



## SITE PREPARATION FOR CONSERVATION TREE PLANTING PROJECTS



**GOOD SITE PREPARATION** is the key to a successful tree planting project. Seedlings planted on a well-prepared site will have higher growth and survival rates than seedlings planted on a site with little or no preparation. So what is site preparation? Site preparation is the process of creating soil conditions that will allow either desirable volunteer seedlings or planted seedlings to become established, grow, and survive. This means destroying any and all existing woody and herbaceous vegetation as well as sod forming grasses that will compete with your seedlings for growing space, sunlight, water, and nutrients. The destruction of competing vegetation will greatly improve the growth and survival of your seedlings. A good example of site preparation is the Fall and Spring tillage that many farmers use to prepare their ground for planting agricultural crops. Why is site preparation so important? Site preparation is important because it creates soil conditions that insure good root to soil contact and allows for the growth of the seedling's root system. The major cause of failure in conservation tree planting projects is air pockets in the soil (poor root to soil contact) and soil compaction. Good site preparation can avoid both of these situations.

What is the best way to prepare a site for planting trees? The existing vegetation on your site will dictate how you should prepare the site for planting. The best method for preparing a site where **grass sod** or **alfalfa** are present is to follow these five steps. First, You should mow or shred the existing vegetation two to three weeks before the herbicide application is made.

The best time to apply a herbicide treatment to alfalfa or cool-season grasses is early fall anytime after September 15 to as late as October 15. Pasture dominated by warm-season grasses goes dormant earlier. Therefore, herbicide applications would need to be made in late August or early September.

Next, destroy the existing vegetation with a herbicide application<sup>1</sup>. You can use a herbicide like Fusilade, or Round-up to destroy grass sod. Herbicides like 2,4-D or Banvel can be used to destroy alfalfa. For more information on herbicide treatments see University of Nebraska Extension publication [NF98-363 Chemical Weed Control in Tree Planting Projects, Part II - Post-emergence Herbicides](#).

Allow the herbicide application at least two to three weeks to kill the grasses. Then use a chisel or moldboard plow to break up the dead sod. Next, you should disc and harrow, or roto-till the plowed area to break up soil clods and chunks of sod. Plowed areas may need to be disced more than once. It is important to note that when you are preparing your land for planting you can work either the entire site or just the strips where you will plant the seedlings.

Once the area has been thoroughly worked up allow the area to lay fallow through the winter. The action of freezing and thawing will mellow the soil and help to create an ideal planting site. Finally, you should disc or harrow the soil again in the spring before tree planting. This will break up any remaining soil clods and insure that the soil will close back in around the seedlings after

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<sup>1</sup> 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 Nebraska Forest Service or Lower Elkhorn Natural Resources District.

they are planted.

If you are planning to use water conservation mulch then the NRD recommends that you prepare the entire site or till strips that are at least 8 feet wide. This will make it much easier to lay the mulch down correctly.

from the site.

**Crop land** should not need to be prepared like pasture or sod bound sites. However, we recommend that you follow these three steps to prepare a crop land site for tree planting. First, disc and harrow, or roto-till the crop stubble in the fall after harvesting. It may be necessary to plow heavier soils to break up any deep soil compaction. You can work either the entire site or just the strips where you will plant the seedlings.

Second, allow the area to lay fallow through the winter, the action of freezing and thawing will mellow the soil and create and help to create an ideal planting site.

Finally, you should disc or harrow the soil again in the spring before tree planting. This will break up any remaining soil clods and insure that the soil will close back in around the seedlings after you plant them.

Site preparation for **windbreak renovation** or **reforestation** projects will take extra work. First, you will need to remove the existing trees. This can be done by bulldozing. However, it will be less expensive and more desirable if you can find a market and sell the trees for timber, firewood, or chips. The best time for tree and stump removal by bulldozing is from mid-August till the ground freezes.

Second, once the trees have been removed, the area should be root raked by the bull dozer. The site should also be plowed as often as necessary to break up any deep soil compaction and to remove any remaining roots and trash which are left over from the removal process.

Third, it is recommended that you plant the area to a cover crop the following spring to allow the soil to recover and to insure that all the roots and other large woody material have been removed

Planting the area to a cover crop will help the soil to regain some of its former structure and reduce soil compaction. Soil compaction is a major problem for tree planting since compacted soils are difficult to close around tree roots and difficult for tree roots to grow into. If you choose to plant these areas with a cover crop then you can either harvest the crop or plow it under and disc it down. Either way you will need to disc or roto-till the soil again in the spring before planting.

Site preparation is one of the most important things that you can do to insure the success of your tree planting project. While it may seem like a lot of work to get your site ready to plant tree seedlings, the benefits you gain in terms of reduced need for weed control and increased seedling growth and survival will more than pay for itself in the end.

The Lower Elkhorn Natural Resources District has designed this fact sheet to answer some of the questions that you may have about site preparation for conservation tree planting projects. This information is provided for the convenience of the reader and is not intended to replace personal consultations regarding specific treatments which may apply to each individual's situation.

Site Preparation for Conservation Tree Planting Projects was written by John G. DuPlissis. This publication was printed by the Lower Elkhorn Natural Resources District.

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