

Shaw Mountain Ice Storm Study, 1998-2002

Seedling Density

RESULTS:

1. Variance within-treatment was high: e.g., *Acer saccharum* seedling density in the two Control plots in 2002 was 845000 and 119000.
2. Iced plots had higher tree seedling density than Control plots in almost all comparisons of the three seedling size classes through 2000.
These differences are not statistically significant, in part due to high variance between plots within treatment, as well as the low power of the test.
3. Year-to-year variation in seedling density within a plot is generally large. For example, see *Carya ovata* and *Carya cordiformis*.
4. Total seedling density declined from 1998 to 2000, then rose to its highest point in 2001.
5. High seedling density in 2001 was due almost solely to the establishment of a large cohort of *Acer saccharum*.
6. The two dominant shade-tolerant tree species on the plot followed a similar pattern: both *Ostrya* and *Acer saccharum* were less numerous in 1999. Possible influences are dry weather in 1999, and very low seed crops in 1998, the summer after the ice storm.
7. Several shrub species were found in the study plots.
Differences between treatments for these species are not statistically significant:
Berberis vulgaris, *Cornus alternifolia*, *Cornus racemosa*, *Parthenocissus quinquefolia*, *Rhamnus cathartica*,
Ribes cynosbati, *Rubus allegheniensis*, *Rubus idaeus*, *Rubus occidentalis*, *Sambucus pubens*, *Zanthoxylum americanum*.
8. *Lonicera morrowii*, an exotic invasive shrub species, was present in all plots in 1999.
After the drought year in 1999, the species was rarely encountered in the plots in 2000, 2001, and 2002, and then only in Iced plots.
9. There were greater numbers of seedlings of shade-intolerant species (*Betula* spp., *Populus grandidentata*, *Lonicera morrowii*) in year 2 than in year 1 (species combined, $p = .13$), but numbers of these species were low thereafter.