for dense clays

Height: up to 8 ft. tall / up to 6 ft. wide

Elevation: to 11,000 ft.



1) Spring leaves and branches of a younger Dogwood plant. 2) Close up of the small flowers. 3) Close up of berries produced by the Dogwood. 4) Leaves during early summer found in the Fremont Lake Campground. 5) Fall foliage of well-protected Red-Osier Dogwood plants near the Hoback River.

Narrowleaf Cottonwood / Deciduous

Populus angustifolia

Grows well on stream banks and can be used as in windbreaks when supplemental irrigation or a shallow water table is available. A fast grower and is easy to propagate. Root system makes it a good choice for erosion control.

Leaves: long and narrow, 2-5 inches long, 1/2-2 inches wide

Bark: whitish upper bark, grey and furrowed at bottom

Growth form: ovoid to irregular

Crown density: moderate

Drought resistance: fair

Cold hardiness: excellent

Soil considerations: tolerates alkaline well

Height: up to 50 ft.

Elevation: 5000-10,000 ft.

Other: adapts well to disturbed sites

Sublette County location: Cottonwoods are commonly found in stands along the river banks of Sublette County.



1) Close up of leaves on a mature tree, bark in background. 2) Close-up of bark and leaves of a younger tree. 3) Branches and leaves. 4) Overall of younger tree located at the fishing pond in the Boy de Skinner Memorial Park in Pinedale. 5) Overall of a mature grove.

Deciduous / Quaking Aspen

Populus tremuloides

A mountain favorite that grows into large groves, the name refers to the trembling leaves that quake in the breeze. These native trees do well in Sublette County.

Leaves: 1 ¼-3 inches long with flattened leafstalks. Almost round, finely toothed edges and pointed at the end. Shiny green in summer and turning to beautiful colors in the fall.
Bark: younger bark, whitish and smooth; older bark, furrowed.

Growth form: ovoid to columnar
Crown density: open
Drought resistance: moderate
Cold hardiness: excellent
Soil considerations: prefers somewhat moist, but well-drained soils, loamy and high in organic matter.

Size: 35-70 ft. tall / 20-35 wide
Elevation: up to 11,000 ft.
Other: Most widely distributed tree in North America.
Sublette County location: Very common throughout foothills of the county.



1) Spring leaves starting to bud out. 2) Close up of leaves. 3) Bark of medium aged aspen. 4) Grove of aspens just as leaves are beginning to change to their fall foliage.

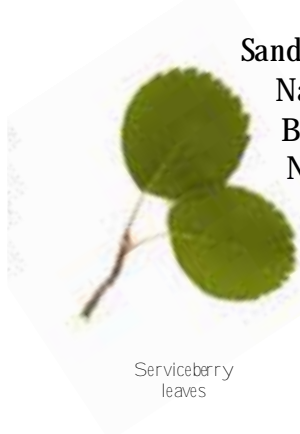
Deciduous fruit bearing trees & shrubs

Fruit bearing trees and shrubs can give back even more including food for many species of birds and other wildlife. Fruit from selected species (including those presented in this guide) can also be harvested and used in a variety of recipes.

Some deciduous fruit bearers flower during the period when they are leafless or just before leaves begin to bud out. The absence of leaves aids in the transfer of pollen; without leaves, wind can better transfer pollen for wind-pollinating plants and insects will be more attracted to leafless plants that are insect-pollinating plants. These species are more susceptible to flower damage due to late frosts seen in the higher elevations of Sublette County. Because of this they may not be able to produce fruit every year.

