What's HAPpening?

A regularly published newsletter from the MERC-Tembec Herbicide Alternatives Program (HAP) Steering Team

The HAP Goal:	*Develop and implement a strategy to regenerate forests on Tembec tenures in northeastern Ontario using alternatives to the application of chemical herbicides.*

Volume 01- Autumn 2013

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An Update On Activity and Progress Related to the Herbicide Alternatives Program (HAP) .

2013 can be considered a banner year for the HAP Steering Team. First off, our work resulted in two First Nation youths being employed in a new Aboriginal Silviculture Assistants program; secondly, this is the third edition of the *'What's HAPpening'* newsletter that we've published. We've also taken on a new official logo for our newsletter. (See it above)

And most importantly, we're visibly moving forward with on-the-ground Herbicide Alternatives Program (HAP) activities. Recently, near Kapuskasing, a project team completed a 'Brush Saw Release' operation in Tembec's Ontario forests. 'Release' is a term that means 'free the tree seedling from competition from other faster-growing plant species that would prevent it from receiving the necessary sunlight and nutrients. (See below for the details)

The HAP Brush-Saw Project: Gordon Cosens Forest

This significant project is described by Jeff Leach, Silviculture Specialist in Tembec's Kapuskasing office, "As part of our ongoing quest to grow conifer trees without the use of herbicides, we observed that in the Province of Quebec, the use of mechanical brush saws is an important component for conifer seedling survival." (There, large seedlings are planted in prepared micro-sites and brush saws are used to cut back faster-growing plants so that sunlight and soil nutrients are more available to the conifer tree seedlings.)

Jeff explains; "Brush saw operations are typically carried out at a specific number of growing seasons after the area has been harvested. Timing of the work is critical."

Outland Reforestation Inc. executed the project, supplying two seasoned brush saw operators for the exercise; Ryan Twardowski and James Liles, both with experience applying different cutting techniques.

Leach continues; "Our recipe, developed on site with James and Ryan, was to make our brush saw cut only on woody vegetation above the large leaf aster canopy and just below the live crown of the woody vegetation i.e. aspen, alder, willow, hazel. This zone generally occurred at 30 centimetres above ground level."

"The crop trees benefited from this prescription because they were generally below the cut line; very little crop tree damage was observed.

James Liles, (shown) and Ryan Twardowski, both assigned to the project by Outland Reforestation Inc. worked hand-in-hand with Tembec personnel as co-contributors to the Ontario Recipe for Site Tending with Brush Saws. Outland Reforestation Inc is active in the forests of Quebec, Ontario, Manitoba and Alberta.

Background

The G015-2013 Project Block was site-prepared in 2011 using two different methods and was planted in 2012. This approach allows Tembec to make comparisons between different types of micro-site creation. The first uses a machine called the Bracke Mounder, has less impact on the site because it doesn't significantly disturb the existing vegetation as much as the second method, which uses a Trencher, a device that makes continuous furrows over the land.

Leach comments on the two methods; "Both seem effective, however the Trencher furrows offer the brush saw operator regulated pathways to access the land".

"[Since the exercise, we have seen that] our larger planted tree seedlings in G015 have succeeded in growing above the large leaf aster canopy and are now able to take advantage of full sun light and nutrients. In addition the crop trees show sufficient girth to resist any snow press."

Brush Saw Cost Comparisons with Other Methods

There are challenges to make the mechanical release process cost-effective.

The labour cost to carry out the brush saw project G015-2013 was $1127.77 per hectare. The project took 14 days in total with the two workers running the brush saws 9.0 hours per day. No safety incidents occurred. Other items not included in the labour cost is project pre-planning and supervision, startup & closeout meetings, site inspections, Tembec safety training, tracking treated boundaries, GIS Map recording & project documentation, all carried out by Tembec. The comparable cost to carry out an aerial conifer release herbicide treatment is $110.00 per hectare; a ground herbicide spray is $280.00 per hectare and $30.00 per hectare to carry out a natural renewal treatment.

Note the trimmed Poplar (Aspen) cut off at about 30 cm. Very few plants were affected when the Ontario method was used.

What follows? "We will be closely monitoring the site to determine the effectiveness of the treatment and to learn more about growing conifer trees without the use of herbicides." says Jeff.

