

Bugs & Diseases

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Provincial Integrated Forest Pest Management Forum 2014

On April 8, Forest Health and Adaptation (FH&A) held their annual Provincial Integrated Forest Management Forum. Forest Health has been hosting an annual Integrated Pest Management (IPM) meeting for 18 years. In the past few years the audience and needs have changed. Previously there was significant participation from industry, however, the largest participation recently has come from representatives from rural and urban municipalities and cities. Based on several surveys conducted previously, forest industry participation has declined because their needs are met through other outreach, communication and education methods delivered by FH&A. Municipalities and cities are relatively new stakeholders and have identified that they are interested in what we do but that we are not reaching them with our materials or methods.

There were approximately 70 attendees, 13 booths set up by representing groups and 7 presentations. The forum included representatives from the Alberta Government, Canadian Forest Service, City of Edmonton, Strathcona County, Canadian Food Inspection Agency, StopDED, Alberta Invasive Species Council, City of Red Deer, Landscape Alberta Nursery Trades Association, City of Grande Prairie, County of Grande Prairie, City of Leduc, International Society of Arboriculture Prairie Chapter, Agroforestry and Woodlot Extension Society and the City of St. Albert. Our overall goal was to bring together all levels of government and groups that focus on

Don't miss the contest on page 3 !!!

Invasive plants and forest pests to discuss the issues that face Alberta on a land base level; we felt it was a successful first step. An online survey will be distributed to determine if attendees were satisfied with the event and how it can be improved for next year.



Alberta's eye on forest health

Issue highlights:

Provincial IPM Forum	1
Farewell Dale Thomas	2
New FHT	2
Re-Name the Newsletter Contest	3
New Senior FHO	3
Seminar Announcement	4
MPB Summary	5
Progeny Tests	6
RBB Initiative	7
Value of a Tree	8
Forest Health & Adaptation Grants	10
Wonky Wacky Winter Weather	11

Farewell Dale Thomas

This past fall Dale Thomas moved on from his position as Forest Health Officer in Slave Lake. Although he is still living and working in Slave Lake, his new position is as the Wildfire Management Specialist for the area.

The Wildfire Management Specialist positions were recent additions to the department. Their creation was one of the many recommendations of the Flat Top Complex Fire Review. Some of Dale's new duties are to offer additional fire behavior expertise in his area, and to provide a landscape perspective in the management of fuels and wildfires.

Dale has been a long-service employee of the department who began his tenure with the forest health program in the Spring of 2007. He has been an asset to the program for more than 6 years. His extensive knowledge in timber and wildfire management always allowed him to approach pest issues in a calm and informed manner. His contributions to the forest health program will be missed.

I asked Dale if he had anything to share about his time as a Forest Health Officer, and he mentioned that his highlight was working with the forest health team. Out of all the teams he has worked with in his career, he was amazed at how things always moved forward quickly and effectively. Dale appreciated how meeting discussions and decisions would always quickly translate into products or action.



Good luck with your new job Dale!

Mike Undershultz—Edmonton

New Forest Health Technician

Jarrett Totton is the new Forest Health Technologist for Upper Peace. Although he originally hails from New Brunswick, he has been working in the Grande Prairie area for a few years in both GIS and various forestry related positions. He lives with his girlfriend and loves spending time with their young daughter of 10 months. He graduated from the Maritime College of Forest Technology in 2009 with a diploma in Forest Technology and Fish & Wildlife and then an Advanced Diploma in Geographic Information Systems in 2011 from New Brunswick Community College. Since then he has worked in New Brunswick, Manitoba, British Columbia and Alberta as a forest technologist doing cut-block engineering, timber cruising, regeneration surveys and mountain pine beetle operations. He has also applied his GIS skills doing cartography, spatial data analysis, LiDAR post-processing, 3D photogrammetry, and python scripting.



"I look forward to working with everyone here at ESRD," says Jarrett.

Re-Name the Newsletter Contest

Bugs and Diseases was first published in 1989 with the intent to inform staff, forest industry and other forestry-related personnel about current forest health issues. 2014 marks the 25th year that Bugs and diseases has been published! This is quite an accomplishment to keep such an informative publication going, and going strong. Back issues starting from 1997 can be found on the ESRD website.

In the last newsletter we informed our readership that the Forest Health Section and the Alberta Tree Improvement and Seed Centre had merged. With the expanded role of the Forest Health and Adaptation Section, the scope of articles in our publication is also expanding. To reflect this positive change, it is time to re-name the newsletter.