In this section you will find information for the following species:

- Sand Cherry _____ *Prunus bess eyi*
- Nanking Cherry _____ *Prunus tomentosa*
- Buffaloberry _____ *Shepherdia argentea*
- Native Plum _____ *Prunus americana*
- Golden Currant _____ *Ribes aureum*
- Chokecherry _____ *Prunus virginiana*
- Serviceberry _____ *Amelanchier spp.*
- Woods (Wild) Rose _____ *Rosa spp.*



Serviceberry leaves



Chokecherry fall foliage



Serviceberry



Golden Currant fall foliage and berries



Chokecherry fruit



Wild Rose flowers changing to Rose hips

Deciduous fruit bearing / Sand Cherry

Prunus besseyi

A spreading shrub that bears blackish fruit and attracts birds. A good choice for the desert areas of the county. Grows in multiple stems, massing together to provide a good shield from the wind.

Leaves: leathery and 1-2 inches long and 3/8-1 inch wide, turning red in autumn.

Flowers, fruit: white sometimes pinkish, five petals, growing in clusters along the branches. Blackish edible fruit with large seed.

Bark: smooth and reddish-brown on

younger plants, rougher and grey on older plants.

Growth form: spreading

Crown density: moderate

Drought resistance: good

Cold hardiness: good

Soil considerations: best in sandy to

loamy soils

Size: up to 3 ft. tall / up to 4 ft. wide

Elevation: up to 7500 ft.

Other: also called Western Dwarf Cherry. Leaves and fruit can be used as dye



1) Overall showing blooms. 2) Close up of flowers and leaves 3) Overall during summer. 4) Close up of fall foliage. 5) Overall fall foliage.

Nanking Cherry / Deciduous fruit bearing

Prunus tomentosa

Flowering shrub or small tree with rapid growth and excellent cold hardiness. Fruit is relished by songbirds and works great for home-made recipes.

Leaves: dense green, toothed edges, indented and dark veins.

Flowers, fruit: white five-petal flowers with pinkish center cover the tree and branches, produces edible small round red cherries with cross pollination.

Bark: shiny brown and exfoliating

when mature

Growth form: round to irregular

Crown density: moderate

Drought resistance: good

Cold hardiness: excellent

Soil considerations: good alkaline tolerance

Size: up to 8 ft tall / up to 8 ft wide

Elevation: up to 8000 ft

Other: Can be pruned to grow into a small tree, due to its small size it can be planted under power lines. Originally native to Northern China.



1) A row of mature Nanking Cherry plants in spring bloom. 2) Close up of flowers. 3) Fruit placement on the Nanking Cherry. 4) Close up of fruit. 5) Close up of leaves. 6) A Nanking Cherry plant in the fall which is part of a local windbreak planting.

Deciduous fruit bearing / Buffaloberry

Shepherdia argentea

Silvery leaved shrub with thorny branches and large clusters of bright red edible berries. Grows in thickets and is a good inclusion for windbreaks. Drought and winter hardy. Prefers well drained soils and full sunlight.

Leaves: simple opposite, long and narrow, silvery on both sides. About 1-2 inches long and 3/8 inch wide.

Flowers, fruit: tiny yellow-green four petal flowers. Red fruit ovoid 1/4 inch long and one-seeded.

Bark: silver, scaly twigs

Growth form: round to irregular

Crown density: dense

Drought resistance: good

Cold hardiness: excellent

Soil considerations: tolerates alkaline

Size: 3-15 ft. tall / up to 10 ft. wide

Elevation: up to 7500 ft.

Other: A favorite of birds. Hardy plant, not highly susceptible to pests or disease. Native plant that grows from the Arctic to the Mojave.



1) Buffaloberry planted in 2001 at the Sublette County Fair Grounds. 2) Overall view of a mature plant with berries. 3) Close up of berries. 4) Close up of silvery leaves. 5) A thorn found on a buffaloberry branch.

Native Plum / Deciduous fruit bearing

Prunus americana

Shrub or small tree with many branches, white flowers and edible fruit. Tolerates alkaline soil and grows quickly. Good for erosion control because of spreading root sprouts.

Leaves: narrow, toothed, firm and somewhat wrinkled, dull dark green above and pale beneath. Provides beautiful fall colors.

Flowers, fruit: white, five petals, in clusters, yields small plums.

