PATCH SCARIFICATION
(such as Leno or Bracke)

Purpose

Patch or spot scarification prepares a cutover or herbaceous covered site to create open microsites. Plant bareroot and container stock, or sow tree seeds through various means of application on the prepared sites.

Suitable Site Conditions

Sites conducive to surface scarification are described as follows:

1. Upland cutover sites.

2. Coarse (sandy) or medium (loamy) texture soils that will not retain water in the scalp for extended periods.

3. Surface conditions free of downed residual material three inches or larger.

- Tops and other related slash are not a hindrance if evenly distributed on the cutover area.
- Excessive slash can disrupt the scalping pattern and result in undesirable spacing.
- Excessive numbers of large surface boulders and shallow mineral soil over and around ledge rock limits performance of the machine.
- Stumps do not hinder operations because there is an automatic release if the scalping wheels get caught.
- The machines will not be effective on fine texture (clayey) soils or frozen ground.
- Leno is the more maneuverable machine since it has no carrying wheels and can be picked up by the prime mover. The Bracke is large, heavy, and has a pair of carrying wheels. It can operate successfully on heavier slash.

Application Timing

Patch scarification can be done any time during the frost-free season. The preferred period is from about August 1st until the trees are planted or seed applied. Patch scarification, however, can be used before August 1st on light soils with small amounts of competition. Sites dominated by upland brush species (hazel, raspberry, etc.) can effectively be scarified but will usually need additional site prep or release with herbicide.

Equipment Requirements

A prime mover is required to pull the Leno or Bracke. They were designed to be pulled by the common 4-wheel drive full length tree skidder equipped with a rear butt plate upon which the

hitch is mounted.

The skidder must have an overhead cable or hydraulic winching device to raise and lower the Leno. The winch must have the ability to lower the 3,500 pound Leno at a slow speed so the axles are not damaged.

There are two ways the Leno can be seriously damaged--by dropping and backing up. The former can bend the axle and the latter can damage the timing mechanism (accumulator). Potential problems should be noted in the skidder contract and the operator held responsible.

On level terrain with light soil, a 70+ HP skidder will suffice. On heavier sites with steep or broken terrain, a skidder with 90+ HP is recommended. Oversized tires are very beneficial. They offer additional traction and allow access through wet sites, which might stop regular size equipment.

Operational Techniques - Leno

The Leno ripping wheels are spaced on a 6-foot center with an 18" cutting width which cannot be adjusted. All spacing control is maintained by a combination of skidder travel speed, travel location to adjoining scarified strips, and proper setting of the timing mechanism in the cutting wheels. Depending upon surface conditions, a certain degree of continuous disturbance occurs between the scalps. About 40% of the site is scarified. A second treatment at right angles to the first pass will scarify about 70% of the area. This is a desirable procedure prior to direct seeding.

Operational Techniques - Bracke

The operational techniques of the Bracke scarifier are very similar to the Leno. The Bracke offers some advantages in that its use is more suitable for "difficult" sites, and adjustments can be made very easily to the scalping spacing.

Seedling Placement

The seedling should be placed on the shoulder of the scalp near the intersection of the organic berm.

Summary

Advantages

1. Cost effective (when compared to other mechanical forms of site prep).
2. Very mobile or maneuverable.
3. Provides for spacing control in hand planting and maximizes planting efficiency.
4. Little maintenance required on machine.
5. Relatively lower impact on the land than broadcast mechanical scarification.
6. Effective treatment prior to direct seeding.
7. Good survival on droughty soils.
8. Reduces competition directly next to the seedling.
9. Minimal topsoil removal.
10. Retains many wildlife habitat values of the site.
11. Equipment may be modified to allow herbicide application while patch scarifying.

Disadvantages

1. Seasonal application.
2. Associated site prep is sometimes required.
3. Cannot be used with machine planting program.
4. May not eliminate need for release.