Root Rake Stirs up Root Rot in the Kamloops Forest Region
Project No. 3.35-5

Douglas-fir plantations established on NSR backlog sites infected with *Phellinus weirii* root rot are susceptible to future yield loss, wind throw and mortality. Conventional site preparation methods, such as deep scarification or ripping, aggravate the problem by cutting up and spreading pieces of infected roots and stumps remaining from the previous stand. Techniques to reduce the level of infectious residual tree material are required.

A trial demonstrating the use of the Beales brush blade and the Dika root rake (a tool used in agriculture) for treatment of root rot infected sites has been established in the Salmon Arm Forest District, under the direction of Hadrian Merler, the Kamloops Regional Forest Pathologist. The objectives of this trial are:

1. to develop an effective and efficient operational technique for reducing the level of disease inoculum on clearcut sites infected with *P. weirii*, and
2. to monitor the effectiveness of the treatment in reducing yield loss and mortality over one rotation.

A mature Douglas-fir stand near Lee Creek in the Salmon Arm Forest District was clearcut logged in 1986-87 after it was identified as a major *Phellinus* infection centre. Although this area is not currently part of the backlog problem, it was chosen for this experiment because of its potential as a demonstration site, being easily accessible and close to the Salmon Arm District Office. Douglas-fir is the preferred species for regeneration and will be planted on the experiment. Other parts of the area not involved in the experiment will be planted with ponderosa pine, a species less susceptible to the disease.

Two replications of three different site preparation treatments have been established over a 12-hectare area: (1) rough bunching of slash (control), (2) bunching plus stump removal with the brush blade, and (3) bunching, stumpping and raking of the root pieces. Each treated area covers about 1.2 hectares. The Dika rake was pulled behind a skidder to windrow smaller root material found up to 40 cm below the soil surface. This treatment also appeared to reduce the soil bulk density and mix organic material into the mineral horizons. The collected slash was then burnt in large piles.

The treated areas were planted with Douglas-fir seedlings in the spring of 1988. After plantation establishment, permanent sample plots will be installed, and measured periodically. Four 20-year permanent sample plots, in which merchantability is rapidly declining because of the disease, are nearby and will provide a good example of stand development to contrast with the treatments.

A group of about 10 industry staff and 15 BCFS regional staff from the Nelson and Kamloops Forest Regions, and a group of about 20 district staff from the Vernon, Kamloops, and Salmon Arm Forest Districts have already visited the site. A videotape of the Dika root rake in action is now available from the Kamloops and Nelson Regional Offices.

For further information on this project, contact:

Hadrian Merler
BCFS, Kamloops Forest Region
515 Columbia Street
Kamloops, B.C. V2C 2T7
(604) 828-4176