Bark: dark brown, shaggy bark.

Growth form: irregular

Crown density: open

Drought resistance: good

Cold hardiness: excellent

Soil considerations: good alkaline

tolerance

Size: up to 8 ft. tall / up to 8 ft. wide

Elevation: to 8,000 ft.

Other: it was an important source of food to Plains Indians both fresh and dried. Suckers can form large colonies.



1) Close up of flowers 2) Close up of leaves and fruit. 3) A row of Native Plum plants.

Deciduous fruit bearing / Golden Currant

Ribes aureum

Thornless currant shrub that produces edible fruit. Grows in a bushy fashion, great when used as a row in a multi-row wind break. Rapid growth rate. Transplants well and will form suckers. Birds and other small wildlife love to eat the fruit and hide in its cover.

Leaves: light green, glossy and growing alternately on branch. Three to five rounded lobes. Provides fall colors.

Flowers, fruit: five petal, yellow, in clusters, trumpet shaped. Fruit is glossy with color varying to almost black, and yellow to orange.

Bark: dark silvery gray with numerous raised lenticels

Growth form: round to irregular

Crown density: moderate

Drought resistance: good

Cold hardiness: good

Soil considerations: prefers moist soils

Size: up to 7 ft tall / up to 3 ft wide

Elevation: up to 8000 ft.

Other: in 2007 the Sublette County Conservation District planted a living snow fence including rows of this shrub on the northwest side of Pine Dale along Highway 191.



1) Overall of a mature Golden Currant. 2) Close up of leaves and flowers. 3) Close up showing berry color variation, leaves and bark.

Chokecherry / Deciduous fruit bearing

Prunus virginiana

Flowering and fruit bearing shrub or small tree, often grows into thickets. Native to most of North America and occurs in Wyoming on various terrains. Great for windbreaks. Can be poisonous to livestock.

Leaves: elliptical, finely and sharply saw-toothed. Dark green above, light green and sometimes slightly hairy beneath. Leaves turn showy yellow in autumn.

Flowers, fruit: white, 5 rounded petals, blooms grow directly off the branches to

form long clusters. Small, dark-red, edible chokecherries.

Bark: brown or gray, smooth or becoming scaly

Growth form: ovoid to irregular

Crown density: moderate

Drought resistance: good

Cold hardiness: excellent

Soil considerations: alkaline tolerant

Size: 6-20 ft. high / 6-10 ft. wide

Elevation: up to 9,000 ft.

Other: toxic to horses, especially after leaves have wilted.



1) New chokecherry leaves in the spring near Fremont Lake. Natively they can be red or green in color when budding out. 2) Flower buds forming, close up of bark. 3) Flowers in bloom. 4) Height of mature chokecherry near the Hoback River. 5) Ripe berries. Notice that birds have already consumed most of them. 6) Chokecherry shrubs in the fall shown in a local windbreak planting.

Deciduous fruit bearing / Serviceberry

Amelanchier spp.

A larger shrub that produces flowers and edible berries. Good for conservation projects where moist sandy loam soil is available, has a shallow root system.

Leaves: broad oval shape, rounded at the base growing toothed mainly above the middle part of the leaf. 1-2 inches long and $\frac{3}{4}$ -1 $\frac{1}{2}$ inches wide. 7-9 pairs of parallel veins, but somewhat curved and can branch. Yellow fall color.

Flowers, fruit: five petal white flowers

with narrow separated petals and yellow pollen center. With adequate moisture, it produces small purplish/black berries.

Bark: light brown to grey.

Growth form: ovoid to irregular

Crown density: moderate

Drought resistance: fair

Cold hardiness: excellent

Soil considerations: prefers moist, well drained soils. Does well in acidic soil.

Size: 6-20 ft. tall / up to 10 ft. wide

Elevation: up to 9000 ft.

Other: also known as a Juneberry or Saskatoon.