What better way to re-name the newsletter than with a contest. Think of a name that you think is fitting for the newsletter and email to me at Erica.Samis@gov.ab.ca. I will compile all the submissions and publish them in the next newsletter. Everyone will be able to vote on the new name. The winning submission will receive a prize. Maybe there will be other prizes too – first submission received, most creative. Are you thinking of a name now?

Put your creative cap on and submit those names!
I already have a few ideas...

Erica Samis—Edmonton

New Senior Forest Health Officer

On December 16th, 2013, Mike Undershultz became the new Senior Forest Health Officer in Edmonton. Some of his new responsibilities include determining procedural standards and improvements in the detection, monitoring, and survey of damaging forest health agents. With the incorporation of the Alberta Tree Improvement and Seed Centre into Forest Health, some of Mike's other roles are still being worked out.

Mike says, "this new role presents a lot of new challenges, but I'm excited to help continue moving the Forest Health and Adaptation program forward."

Congratulations Mike!



Marian Jones—Red Deer & North Sask Region

Seminar Announcement

Guidelines for transfer of forest tree seeds and opportunities for assisted migration to address climate change in Alberta

Alberta Environment and Sustainable Resource Development (ESRD) and Alberta Innovates Bio Solutions (AI Bio) will conduct two regional seminars to discuss the standards for collection, transfer and use of forest tree seeds on public land in Alberta. Although the provincial standards governing collection and use of forest tree seeds on public land in Alberta were introduced in 2005, there is still confusion among forest practitioners as to what is permitted or not permitted. Consequently, these standards are often seen as an impediment to reforestation and cumbersome to apply and, as such, available opportunities for resource improvement are missed.

Climate change will bring additional challenges to forest regeneration, health and productivity on a shrinking forest land base. To ensure that forestry remains a major contributor to the Alberta economy and forests remain an integral part of a healthy Alberta wilderness, available opportunities for transferring seed to match climatic and other environmental constraints (assisted migration) will have to be utilized within the framework of the Alberta seed use standards. To facilitate this process, ESRD and AI Bio will host two regional seminars for target audiences.

Target audience

- Foresters practitioners who order and use seed for forest companies & their supervisors
- Woodland managers
- ESRD area foresters
- Biologists and other professionals who use tree seed in reforestation or reclamation

Seminar location

- One seminar for central and northern Alberta (TBD –Slave Lake, Peace River or Grande Prairie)
- One seminar for central and southern Alberta (TBD –Rocky Mountain House or Edson)

Timelines: Between the second week of April and second week of May 2014

To facilitate planning, please confirm your intention to participate and your choice of a regional seminar in which you will participate (Northern or Southern) to Dr. Deogratias Rweyonge (ESRD) at Deogratias.Rweyonge@ab.ca or call 780-638-2855 as soon as possible.

Dr. Deogratias Rweyonge —ATISC

2013-2014 MPB Control Summary

Once again it was a very busy year for ESRD staff and contractors who delivered the mountain pine beetle Level 1 control program. Preliminary results indicate that there were 135,565 trees controlled at approximately 17,500 sites. The majority of this work took place in west-central Alberta (approx. 94% of control trees), with less intensive control activities extending southward toward Rocky Mountain House and east into the Martin Hills (east of Slave Lake). Once again this year ESRD crews completed small control programs in Kananaskis Country and Cypress Hills Provincial Park (120 trees).

The vast majority of the program's manpower was provided by contractors. In total there were 12 survey contracts, 10 control contracts, 5 combined survey and control contracts and 4 quality inspection contracts.



Generally speaking the program was delivered this year with minimal problems. As always, staff involved in the program will meet in April, both internally as well as with contractors, to identify issues and work towards improvements for the future.

In addition to ESRD control work this winter, Weyerhaeuser Grande Prairie obtained a grant from the Forest Resource Improvement Association of Alberta for a Level 1 control program. It is estimated that this project will control 35,000 trees within the Gunderson infestation located within their Forest Management Agreement area.



Mike Undershultz—Edmonton

Progeny Tests for Genetic Adaptation

Progeny field tests for trees are genetic trials which establish the genetic value of mother trees and the strength of the heritability of desired traits passed to her offspring. Once high value mother trees are identified based on their offspring's performance in the field, they can be grafted and used to establish seed orchards to produce genetically improved seed for reforestation and reclamation.

