

Trend in Sugar Maple Health on North American Maple Project (NAMP) Plots

For the 19th year, 38 sites and over 1,200 overstory sugar maple trees were surveyed to assess their condition, and biotic or abiotic stress agents. Less than 90% of overstory sugar maples on our NAMP plots were healthy for the first time in a decade (Figure 1). Recent defoliation by the forest tent caterpillar at 13 of the 38 sites has impacted tree health. Average foliage transparency was 25% for the second straight year, and is the highest average recorded over the 19 year history of this monitoring program (Figure 2). Average dieback increased to nearly 10% as long-term tree health impacts from forest tent caterpillar defoliation begin to take a toll on sugar maples. Thirteen NAMP plot-clusters had trees with moderate to heavy defoliation by the forest tent caterpillar in 2006, and 8 of these plots have been defoliated for 3-4 years. An additional plot was defoliated by saddled prominent. Trees with high dieback (greater than 15%) are another indication that long-term tree health has been impacted by defoliation. Nearly half the defoliated sites now have 10-44% of trees with high dieback (Figure 3). A complicating factor is that there was some defoliation by other pests (Bruce spanworm, maple leaf cutter and pear thrips) in years preceding the forest tent caterpillar outbreak. In 2006, the statewide mortality average was 1.2% of overstory sugar maple trees. Three plot-clusters had higher than normal mortality, and 38% of the new dead trees had been defoliated at least once over the past 4 years.

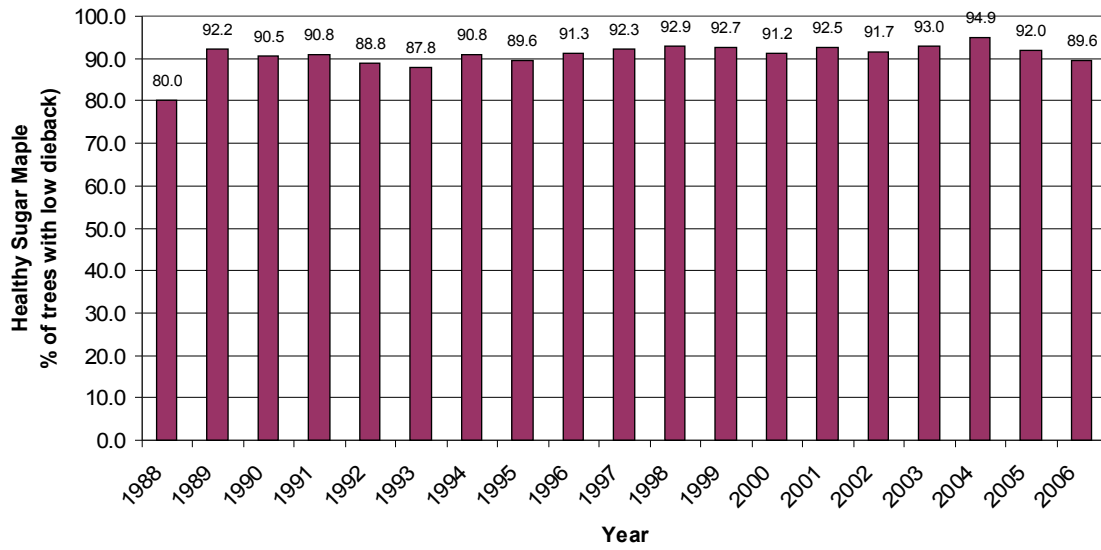


Figure 1. Trend in healthy overstory sugar maple trees on NAMP plots. Health based on trees with less than 15% dieback.

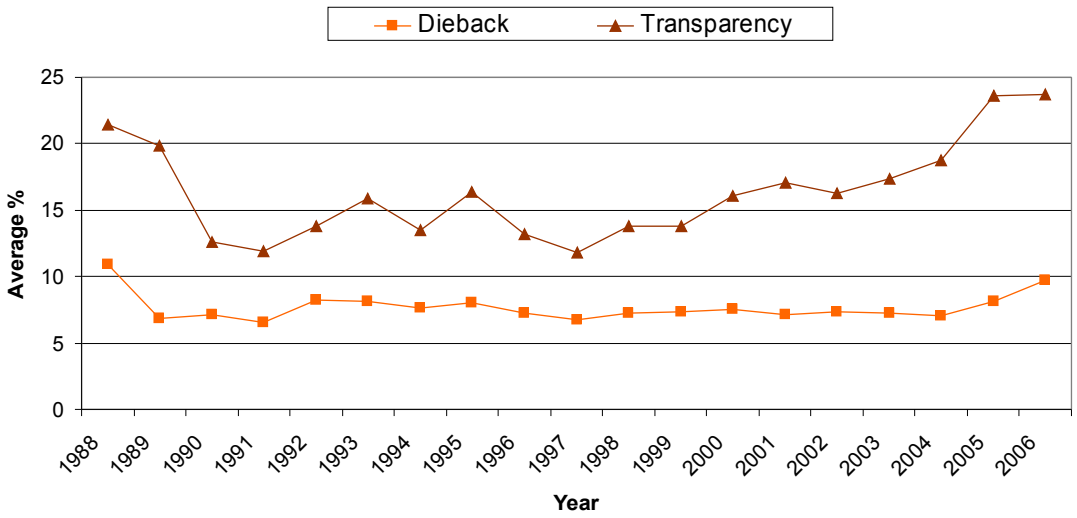
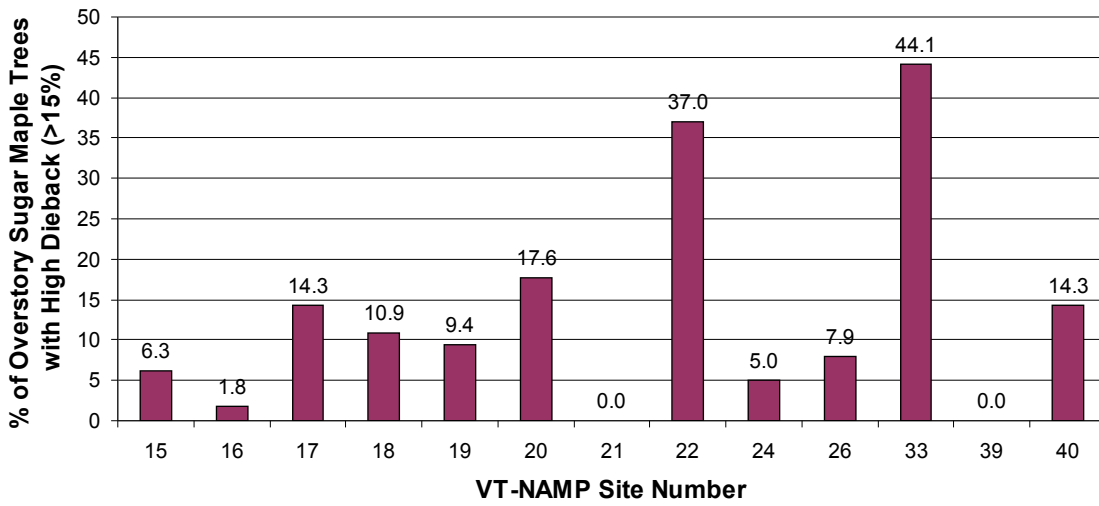


Figure 2. Trend in overstory sugar maple condition from 1988 to 2005.



North American Maple Project, Vermont Sites, VT Dept. Forests, Parks & Recreation

Figure 3. Percent of overstory sugar maple with high dieback following defoliation by forest tent caterpillar in 2006.