1) Flowers just starting to bud (notice berries left from last fall). 2) Close up of flowers and leaves. 3) A mature Serviceberry just below the Fremont Lake Dam. 4) Close up of bark and leaves. 5) Close up of berries.

Woods Rose (Wild Rose) / Deciduous fruit bearing

Rosa spp

Flowering shrub grows into thickets and controls erosion while providing ornamental value. It has a good drought tolerance, but prefers moist soils. Adapts very well to disturbed sites.

Leaves grows alternately along twig, finely toothed toward tip. Leaflets are two inches long and one inch wide.

Flowers, fruit: five petals, pink, grow in small clusters, produces red “rose hip” fruit containing nutlets.

Bark: twigs have small thorns, light red-

dish brown in color

Growth form: irregular

Crown density: open

Drought resistance: good

Cold hardiness: excellent

Soil considerations: prefers moist soils

Size: up to 4 ft. tall / up to 4 ft. wide

Elevation: to 10,000 ft.

Other: also known as Mountain Rose or Wild Rose. Fruit is high in vitamin C and provides much nutrition for wildlife and birds, especially since it remains on the plant throughout the winter.



1) Close up of flowers, leaves. 2) Overall of plant in bloom located below Fremont Lake Dam. 3) Close up of thorns on branches. 4) Close up of berries, leaves starting to change color.

Currant Jelly

5 quarts fresh currants
2 cups water
3 cups sugar

Wash the currants and place in a saucepan. Add the water and bring to a boil. Reduce the heat and simmer for 10 minutes. Use a jelly bag to extract the juice. Allow juice to drip overnight. Measure 4 cups of juice and stir in the sugar. Heat to boiling, and cook for 5 minutes. Stirring frequently until the mixture meets the jelly test. Skim off surface and pour into hot sterile jars, leaving 1/4 inch head space. Seal and process in a boiling water bath for 15 minutes, or freeze.

Chokecherry syrup

4 cups of chokecherry juice
1 package powdered pectin
4 cups of sugar

Combine juice, sugar and pectin in a large kettle. Bring to a boil and cook until mixture coats a metal spoon (similar to the way gravy coats a spoon). Pour into warm half pint or pint jars. Process in boiling water bath for 15 minutes.

Rose Hip Tea

Grind approximately 3 to 4 cups of rose hips. Boil in 2 to 3 cups of water for 20 minutes. Strain the liquid to remove the pulp. It's delicious either hot or cold.

Recipes / Deciduous fruit bearing

Buffaloberry spice sauce

Grated rind of 1 orange
1 cup water
2 cups granulated sugar
4 cups buffaloberries
1/4 teaspoon ground cinnamon
Pinch of ground cloves

Combine the grated rind, water, and sugar in saucepan. Mix and cook over a moderate heat for 10 minutes. Add berries. Cook until berries pop. Now add cinnamon and clove and cook for 5 minutes. Stir frequently. Spoon the mixture into a bowl and place in refrigerator to chill. This is a delightful red, spicy sauce and is best served with meat.

Serviceberry pie

2 pints berries
1/2 cup sugar
3 tablespoons flour
1/4 teaspoon salt
1/4 cup butter, melted
1/2 cup flour
1/2 cup dark brown sugar, packed
1 unbaked pie shell

In mixing bowl, sift together sugar, flour and salt. Gently toss the berries with the mixture and set aside.

In a second mixing bowl, using a fork, stir butter, flour and brown sugar together. The mixture should be crumbly.

In the unbaked pie shell, arrange the berry mixture and sprinkle it with the brown sugar topping. Bake the pie at 425 degrees for 40 minutes, or until the crust is golden brown.

Wild Plum upside-down pudding cake

2 1/2 cups flour
1 cup sugar
3 teaspoons baking powder
1 teaspoon salt
1 cup milk
1/4 cup shortening

Combine the dry ingredients then mix in the milk and shortening.
Spread in 9" x 13" baking pan. Drain and pit 2 quarts of
canned wild plums from the previous season (save juice).
Sprinkle plums on top of batter.