The Alberta tree improvement and Seed Centre is currently growing open-pollinated seedlings from wild selected mother parent trees to establish five progeny trials. Two of these are supplementary lodgepole pine progeny trials for the Region J lodgepole pine tree improvement program in the Manning to Rainbow Lake area and three are the first of a series of six to be established for the Region E1 white spruce tree improvement program in the Fort McMurray area.

The Region J lodgepole pine tree improvement program is a Forest Genetic Alberta Association cooperative program involving Tolko Industries Ltd., Manning Diversified Forest Products Ltd. and Environment and Sustainable Resource Development. These two trials composed of 7,735 seedling progeny from 147 selected mothers are to be outplanted in July, 2014 west of Manning and near Rainbow Lake. With the assistance of Climate Change and Emissions Management Corporation (CCEMC) funding, these trials are designed to include parent trees selected from a wide geographic and climatic range to help determine their suitable current climate and location of future suitable climates. This information can be used to direct deployment of improved seed produced from the mother orchard.



Region J tree improvement program
progeny trial stock in ATISC greenhouses

The Region E1 white spruce tree improvement program is also a Forest Genetic Alberta Association cooperative program involving Northlands Forest Products Ltd. (NFPL) and ESRD. NFPL and ESRD are also cooperating with several oilsands companies in progeny testing. Currently, four of the six progeny trials planned for this project are to be established on typical reforestation sites with the remaining two to be located with assistance from oilsands companies on reconstructed oilsands soils. These trials have approximately 5000 seedlings per site representing progeny from 178 parents. The first three trials of the series are planned for outplanting in May of 2015. These trials are also established with parents from a wide range of origins, are supported by CCEMC funding and, in addition to answering some of the questions of climatic adaptation, will also provide information on performance on reforestation versus oilsands reclamation sites.



Region E1 tree improvement program

Invasive Species & RBB

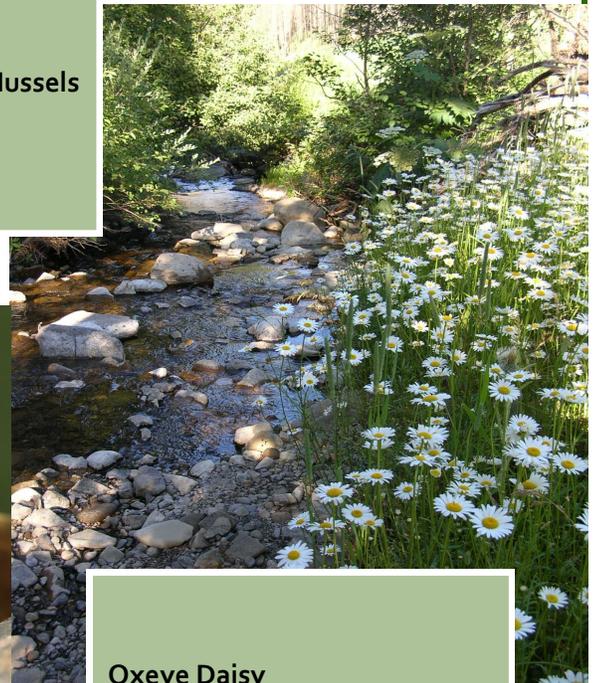
Environment and Sustainable Resource Development is currently reviewing its invasive species programs via the Results Based Budgeting (RBB) process, as part of the Resource Management and Environmental Stewardship line of business. Historically, invasive plant management has been spread across several departmental programs including Forest Health, Rangeland Management and Lands. More recently an aquatic invasive species program has been developed and led by Fish and Wildlife. As part of the review process, questions will be asked around what is the most effective and efficient way to deliver programs and whether a single invasive species program is the best approach. Also, what the scope of an invasive species program would look like in regards to species that are more economical versus ecological threats.

A second phase of the process will look at integration of ESRD programs into other GoA departments and potentially a legislative review. Currently invasive species are regulated by the Weed Control Act or the Pest Control Act. The need for one piece of legislation to enable management of non-native, invasive species in Alberta will be assessed. Subsequently, a focused, singular approach to invasive species management is likely the best approach. The goal is to have an integrated ESRD proposal submitted for the end of 2014 with a decision for approval and funding by March, 2015. A GoA-wide program proposal is to be completed by March 2016.

