Care and Maintenance of Conservation Seedlings

Well, your conservation seedlings whether they be trees or shrubs have been planted. Now, time to sit back and watch them grow, right? Wrong! You can't just assume these seedlings won't need any assistance from you to grow into mature shrubs and trees. Think of these seedlings as babies, they are vulnerable to the outside world and need some nurturing and this will improve their chances of surviving. Now, you can expect a few seedlings not to make it and that is normal. This guide is going to assist you in making sure you get the best survival rate you can with the assistance you need. The first rule in tree planting is to NEVER add synthetic fertilizer unless you have had a soil sample done to tell you what you will need. The best thing to use is organic material such as manure, compost, and the best of all fish guts.

Weed Control

Second only to site preparation, in regards to the most important to insure survival of your seedlings, controlling the weeds and other competing plants will insure a healthy planting. Eliminating weeds and other competing vegetation is crucial for the first 5 years of the plantings life. Then again, as the trees grow and establish other woody vegetation (mulberry, elm, ect) will volunteer near the planting and start to compete and in some cases outperform the seedlings you planted. There are several ways to keep weeds under control. These include mechanical or hand cultivation, mowing or shredding, mulching, and chemical control. Now, it should be pointed out that you can combine these weed control options for what is best and available for your management plan.

Mechanical or hand cultivation is a very effective way to control weeds and cool season grasses from around the seedlings. When you use this method, you need to clean an area at least three feet in diameter around each seedling and to avoid damage to the root system, stay at least 6 inches away from the stem and till no deeper than 3 inches. You may need to do this form of cultivation two to four times during the growing season, depending on how fast and tall the weeds and cool season grasses grow. But, this way of weed control should only be used in the first 2 years of planting, after that a new form of weed control should be found.

Mowing is an easy alternative for weed control, but it is also a poor alternative and in some cases it is the only option on highly erosive ground and areas that are thick with vegetation. Granted, mowing will reduce fuel buildup, rodent cover, and make the planting site more accessible for other management actions. With this said, it does very little in reducing competition for moisture and nutrients for the seedlings from the weeds and grasses, especially brome grass the 'green death' to most seedlings. You also will find out that damage to the seedlings with getting to close to the plants with the mowing mechanism. If you do decide to mow, you will need to mow as often as possible to keep the seedlings visible.

Mulch comes in a variety of forms. The two main forms of mulch come in organic and plastic fabric which is also called weed barrier. What is the purpose of mulch? The main purpose of mulch is to keep weeds away and also to conserve soil moisture.

Organic mulch around trees is best in the form of wood chips, not lawn waste. To lay down organic mulch, the best thing to do is to put down a herbicide around the seedling in a three feet diameter around

the seedling. As the seedling gets older, you will put the organic mulch down out to the drip line or the area beneath the branches and end at the tips of the branches, but stay six inches away from the main stem so the mulch does not touch the tree at all. What you are doing is replicating what happens in the natural woods. As old tress fall, they start to compose and release their nutrients back into the soil, but at the same time act as a mulch to keep the moisture in the soil and to suppress the grasses and weeds that grow in the understory. It is best to keep adding organic mulch each year, but never to make it more than 6 inches deep all the way around.

Fabricated weed barrier comes in many sizes and forms. The two forms that are most common is weed barrier mats and weed barrier rolls. Now, the weed barrier mats come in squares that are placed around each seedling, specifically the trees because fabricated weed barrier reduces the suckering of shrubs. Anyway, the mat is placed down around the seedling and four staples go on the four corners while a fifth staple goes next to the seedling. The other form is the weed barrier rolls that are best installed by a machine and will cover up the ground completely around the seedling and between seedlings. A word of caution when using the fabricated weed barrier and that caution is that you will need to either pull up the weed barrier or cut the weed barrier back so it does not strangle the tree and cause the tree to fail and die.

(NOTE: The use of trade names in this publication is for the convenience of the reader and does not imply any endorsement or criticism of similar products not mentioned by the Lower Elkhorn Natural Resources District)

Herbicides when applied in the proper amount and at the right time can do an excellent job of controlling weeds. Herbicides can be lumped into two categories: pre-emergence herbicides and post emergence herbicides. When using any chemicals, please read and follow the label instructions. Improper use of chemicals can lead to poor weed control or injury to the seedlings.

Pre-emergence herbicides control vegetation before the seed germinates. The key for utilizing pre-emergence herbicides is to do so before the weeds start to emerge and take over and also to activate, pre-emergence need at least on inch of rainfall to activate them so this is another reason to water seedlings right after they have been planted. Examples of pre-emergence herbicides include Pendulum, Princep Caliber 90/Simazine 90, and Surflan A.S. and are applied to the soil surface after the trees and shrubs have been planted. Weed residues, prunings, and other organic trash should be mixed into the soil or removed totally prior to any application of pre-emergence herbicides.