Wild Plum upside-down pudding cake, continued

Sauce:
4 cups juice (add hot water to get total if needed)
1 1/2 cups sugar
Red food coloring (optional)
1 teaspoon cinnamon
4 tablespoons margarine

Bring sauce to a boil and pour over plums. Pour plum sauce over the batter in
the prepared baking pan. Bake at 350 degrees for 30 minutes. Sauce will be
on the bottom and cake on top when done. Let cool and either serve from pan
or place on plate upside down with sauce on top.

Nanking Cherry Le Clafouti

5 tablespoons fine, dry whole wheat bread crumbs
1/4 teaspoon ground cardamom
2 to 3 cups pitted cherries
3 eggs
5 tablespoons sifted whole wheat pastry flour
2 cups milk or light cream
1/4 cup light honey

Grease 11 to 12 inch shallow round baking dish or pie pan with butter or oil. Mix bread crumbs with cardamom and dust inside of baking dish with mixture. Spread fruit over bottom of dish.

Beat eggs in mixer. Add flour and mix well. Add milk or cream and beat 3 minutes. Add honey and beat 2 minutes. Pour this mixture over fruit in baking dish. Bake 40 to 45 minutes, until top is lightly browned and puffy. Let clafouti cook to room temperature or chill it. Top will deflate. To serve, cut in wedges and top with whipped cream, if desired.

Nanking Cherry Sauce

Use this sauce with blintzes, over a slice of pound cake, or as an ice cream topping

<i>2 cups pitted cherries</i>	<i>1 tablespoon water</i>
<i>2 tablespoons sugar</i>	<i>pinch of salt</i>
<i>2 tablespoons water</i>	<i>2 tablespoons lemon juice</i>
<i>2 teaspoons cornstarch</i>	<i>1 tablespoon kirsch</i>
<i>1/2 teaspoon grated lemon rind</i>	

Put cherries in a saucepan with sugar and water and simmer for 4 minutes. Using a slotted spoon, remove cherries and set aside. Bring the syrup to a boil, dissolve cornstarch in water, and stir into boiling juice, stirring as it thickens. Add the salt, lemon juice, lemon rind and kirsch and cook, stirring occasionally for 7 minutes. Return cherries to syrup and cook for 3 minutes. Store in sterile jar up to two weeks in refrigerator.

Conifer trees

Coniferous trees are mostly evergreen, have needle-like or scale-like leaves, and produce cones. Often referred to as evergreens due to their ability to remain green throughout the year. The cones of the conifers are where its seeds are found. Most provide high wildlife food value through a number of benefits. They provide year-round protection from harsh weather and their seeds provide nutrition for birds and other wildlife. Pines commonly have needles that grow in multiple clumps of 2 to 5; fir needles are usually softer to the touch, and shorter and spiny in design; spruce needles are typically sharp to the touch, and are also spiny and short in design; and juniper leaves are more scale-like.

In this section you will find information for the following species:

- Lodgepole Pine _____ *Pinus contorta*
 Ponderosa Pine _____ *Pinus ponderosa*
 White Fir _____ *Abies concolor*
 Douglas Fir _____ *Pseudotsuga menziesii*
 Rocky Mountain Juniper _____ *Juniperus scopulorum*
 Colorado Blue Spruce _____ *Picea pungens*
 Englemann Spruce _____ *Picea engelmannii*



Colorado Blue Spruce branch



Ponderosa Pine bark



Ponderosa Pine branch



Rocky Mtn Juniper branch

Douglas Fir cone

Conifer / Lodgepole Pine

Pinus contorta

A widely distributed pine tree, very common in Sublette County. Excellent drought resistance however droughts make it susceptible to the fatal Mountain Pine Beetle. Can withstand the county's winter.

Leaves: evergreen needles in bundles of two, 1 ¼-2 ¾ long stout and often twisted, yellow-green to dark green.

