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**To:** Mike Pflaum, Chief of Resource Management and Visitor Protection

**Subject:** (RCSC-4-04) Aspen at Mt. Rushmore National Monument

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At the request of Don Hart, Park Ranger, on 10/15/2003 I examined some unhealthy trembling aspen (*Populus tremuloides*) at the Mt. Rushmore National Monument. Three areas were examined: near the NPS Office, along the east side of the entry road to main parking, and near the trailhead of the Presidential Trail. In each area, three to six trees were examined that were dead, dying, or had evidence of canker disease.

Three different fungal canker pathogens were found. These include *Cytospora* (*Cytospora chrysosperma*), *Ceratocystis* (*Ceratocystis fimbriata*), and *Hypoxyylon* (*Hypoxyylon mammatum*) cankers. Canker diseases caused by these pathogens spread through and kill the bark of aspen. These three canker species are both native and common in the Black Hills.

Reducing man-made wounds is recommended to protect trees from infection by these canker pathogens. However, even minor wounding by wind and insects might be enough to allow infection. Management by reducing tree stresses, such as watering to reduce drought stress, may help lower susceptibility. This is especially important when trees are first planted.

Trees infected with the *Ceratocystis* canker may survive for several years. This canker produces callus folds and target shaped cankers, and was the most common canker type observed along the entry road to main parking. However, decay fungi can enter trees at cankers eventually causing trees to fall. Trees killed by all three canker pathogens should be promptly removed, and those with the callus folds and target shaped cankers should be watched closely for evidence of decay. The larger dead aspen near the Presidential Trailhead are hazards, and should be removed promptly.

Forest Health Management offers a free training course on hazard tree detection and



treatment in the spring. Members of the Mt. Rushmore National Monument are welcome to attend.

As a side note, the older aspen near the Presidential Trailhead had evidence of infestation by two beetle species, the poplar borer (*Saperda calcarta*) and an *Agrilus* borer. The poplar borer larvae develop under the bark and then tunnel into the sapwood, girdling trees. The *Agrilus* borer attacks weakened trees, spreads under the bark, and also girdles trees. The canker pathogens can stress trees, further enabling the borers to attack and kill the trees.

If you have further questions please contact me ([jblodgett@fs.fed.us](mailto:jblodgett@fs.fed.us); (605) 394-6191). Since my specialty covers plant diseases, if you have further questions specifically about the beetles or other insects, please contact Kurt Allen ([kallen@fs.fed.us](mailto:kallen@fs.fed.us); (605) 394-6051).

With best regards,

*\s\ James T. Blodgett*

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