Post emergence herbicides are applied directly to the foliage of actively, established growing weeds. There is a word of caution with this; if you spray any of this on an actively growing seedling you can cause damage or even worse, death to young seedlings. As the trees and shrubs get older, as long as you stay away from the foliage, you will be fine. Especially new foliage as it emerges can be susceptible to chemicals. For young seedlings, putting a 5 gallon bucket over the seedling and spraying can help reduce chemical drift or contact on the tender plant. How effective the post emergence herbicides are is critically tied to suitable contact with the shoots and leaves of the objective plants. Also, as woody volunteers start to come in, cut them down as close to the ground and douse them with the post emergence herbicide to kill them at the root so you don't have them sprouting out again. Some post emergence herbicides include glyphosate, 2,4 –D Amine, and Poast. Additives can also be utilized such as crop oil concentrates and surfactants to help with the herbicide uptake. For further information about herbicides, please look into purchasing the Guide for Weed, Disease, and Insect Management in Nebraska Book through the University of Nebraska Extension. Your local extension office will have them available.

Watering

Trees and shrubs need watering, especially when they are just seedlings. It is recommended that after planting has been completed to give each seedling a hearty drink of a half to one full gallon of water in order to get rid of the air bubbles, activate any pre-emergent herbicides you may have put down, and also keep the roots moist for their first few days in the soil. Additional watering will be critical the first three years of the seedlings establishment. As time goes on, slowly yield back on watering the seedlings and start to make them look for the moisture themselves through their roots. Each seedling will need about 1 inch or a gallon of additional water every week as needed. How do you tell if your seedlings need water? Simple, check the soil - if the soil is bone dry in the first six inches you will need to water the seedlings and the best way to do that is to do it slowly and not just splash all the water on at once. Drip irrigation systems is a idea, but you can also simply drill holes in the bottom of 5 gallon buckets and place them next to the seedling or between two seedlings and let the water slowly trickle down into the soil. If you water too much, you can drown the seedling and this will lead to death. When you over water, you can also cause the roots to stick close to the surface and not go down deep and anchor the seedling like it should.

Do you water when the trees get established? The simple answer is, it depends. If we go into a very dry spell during the summer where cracks can be seen on the surface of the soil and go down a ways, it is best to give the trees some supplemental watering and make sure that if any cracks are exposing roots that more dirt is brought in to close those gaps.

Animal Damage

Livestock needs to be kept out of your newly established windbreak or planting. If not, in a matter of hours horses, goats, sheep, and cattle can trample or eat the seedlings down to nothing. If you are planting seedlings in a pasture where livestock will be periodically grazing, you will need to put up either a permanent fence or a hot-wire to act as a barrier between the seedlings and the livestock.

Wildlife Damage

Deer, rabbits, and mice can see a new windbreak as an all you can eat buffet! Literally, I mean windbreaks are planted in rows and they can just work their way down the row. The best way to keep these varmints from interfering with your planting is to keep the site clean all summer long from grasses, weeds, and woody volunteers. Now, when September comes let everything grow up around the seedlings this will act as a wind barrier from the winter winds and also camouflage the trees in with the other dead growth, but you will have to come back that next spring to cut back the vegetation again.

Warm Season Grasses

Warm season grasses can be established on any sites, but they are highly recommended on sites that are sandy, on steep slopes, or are highly erodible. Warm season grasses can be established either before or after planting of the seedlings. The best times to plant warm season grasses is November 1 – May 31 with the optimum period being between March 1 – May 15. Before planting, the most important weed or grass to get rid of is brome grass. In windbreaks, brome grass can take over and in fact kill a mature tree. When planting, you can drill the seed right into a chemically killed sod area or into a clean tilled seedbed. Now, if you don't drill or plant the seeds into the soil, you will need to double the PLS lbs./Acre so Some mixtures suggested by the Natural Resources Conservation Service include:

Species/Mix	Percent of Mix	PLS lbs./Acre
A. Sideoats Grama	100%	6.8

B.	Sideoats Grama	60%	4.1
	Blue Grama	40%	0.6
C.	Sideoats Grama	35%	2.4
	Little Bluestem	32%	1.6
	Blue Grama	32%	0.5
D.	Sideoats Grama	60%	4.1
	Blue Grama	30%	0.5
	Buffalo Grass	10%	2.3
E.	Buffalo Grass	100%	23.3
F.	Buffalo Grass	37%	8.5
	Blue Grama	63%	1.0

Replanting

As it was mentioned in the start of this publication, you will have some die and when this happens it is crucial that you replant right away if you have extras or wait until the next spring when you can order some more. If after three times of planting one species keeps petering out, simply try a new species. Sometimes, it is best to substitute a new species in where an old one did not make it. Variety is the spice of life and that is no different for tree and shrub species.

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