

## Whitebark and Limber Pine Fact Sheet 2

### Infected trees - what to do?

Infected trees are not useless and should not be removed. Cutting off cankered branches is not advised as infected trees are likely to be re-infected, and there may well be other infections you did not notice so canker removal will not make much difference.

#### The **value of infected trees**:

While the long-term recovery value of a healthy tree in a healthy stand is very high, and the value of a healthy tree in a heavily infected stand is paramount and the key to recovery (=a plus tree, and after testing indicates genetic resistance, an elite tree), infected trees are not without significant value too. If you search the literature you can find supporting information for the below.

- The infected tree or trees you are looking at may be less infected than the stand average, and may have some degree of heritable resistance they are passing to their offspring and therefore increasing the resistance level of the population.
- Many infected trees are still producing seeds and that is the primary and unique ecological value of the species.
- Many infected trees are still producing pollen and contributing to stand seed production.
- Some infected trees may be exhibiting signs of tolerance to blister rust and these are extremely valuable and rare individuals that we want to include in the recovery population.
- Removing infected trees from a stand reduces the effective population size, genetic diversity, and can decrease the viability and ecological function of the stand overall by reducing the capacity of the stand to fertilize ovules and produce diverse and viable seed.
- The slope anchoring function of these trees is also important; even if trees are infected - they often grow where no other tree species can persist so these ecological roles may go unfilled.
- Removing slow-growing, shade-intolerant limber or whitebark pine may irreversibly change the stand composition to favour other species through succession. Denser stands of more shade-tolerant competitors will not support whitebark or limber pine regeneration. Habitat for their many associate species, and the ecological values and functions of the site may be lost permanently.
- These trees also provide shade and microsites that are key to successful regeneration. Shade can delay snowmelt for 2-3 weeks, providing a very important moisture source for germinants and seedlings that can make the difference to survival. Cumulatively, this also contributes key hydrological functionality for headwater streams in these montane and subalpine habitats by reducing stream temperatures, increasing flow volumes later in the season, and reducing the "flashiness" of peak flows, which can be important to endangered fish species like bull trout and westslope cutthroat trout.
- Cutting off a branch with a canker, or excising the canker with a pruning knife may prolong the life of the tree or limb. But, given that most trees have multiple infections, it may not end up making much difference – the tree is still likely susceptible to rust and will get re-infected next year or in several years. It may also have other cankers you did not notice.