Cones: ¾-2 inches long, egg shaped, stalkless, one-sided at the base. Yellow-brown, remain closed for many years, cone scales raised, rounded with tiny slender prickle.

Bark: light brown to yellowish and grey, thin and scaly.

Growth form: conical to spire like

Crown density: open

Drought resistance: excellent

Cold hardiness: excellent

Soil considerations: prefers sandy, loamy soils. Can grow in nutritio nally poor soil.

Size: 35-80 ft. tall / 15-30 ft. wide

Elevation: 7000-11,000 ft.

Other: the name refers to the use of the slender trunks by Native Americans as poles for their teepees; the straight poles were later prized for log homes.

Sublette County location: along the road out of Pine dale to Elkhart Park.



1 and 2) Variations of mature Lodgepole Pine shapes. 3) Close up of needles and cones. 4) Close up of bark on mature tree.

Ponderosa Pine / Conifer

Pinus ponderosa

This tree has a long lifespan yet a moderate growth rate. Needles are distinctively long and grow from the fascicle in bunches of 2 or 3. Needs well drained soil.

Leaves: two or three evergreen needles in a bunch, very long 3-5 inches. Dark green thick and flexible.

Cones: 2-6 inches long, egg shaped, scales ending in sharp prickle, reddish-brown.

Bark: blackish or dark red-brown,

rough and furrowed into ridges.

Growth form: conical to ovoid

Crown density: moderately dense

Drought resistance: excellent

Cold hardiness: excellent

Soil considerations: tolerates alkaline well. Prefers loamy soil.

Size: 60-100 ft. tall / 15-60 ft. wide

Elevation: up to 9000 ft.

Other: also known as the Western Yellow Pine. Native Americans ate seeds and used pitch as torch fuel.



1) Close up of bark of mature tree trunk. 2) Close up of bark of inner branch. 3) Close up of needles and cones. 4) Close up of needles. 5) Mid-aged Ponderosa. 6) Mature trees at the Pinedale Cemetery.

Conifer / White Fir

Abies concolor

Very large silvery fir. Great drought hardiness once established and excellent cold hardiness. Long living.

Leaves: flat, blunt, silvery-green to silvery-blue needles spreading almost at right angles in two rows, curved upward on upper twigs, 1½-3 inches long.

Cones: 3-5 inches long, scales wider than long and longer than their short-pointed bracts.

Bark: younger trees have smooth grey bark. Older trees' bark is rough ashy grey with deeper furrows and big wide ridges and very thick bark, up to 6½ inches.

Growth form: conical

Crown density: dense to moderate

Drought resistance: very good

Cold hardiness: excellent

Soil considerations: does well in clay, loam, sandy, acidic and well drained soils

Size: 60-100 ft. tall / 20-35 ft. wide

Elevation: 6000-9000 ft.

Other: ozone tolerant.



1) A group of mature White Fir trees. 2) Close up of branch end. 3) Close up of needles. 4) Bark of a mature White Fir trunk.

Douglas Fir / Conifer

Pseudotsuga menziesii

Tall gorgeous evergreen tree. Native plant with excellent cold hardiness, will live long but grows slowly.

Leaves: $\frac{3}{4}$ -1 $\frac{1}{4}$ inches long needles, blunt, white-stripped beneath and thin-stalked.

Cones: three-forked bracts, or small leaves, between the scales of the cones. This is a unique feature that distinguishes this tree from all other conifers.

Bark: when young, whitish grey and smooth, later becoming red-brown and very scaly and in old age very rough,

thick and deeply furrowed.

Growth form: conical to pyramidal

Crown density: dense

Drought resistance: good

Cold hardiness: excellent

Soil considerations: does well in clay, loam, sandy, acidic, alkaline and well drained soils

Size: 70-100 ft. tall / 20-35 ft. wide

Elevation: 6000-9000

Other: one of the lumber industries top harvested trees. The Douglas Fir is one of the tallest trees, some known to have reached heights of 300 feet. Ozone tolerant.