…And that aligns with the HAP goals; applying non-herbicidal, monitoring, learning and continuing on a broader basis.

Update: Aboriginal Silviculture Assistants Summer Term at Tembec's Chapleau and Kapuskasing Sites

This summer, two Aboriginal students participated in the Tembec initiative, spawned by discussions in the HAP. Employed as "Aboriginal Silviculture Assistants" Jessica Raposo and Sheldon Corston worked on the Martel, Romeo Malette and Gordon Cosens Forests.

Below are comments made by one of the two students, Jessica Raposo, who worked in the Chapleau area.

In a note to Don Bazeley, RPF in the Timmins office, Jessica wrote: "I would like to say thank you for the opportunities that you have provided me with this summer, and I greatly enjoyed taking part in the Herbicide Alternatives Project [activities]."

Jessica worked out 'on the land' soon after her training, which began April 29. Her job continued until August 30 providing her exposure to many tasks and responsibilities unique to forestry, including preparatory work for tree planting, supervision of tree plant sites, monitoring of the planting process, and cruising the forest, something she truly enjoyed.

Of the April training, Jessica reported; "The training I received from Tembec was thorough. For example, it prepared me for unexpected conditions like the rapid changes in road conditions on logging roads".

"Driving was an important of my job and I easily travelled 200 kilometers a day, but this did not bother me as I love travelling! So not only did I have a great job, but I also got to enjoy one of my hobbies." says Jessica.

"Another bonus to a lot of driving this summer was that I got to see plenty of wildlife such as a Canada lynx, moose, bears, sand hill cranes, porcupines, wolves, foxes, a marten and skunks."

Consistent with the HAP goals for the Aboriginal Silviculture Assistant program, she performed tree assessments, and tree planting quality assessments, and as well carried out three- and four-year herbicide application prescription assessments.

She commented; "I hope that sometime in the future I will be able to travel back to some of the areas I worked to see how the trees are coming along."

She finished the program quite happy; "It has been a great learning experience and it is wonderful that I will be able to apply what I have learned this summer in school treatment."

Jeff Leach, a Tembec Silvicultural Specialist says; "Jessica was an excellent worker, enthusiastic and did a bang-up job no matter what it was."

He explained; "Having youth participate in the HAP process ensures that a multitude and diversity of perspectives are included in HAP decision making and planning processes."

He had predicted in our last newsletter; "They'll have an interesting and productive summer!" Jessica's words seem to have validated his summer forecast. You can read a summary of Jessica's report on the planting of seedlings in block 143 on the following pages.

Good work Jessica!!!

Did You Know?

Conifer tree fibre from northern Ontario makes it way into pharmaceuticals, cosmetics, packaged foods and electronics. To find out more, visit www.tembec.com/en/products.

HAP Steering Team Profile: Carly Armstrong

Carly Armstrong has been our HAP Team Coordinator since the program began in 2011. She keeps the HAP Team on track; planning meeting logistics, documenting meeting minutes taking photographs, and holding team members accountable for their responsibilities.

Carly has worked in various capacities in the environment and forestry sectors over the past decade and looks forward to collaborating with Indigenous nations and local organizations to move toward more sustainable forestry practices in Northern Ontario.

Associated with the Mushkegowuk Environmental Research Centre (MERC) for many years, Carly has the opportunity to become familiar with the Mushkegowuk territory and communities, and as well, those affiliated with the Northeast Superior Regional Chiefs Forum.

Carly Armstrong brings her background in Natural Resource Management, Forest Conservation and Environmental Communication to the HAP. She has recently begun doctoral work in Indigenous Studies at Trent Unversity.

Carly explains, "Working with the HAP team continues to be a great learning experience for me. From the Elders and Knowledge Holders, to scientists and forestry experts who sit at the table, everyone has taught me so much. I'm honoured to be able to contribute to the HAP program and goals, and ultimately to the elimination of herbicides on the land."

Did You Know?

According to Statistics Canada (2011) the Aboriginal population in Ontario grew by 24.3 percent between 2006 and 2011, 5 times faster than the Non-Aboriginal population.

From the Land – Indian Cucumber

What is it?
Indian Cucumber is a herbaceous perennial plant of the Lily family; its edible roots long-collected by Indigenous peoples. It is now slowly becoming a cultivated crop at some nurseries.

