VEGETATIVE TRIALS ON THE BLACK ASH

Anita Deming, Cornell Cooperative Extension

The 15 acres of coal ash, up to thirteen feet deep with little or nothing growing on it at the old pulp mill site in Willsboro, resembles a barren wasteland. It is highly unstable and could be leaching contaminants into the river.

Our goal is to encourage a vegetative cover that will hold and transpire moisture, thus reducing leaching from this site. The largest constraints to plant growth were found to be low moisture holding capacity, low pH, and a tendency to bind phosphorous.

Several laboratory analyses conducted indicate the ash is hydrophobic which means it repels water. This makes it very droughty for plant growth. It also has almost no sheer strength. Anything heavy will tend to sink right down through it. (This included our two trucks, the mulcher and a back hoe.) No toxic heavy metals have been identified, however this analysis is not complete to my knowledge.

The soil test used for crop growth potential showed these results for the black ash:

- *moisture content 2.5%, which was very low even after a 1/2" rainfall;*
- *available phosphorous was not detected, in fact the ash bound phosphorous making it unavailable;*
- *available potassium at 574, which is very high;*
- *cation exchange capacity at 102.84, very high.*

Given this analysis, the nutrient requirements for plant growth would call for 50 tons of lime per acre, 50 lbs. of nitrogen, and 200 lbs. of phosphorus (no potassium needed).

We decided to try and plant the haradiest and most drought-resistant plants we could: Aldous Little Bluestem, Atlantic Coastal panic grass, Shelter Switch grass, Niagara Big Bluestem, Osage Indian grass, Beat sand Lovegrass, Beach grass corms, and Blackwell Switch grass. These are all warm season grasses adapted to hot droughty, acid, low nutrient conditions.

We put the recommended lime and fertilizer on 3600 square feet divided into nine plots. After seeding and planting the corms, mulch was applied with a bale chopping machine. The mulch on top of the ash will cool the soil and hold some moisture. Hopefully, it will also trap seeds and other organic matter to encourage native plants to get a foot-hold.