Background: The hemlock woolly adelgid (Adelges tsugae), a relative of the aphid, is a destructive invasive species in the Catskills. Detected in the southeast in the 1960s, this native of Asia has been present in the Hudson Valley and Catskills for the last 25 years. The adelgid consumes the tree's sap and causes Hemlock trees to drop new shoots. In most cases, infestation results in tree mortality within 10 years. The wind and birds are the insect's primary vectors: often HWA spreads along waterways where birds tend to perch for prolonged periods of time.

Hemlock wooly adelgid under magnification (left) and infesting a hemlock tree

Biological Control: Classical biological control attempts to keep populations of invasive species in check by utilizing predators hailing the same region as their target prey or host. Biocontrol agents do not eradicate the invasive species they feed on, but keep population levels very low, and under control. There is now hope that Hemlock Wooly Adelgid can be sustainably managed using biological control. The tiny *Laricobius* beetle is native to the Pacific Northwest region of the United States and has recently been recognized as the most effective predator of HWA. The beetle was approved for release in 2000 and has since been used at several infestations across the state.

Current work: CRISP recently released 500 *Laricobius* beetles. These predators were released at Mine Kill State Park in late November 2013. Mine Kill State Park was selected for release as the stands of hemlock there are still healthy, and in the very early stages of infestation, so the predators will have plenty of adelgids to eat. With this initial collection of 500 bugs, CRISP released about 150-200 per tree and will continue to monitor them over the coming years to make sure they are establishing and thriving.

Actual size of Laricobius

Laricobius eating an adelgid

Plans for the future: In 2014 CRISP plans to release several more collections of *Laricobius* at carefully selected priority hemlock stands. These releases represent the first step forward in the fight to effectively manage HWA and save this keystone tree species.