Isabell Souliere, of Missanabie Cree First Nation, who searched out these plants with a friend and took the photos seen here, points out its ecological value, "It is eaten by deer, rabbits, hares and voles and should only be picked a certain way, to not kill the plant entirely." Good advice we all should heed.

Appearance:
Mature plants, from 20-40 cm (8-16 inches) in height, have a whorl of 5-9 leaves on a slender stem about 6" above the ground & a second set of 3-5 leaves above those. (a whorl is a circular arrangement of petals or leaves, radiating from a single point attached along the stem).

Indian Cucumber. Note whorl of 5-9 leaves on the slender stem about 6" above the ground & a second whorl of leaves above those at left-centre of photo. The picker's right hand hold the peppery, cucumber tasting root. Photo Credit: Isabell Souliere, Missanabie Cree First Nation.

The flowers, only a few per plant, and evident in May through June are stalked clusters that hang below the upper leaves. Dark blue-purple berries follow later in the season. Although not poisonous, the berries are not particularly a favourite fruit for many people.

Wild Indian Cucumber plants can grow up to 3 tubers, from 1 to 2 or 3 inches in length. This is the edible part of the plant gathered by First Nation peoples in our region.

Habitat:
The plant, with small downwardly-hanging six-petal yellow-green flowers is usually found in open and mixed woods; forest environments that provide a bit of sun and partial shade and high nutrient, moist soil. (Think of the type of soil habitat where Sugar Maple or Cedars grow.)

Harvesting:
A great source of nutrition; it can be eaten raw in salads or cooked like potatoes. Its edible tuberous roots have a texture like carrot or radish with a peppery cucumber-like taste. Prepared properly, they're a nice addition to a natural meal!

Photo Credit: Isabell Souliere, Missanabie Cree First Nation.

However, Isabell cautions us; "This plant is delicate and should only be picked where it is plentiful." According to a publication by the Faculty of Forestry, Université de Moncton - Campus d'Edmundston, Moncton, New Brunswick), the Indian Cucumber-root is very vulnerable to harvesting since its propagation is difficult."

Isabell suggests; "To ensure continued propagation; take only one tuber per plant (the major root is the one to pick). Leave the smaller, secondary roots to regenerate new plants."

About the Photographer
Isabell Souliere has a deep interest in plants on the land. As one who cherishes what Mother Earth provides, she makes a habit of giving thanks for what she has learned while walking the land to know the plants.

On continual learning about what's on the land, Isabell provides some advice; "It doesn't matter how many years one can study the plants, you can still learn something in your travels. One helpful hint is to take field notes to help identify where they grow and what else grows with them. You can also document when the plant is ready to be harvested and where you found it. Taking a picture can be useful if you are unable to identify in the field which can be used later as a reference along with notes. "

- Until next issue, Happy Adventures on the Land!

Block 143 Summary and Follow-up for Herbicide Alternatives Project

The planting of seedlings in block 143, an area of 111 hectares situated on the Martel Forest and within the Chapleau Crown Game Preserve, went well. In total, 207,136 seedlings were planted. The density was 1,866 stems per hectare (SPH); 168,676 planted *Pinus banksiana* (jack pine), 30,063 planted *Picea mariana* (black spruce), and 7,857 planted *Picea glauca* (white spruce). The average planting quality was 97.6%, which is above the minimum quality standards of 93%. Larger seedlings were planted, however no pictures were taken at that time.

In mid-September a portion of the Block 143 was viewed during an annual Forest Stewardship Council (FSC) audit. A walk through the block showed areas where the seedlings were growing quite well with low levels of competition from other vegetation. Within one area of the block however a number of the large jack pine seedlings had died. Tembec's Silviculture Coordinator confirmed that the large jack pine stock had a mold issue when delivered to the field for planting. Although a number of the seedlings had been culled prior to planting, seedlings not immediately showing mold problems were planted and then subsequently died. Monitoring efforts within the block will continue to confirm the extent of the area requiring a fill plant.

Jessica Raposo and Don Bazeley Divisional Forester, Tembec - Monday, July 15, 2013

Need more information? Contact any of these HAP Steering Team members.

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