Brad Jones—South Saskatchewan Region



Dreissenid Mussels



Oxeye Daisy



Gypsy Moth

And now for something completely different... The Value of a Tree

The UK government launched their Biodiversity Strategy/Biodiversity 2020 in 2011 to address their global and EU commitments to halt the decline of biodiversity in England. As part of this strategy the Department for Environment, Food and Rural Affairs¹ published plans for "...a detailed programme of action to repair damage done to the environment in the past..." A component of this program is biodiversity offsetting – "conservation activities designed to deliver biodiversity benefits in compensation for losses, in a measurable way." To evaluate the loss and compensatory amount, the peer-reviewed UK National Ecosystem Assessment² will "...provide(s) values for a range of services we gain from nature..." So then, for example, what is the value of a tree?

A silviculturist blog by the name of europeantrees.wordpress.com³ describes the valuation of two, adjacent Small-leaved Limes (*Tilia cordata*) at Stoke Gabriel, UK. These trees sit just upstream from the former home of Agatha Christie and in a landscape that has changed little since the late 18th century. Eight valuation categories were used on the pair of trees; ecological, environmental, landscape, nursery, holistic, timber, production and sustainable.



Production value can be dismissed off the mark as this category considers the economic value of an annual crop — e.g. apples from an orchard tree. Note: 'lime' trees, not *lime* trees.

Timber Value – Lime wood is not considered a timber product and is neither top grade firewood, but as hardwood can be worth £90 m³ delivered - the timber value where it stands is no more than £24 m.³ For the two trees 12.09m³. X £24 = £290.37. **SUB TOTAL £290.37**

Sustainable Value – The accrued timber value over time when manipulating the tree by pruning to provide a continual fuel supply. This was calculated by using tree life expectancy and average annual heating costs in the UK using an unsustainable resource. **SUB TOTAL £2498.87**

Nursery Value – The largest *Tilia* available for purchase in the UK cost £1628.55 each measuring just over 3m high. Since no trees of similar height and species were available, costs for purchase, delivery and planting £4142.10. **SUB TOTAL £6640.97**

Landscape Value – Two systems developed in the UK can be used to calculate visual amenity values provided by single trees - CAVAT (Capital Asset Value for Amenity Trees) and the Helliwell system. These systems have been used in court cases and insurance claims.

The Helliwell system was used in this case, where a score is allocated to different factors and then converted to a monetary figure. The Total for the two trees is £1862.648
SUB TOTAL £8503.61

Ecological Value - ecological value is primarily a value placed on the tree's benefit to other immediate flora and fauna. A US system, Franks and Reeves: Assessing Ecological Value of Trees, assigns a maximum ecological value, and then factors are applied to reflect the local and downstream ecological effects. Total of Ecological Value = £1983.22. **SUB TOTAL £10486.83**

Environmental Value - a tree's ability in curbing human activity in terms of damage to the environment or in benefits to reducing energy requirements. The widely used i-Tree is peer-reviewed software from the USDA Forest Service which provides urban forest analysis and tools to assess their benefits. It calculates a cost per annum therefore all the years of a tree's life, preceding and expected must be summed. The total of the environmental value = £20210.28 **SUB TOTAL £30697.11**

Holistic Value – The Burmis tree comes to mind here. It has been photographed innumerable times, promoted, visited, broken, repaired, knocked down, propped back up, revered...and it is a dead tree. In the UK, the Tree Preservation Order system actually allows for the public to send in a response to decisions with regards to the future of a tree, thus the holistic value becomes not only real but one of the strongest tree value criteria. The author of the blog chose to value these trees at £2750.00, simply because that's what his time spent on this evaluation would have amounted to.



Total Value of the two Lime Trees, Stoke Gabriel, Devon = £33,4471.11

What would 'your' tree be worth to you?

¹ <http://www.defra.gov.uk/environment/natural/>

² <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

³ <http://europeantrees.wordpress.com/rural-tree-valuation-lime-trees-at-stoke-gabriel-uk/>

Forest Health and Adaptation Grants 2013-14 Fiscal Year

Municipal Mountain Pine Beetle (MPB) Grants

The purpose of the MPB Municipal Grant Funding Program is to assist the Department of Environment and Sustainable Resource Development, Forest Health and Adaptation (FH&A) section in the management of MPB on municipal lands. Forest Health and Adaptation provided the Town of Whitecourt, Woodlands County and Yellowhead County with grants to fund the identification and removal of MPB infested trees on municipal lands.

