

**Nikki Buhrdorf**

Senior Division Plant Sciences

*Aspen in a State of SADness: A Statistical Analysis of the Decline of Populus tremuloides*

The purpose of this project was to determine the effect of Sudden Aspen Decline (SAD) on the South flank of Grand Mesa. This study was conducted to determine the extent of SAD by studying the severity of secondary invaders and extent of regeneration with respect to elevation. Twenty Aspen stands, in twenty different locations, were studied. The areas were randomly selected for intensity of secondary invaders namely the Poplar Borer (*Saperda calcarta*) and Cytospora canker (*Cytospora chrysosperma*) and Aspen regeneration in these areas. One year's data indicates that SAD is no longer confined to the lowest elevation of Aspen stands, as found by other researchers. The results indicate Poplar Borer and Cytospora canker are now prevalent in the mid-range elevations of Aspen stands. Aspen regrowth is also declining in these mid-ranges, as well as in the lower ranges. As indicated by intensity of Poplar Borer and Cytospora canker and lack of Aspen regeneration, it appears that SAD is increasing in areas to include the mid-elevations of Aspen stands. And quite possibly moving into the higher ranges.