

The work to preserve eastern hemlock trees and forests in FY 2009 progressed and showed successes despite increased decline and obvious mortality of trees throughout the park. Areas of particular focus this year have been in the Eastern areas near Cosby, Big Creek and Cataloochee. All of the front country areas received an annual foliar application of insecticidal soap or oil totaling 400 acres. All of the trees in the front country campgrounds and heavily visited areas, if needed, were retreated with systemic insecticides. They were initially treated 4 years ago and the trees were, for the most part, very healthy and free of adelgids. All of the roadside trees were treated in the Fall and Winter of FY 2009 under contract. Another service contract will begin August 2009 utilizing a new systemic treatment that has shown rapid results to control HWA on some of the largest old growth trees that are in poor condition.

Work in the Conservation Areas (CA) consisted of applying a second treatment to the very large trees, establishing new CA's and expanding existing areas. 42 of the 57 existing conservation areas have received a second treatment. Of the over **132 Thousand** trees systemically treated since the project started over 18 thousand of these have been treated in FY 2009 to date. With the returning rains of 2009 many treated trees have shown a positive reaction to past treatments.

Some of the new CA's of interest are located:

- Adjacent to the Gabes Mtn Trail in Cosby adding an estimated 56 acres
- Adjacent to State Route 284 in Cataloochee adding an estimated 68 acres
- Adjacent to the Enloe Creek trail in NC adding an estimated 249 acres

15 new CA's were created in FY 2009 totaling 589 acres!

There were 56 releases of the St predatory beetle totaling 56669, 5 Ln releases totaling 1134 and 1 SS release totaling 55. Positive recovery of beetles has been made in multiple Conservation Areas this year from releases as far back as 2002, however the overall success has yet to be determined and will play out over the coming years.

Sampling of canopy needles for determination of effective length of treatment has been a focus in the fall, with trees that were treated up to seven years ago having been found to be adelgid free. This sampling will give the park a better understanding of proper long term management of the thousands of trees that have been saved.

The Park continues to share information and experiences that it has acquired during the program with neighbors such as State Parks, Private land holdings, and any areas in the hemlock range in a cooperative effort to preserve this unique tree.

Even though there continues to be and will be great loss of the Hemlock forest, through the work of the HWA program in GSMNP, many valuable areas of the Hemlock forest will remain for decades to come.

The following is an example of more specific work being done throughout the Park on the HWA Front. Map is from Cosby Area where much work was completed in the Fiscal years 08'-09'.

