



GNA Technical Summary #1



FOREST HEALTH MONITORING (TREES) IN THE GORDON NATURAL AREA

(Funded by: USDA Forest Service)

Beginning in 2002 we began to install what would be by 2004 a series of 18 forest health monitoring (see map on web site) plots in the Gordon Natural Area. The plots were established and measured by following a protocols used by the USDA Forest Service and their state partners in all 50 states (http://www.fia.fs.fed.us/library/field-guides-methods-proc/docs/2006/core_ver_3-0_10_2005.pdf). These plots were established to create a baseline data set on the condition on trees (> 5 inches diameter), saplings (> 1 inch and < 4.9 inches in diameter) and seedlings (>1 foot tall and < 1 inch in diameter). All the plots were re-measured the plots in 2009.

Tree Changes

Twenty six tree species occurred on the 18 plots. White ash (18%), red maple (17%) and tulip poplar (15 %) were the most common species. There were 395 live trees at the first survey. Thirty three (33) trees died (8%) by the second survey. Forty four (43) saplings reached 5 inches in diameter giving us 405 total trees in 2008. White ash (12) and red maple (8) made up 46 % of these new trees. Non-native trees (Norway maple, tree-of-heaven, black locust, Paulownia) made up 18% of the trees.

Species	#	% of total (395)
White ash	75	19
Red maple	71	18
Tulip poplar	47	11.9
American beech	30	7.6
Norway maple	30	7.6
Tree of heaven	23	5.8
Black locust	21	5.3
Black cherry	20	5.1
Box elder	23	5.8
Red oak	15	3.8

Sapling Changes

The first sampling period recorded 371 (25 species) saplings. During the first sample we counted the saplings but did not measure the trees. Twenty four (14) percent were white ash and 22% were American beech. Two non-native invasives were common- Norway maple (12%) and tree-of-heaven (5%). In 2008 there were 349 live (+47dead) saplings and all saplings were measured in the subplot. Ten species had more than 10 individuals.

Species	#	% of total (349)
American beech	79	22.6
Black cherry	18	5.2
Box elder	31	8.9
Ironwood	11	3.2
Prunus spp	28	8.0
Red maple	19	5.4
Tree of heaven	16	4.6
White ash	49	14
Norway maple	41	11.8
Witch hazel	17	4.9

Seedling Changes

The first sampling period recorded 280 (14 species) seedlings. Three species made up 86% of the seedlings: tree-of-heaven (36%), white ash (31%) and American beech (19%). By 2008 there were only 29 seedlings indicating the tremendous impact from large deer populations.