



**If tent caterpillars, and the flies that prey on them,  
were instead caribou and wolves — would we take more notice?**

**For Immediate Release**

**March 12, 2002**

Edmonton . . . SFMN Principal Investigator, Dr. Jens Roland has discovered a correlation between forest tent caterpillar infestations and the amount of forest left standing after an area has been harvested. Says Rowland, “The size of a forest stand has an impact on the mortality of forest tent caterpillars as their infestation begins to collapse.” Dr. Roland’s work suggests that forest tent caterpillars are a critical indicator of the overall health of Canada’s aspen boreal forest, and provides various new options for forest managers who would like to minimize the effects of forest tent caterpillar outbreaks.

The impact of forest tent caterpillars should not be underestimated. For comparison purposes, published research from Minnesota converted the total biomass of forest tent caterpillars to an equivalent weight expressed as the number of caribou. Caterpillar biomass in a one km<sup>2</sup> area is the equivalent of 657 animals. Interestingly, the biomass of the tiny parasitic flies that feed on these caterpillars is the equivalent of 82 wolves in the same one km<sup>2</sup> area.

Given the immense scale of the predator-prey battle going in our backyards, parks, and forests, it is not surprising that the forest tent caterpillar is the principal defoliating insect of trembling aspen in the boreal forest across the country. “During a major outbreak,” says Roland, “forest tent caterpillars can completely defoliate an aspen forest; can completely stop their growth, and with repeated attacks, can eventually reduce the total growth increment by up to four cubic metres per hectare of fibre each year available for use by saw and pulp mills. “While we can’t stop a tent caterpillar infestation,” said Roland, “we don’t want to do anything to prolong it either.”

The research also focused on four species of parasitic flies that are the main enemy of these caterpillars and various viral diseases that also kill forest tent caterpillars. Says Roland, “We were aware that forest cover has an impact on the search behaviour of these flies as they attempt to find their prey, and the rate of spread of the various viruses. The question we needed to answer is—what is the optimum size of this forest cover?”

Roland and his team of researchers sampled 127 sites covering an area of 400 km<sup>2</sup> near Ministik Hills, Alberta in aspen stands ranging in six sizes from as small as .28 hectares to 289 hectares. “What we determined,” said Roland, “is that for the parasites and the viruses to be effective, the size of the forest stand should be a minimum of 100 hectares. We also learned that smaller forest stands, adjacent to those of the optimum size, served as a caterpillar refuge—helping to extend the length of the infestation by several years.”

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