Alberta Invasive Species Council (AISC)

The Alberta Invasive Species Council, formerly known as the Alberta Invasive Plant Council, is a not-for-profit association of federal, provincial and municipal governments, as well as industry and non-government organizations. It formed in 2004 to promote coordination and understanding associated with invasive plants within the province. In 2013 its name changed to cover all taxa. In 2013-14 the FH&A section provided a grant to AISC to fund staff supporting AISC's four major objectives: to increase awareness of Albertans about the impacts of invasive species; to collaborate with stakeholders with mutual interests in invasive species; the operation of an effective reserve for agencies and stakeholders; and, to enhance the authority, membership and profile of AISC.

StopDED

The Society to Prevent Dutch Elm Disease is an umbrella organization of municipal councils with the mandate to prevent the introduction of exotic pests to urban forests in Alberta. The FH&A section provided a funding grant to StopDED for implementation of programs which meet this mandate.

Tree Canada – Alberta Mountain Pine Beetle (MPB) ReLeaf Program

Tree Canada provides Canadians with education, technical expertise and resources to plant and care for urban and rural trees. The FH&A section provided a grant to Tree Canada to implement its Alberta Mountain Pine Beetle ReLeaf Program. This program provides funding to homeowners, private landowners and municipalities for replacement of trees killed by MPB on private and municipal land. This program has been successfully implemented since 2010.

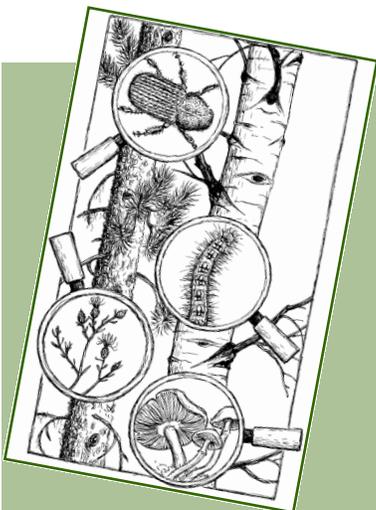
Foothills Research Institute (FRI) – Mountain Pine Beetle Ecology Program

FRI implemented a Mountain Pine Beetle Ecology Program (MPBEP) in 2007 to carry out focused research and investigations related to infestations of MPB in Alberta. The program is directing and funding research, and conducting knowledge transfer and collaboration regarding MPB in Alberta. The FH&A section provided grant funding to help fund research that meets the mandate previously noted.

SERG I – Research Grant

The FH&A section allocated grant funding to SERG to implement a research project entitled "Cold tolerance of mountain pine beetle – Impact on population growth and range expansion in Canada". The objective of this study is to determine lethal cold temperature thresholds for specific life stages of MPB and to quantify MPB winter survival in the field and associated under-bark temperature regimes and tree moisture.

Ashley Romano—Edmonton



Wonky, Wacky, Winter Weather in Review

Wonky, wacky, winter weather
The one just past had that and more
It had all the seasons, sometimes together
Pardon my French but – zut alors!!!

In January we had record warm,
But, also had a lightning storm.
Yet, by February we missed that a bit,
'Cause it was cold enough to freeze a witch's...
bosom

Sun, snow, ice, cold, warm, rain, and wind
It never seemed to settle out
Was it punishment, had we sinned?
Even skeptics had to doubt

Still, if I was a betting man,
And I had me a spare dime
I'd wager that the pesky beetles
Had themselves a really hard time

So, maybe there's a silver lining,
That the weather had us whining
Maybe winter's umpteen extremes
Were not as bad as it seems.

Tom Hutchison—Lower Athabasca Region

Forest Health Officers:
Brad Jones
Calgary
403.355.4854
Brad.Jones@gov.ab.ca

Andrea Sharpe
Hinton
780.865.6992
Andrea.Sharpe@gov.ab.ca

Jennifer MacCormick - Acting
Slave Lake
780.849.7409
Jennifer.MacCormick@gov.ab.ca

Devin Letourneau
Grande Prairie
780.538.5609
Devin.Letourneau@gov.ab.ca

Pam Melnick
Rocky Mountain House
403.845.8277
Pam.Melnick@gov.ab.ca

Caroline Whitehouse
Peace River
780.624.6569
Caroline.Whitehouse@gov.ab.ca

Seena Handel
Whitecourt
780.778.7267
Seena.Handel@gov.ab.ca

Tom Hutchison
Athabasca
780.675.8234
Tom.Hutchison@gov.ab.ca

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