Forest Practices Branch
Ministry of Forests

Microsite Selection and the Informed Planter

A CRITICAL STEP

A Planter's Guide to Recognizing Optimum Microsites

Microsite Planting

What is it?

Microsite planting is choosing the best location to plant a seedling to ensure its optimum health and growth. This spot must have most of the good things a seedling needs.

Why do it?

Planters are the last critical link in the long chain of events that strives to grow high quality trees. Being able to quickly select the best microsite *will increase seedling survival and growth* and will greatly benefit the forest that will follow.

What's in it for the planter?

Planting the best microsite does not have to slow you down! Generally, the best microsite is the easiest to plant. You will learn that a good spot, such as a natural raised mound, can have less rock or other impediments to planting.

Easier Planting = Faster Planting

Growth Limiting Factors

Few sites have all the right growing conditions in the ideal amounts. Usually a site is lacking one or more necessary elements to the point that seedling survival and growth is affected. This is a *growth limiting factor*. Some of the most important ones are explained below.

Seedling Requirements and Growth Limiting Factors

The following conditions are necessary for seedlings to survive and grow.

- Air - required by seedling top and roots to grow;
- Light- needed to produce food and foliage;
- Soil - provides structure to support tree and to distribute moisture, nutrients and air;
- Humus - important source of nutrients for tree growth. Well decomposed humus should be maintained when planting a tree.

Soil - The Growing Medium

Soil is critical to the survival and growth of all plants including seedlings. Poor soil structure can limit survival and growth. Pore space in soil is necessary for air, water movement, and for roots to grow. Good soil includes approximately 50% pore space.

Disturbed Soil

When soil is compacted the pore space available for air, water and roots is drastically reduced. When pore space is not available or is flooded, roots will die back.

Avoid planting on skid roads and trails unless instructed to do 50 by your supervisor. The soil here is usually too compacted to support healthy growth of seedlings.

Soil Temperature

Soil temperature significantly affects seedling growth. For example, where the climate is cold and moist, a raised site provides better aeration/drainage than wet, saturated soils and this results in warmer soil temperatures and better root growth.

Soil Water

Soil water is often a critical growth limiting factor. Raised microsites are generally well drained while low microsites are usually moist. Roots need both air and water to grow. Maintaining the proper balance is critical to good root growth.

Moisture conditions vary from site to site and change during the year. If uncertain, ask if the site you are planting has a soil moisture concern and what is the best microsite to select.

Competing Vegetation

Sometimes seedlings must compete with the surrounding vegetation. On sites with aggressive vegetation like salmonberry, thimbleberry and black twinberry, use your spacing tolerance - *plant away from the brush*

Mechanical Site Preparation

After logging, it is sometimes necessary to improve the natural microsites to ensure reforestation success. Treatments may include prescribed burning, herbicides, or more commonly, mechanical site preparation (MSP). MSP is site preparation carried out by machines. Different machines (e.g., disc trencher, mounder, drag scarifier) alter the site in different ways.

What Does MSP do?

- MSP creates well-drained microsites when the soil is too wet.
- MSP creates sites that retain moisture when the soil is too dry.
- MSP creates porous microsites when the soil is too compacted.
- MSP creates raised planting spots that dry out and warm up faster than the surrounding ground on cold sites.
- MSP clears competing vegetation out of the way to give seedlings a head start.

Where an area has had MSP, it is important for you to recognize the best microsites and to know how to plant them. On MSP sites you should be told where to plant. If in doubt - ask your supervisor!

MSP is expensive! It is important to take advantage of MSP treated sites and plant correctly.

What Can a Planter Do?

By learning to better recognize and choose a microsite, a limiting factor or site condition may be avoided and the seedlings will have a better chance of surviving and growing.

The current survival rate averaged for the province, measured two years after planting, is an excellent 87 per cent. You as a planter have contributed to this success.

The Bottom Line

- Microsite planting is very important.
- If you are not sure where to plant...ask your supervisor.
- The results of planting correctly will provide benefits for a long time.