Sublette County location: this tree can be found throughout the Fremont Lake Campground.



1) Close up of bark of mature tree trunk. 2) close up of needles and bark on younger tree. 3) Close up of needles and cones. 4) A Douglas Fir located in the Fremont Lake campground. 5) Mature trees.

Conifer / Rocky Mountain Juniper

Juniperus scopulorum

Overall appearance is very different to most evergreens due to the shape and growth of its needles. Makes a denser windbreak even in a single-row planting. Can be tall and pointed-topped, but sometimes has shrubby appearance.

Leaves: small and growing pressed together to make scaly appearance. 1/8 inch long, grow into fingered evergreen fronds. Grey-green to greenish-blue in color. Young leaves are needle-like, while mature leaves are scale-like.
Bark: Reddish-brown, thin and stringy with twisted ridges.

Fruit: Dusty-blue berries, they smell like Gin when smashed open.
Growth form: pyramidal to irregular
Crown density: dense
Drought resistance: excellent
Cold hardiness: excellent
Soil considerations: excellent alkaline tolerance

Size: 15-50 ft. tall / 10-35 ft. wide
Elevation: to 9000 ft.
Other: some junipers have been known to live to be 200 years old.
Sublette County location: can be found around Fremont Lake and throughout the campground.



1) A windbreak of mature Rocky Mountain Junipers. 2) A local windbreak/snow fence, planted over 10 years ago with seedlings purchased from SCCD. 3) Close up of needles and berries. 4) Close up of a mature tree trunk.

Colorado Blue Spruce / Conifer

Picea pungens

Grand evergreen tree, growing up to 100 ft. tall. Slow growing but long living and cold hardy. Strong tree, excellent choice for windbreaks. Fairly drought tolerant once established.

Leaves: evergreen needles extend from nearly all sides of twig, stiff, pointy and blue-green.

Cones: 2-4 inches long, chestnut brown, tough spreading scales with ragged edges.

Bark: pale to dark grey and brown, thick and furrowed.

Height: up to 100 ft.

Growth form: conical to pyramidal

Crown density: dense

Drought resistance: good

Cold hardiness: excellent

Soil considerations: does well in moist, acidic, and well-drained soils.

Size: 70-100 ft. tall / 20-35 ft. wide

Elevation: up to 9500 ft.

Other: in 2007 Suttle County Conservation District planted a living snow fence with rows of this tree on the north-west side of Pinedale along Highway 191; the trees were about two feet in height at the time of planting.



1) Bark of mature tree. 2) Close up of needles. 3) Mature Colorado Blue Spruces in the Boyde Skinner Memorial Park in Pinedale.

Conifer / Engelmann Spruce

Picea engelmannii

Tall evergreen with very good drought resistance and cold hardiness. Slow growing but long living, some have reached ages of 350-500 years. Down sweeping boughs.

Leaves: 4-sided, flexible needles mostly 3/4 to 1 inch long, not as sharp as other spruces.

Cones: 1-2 1/2 inches long, chestnut brown, papery scales often crowded at the top of the tree.

Bark: light brown, thin and scaly

Growth Form: conical to spire like

Crown density: dense

Drought resistance: very good

Cold hardiness: excellent

Soil considerations: prefers loamy, or-

ganic, moist but well-drained soils.

Size: 60-120 ft. tall / 13-30 ft. wide

Elevation: 8000-11,000 ft.

Other: wood from this slow-growing tree in high altitude is used to make acoustic guitars and harps.



1) A mature Engelmann Spruce at the Sublette County Court House in Pinedale. 2) Close up of needles and small cones. 3) Another look at needles and cones. 4) Bark of mature tree.

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the Sublette County
Conservation District, 2008



Ponderosa Pine
branch



Wild Rose
branch



Colorado Blue
Spruce needles



Ponderosa Pine
bark



Caragana
seed pod



Golden Current
leaf



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