

Annual Regional Forest Health Review and Regional Forest Health Network Meeting
Rideau Valley Conservation Authority – Board Room
3889 Rideau Valley Drive, Manotick
Thursday, October 31 2019
9:30 am to 2:00 pm
Minutes

Attendees: Geoff McVey, Rob Ross, Marie-Paule Godin, Sarah Quann, Michael Petryk, Justin P.-Letourneau, Stephen Clare, Paul Hetzler, Astrid Neilson, Scott Danford, Liam MacIntosh, Scott Porter, Wayne Lauzon, Jason Pollard, Jessica Herrington, Tony Bull, James Brown, Rose Fleguel, Cheyenne Brunet, Caroline Goulet, Paulette Hebert, Lacey Rose, Josh Van Wieren, Tina Orchard, Nancy Young, Tracy Smith, Eric Thompson, Marty Mayberry, Eugene Conners, Jim McCready, Iola Price, Adam Palmer, Manon Besner

- 1. Welcome from Jim McCready**
- 2. Forest Health 2019, Paulette Hebert (Ministry of Natural Resources and Forestry)**

Forest Tent Caterpillar (defoliator)

- About 35,000 ha total defoliation in the province in 2019 compared to over 1 million ha forest affected by FTC in 2018
- Near collapse of FTC population in 2019
- Data collection is now more accurate so peaks appear smaller
- In 2019, affected NE region (Timmins, pockets near Parry Sound and south of Sudbury). Not mapped in southern ON.
- Photos of larvae taken in Leeds-Grenville, evidence of disease and friendly flies

Spruce budworm (defoliator)

- Major outbreak north of Timmins, populations more than double 2018
- Small pocket in Balsam Lake Provincial Park increased in size in 2019
- Pheromone trapping program - numbers in the traps increased in all regions this year
- 7 traps in Pembroke Kemptville district, spike in numbers last year and still high this year

Jack pine budworm (defoliator)

- Now in 3rd year of major outbreak in NW ON
- Over 1 million ha affected in 2019 mostly in centre of outbreak with over 30,000 ha mortality
- Intensive spray program in 2019 in parts of infested areas
- Pheromone traps in Pembroke district (7). Numbers in 2019 were all lower than in 2018
- 2nd instars larvae sampling will be done again this winter in NW ON and used to base management decisions for 2020

Gypsy moth (invasive defoliator)

- Numbers have been increasing in ON for last few years
- Major defoliation in 2018 in S ON

- Over 41,000 ha moderate to severe defoliation in 2019
- In 2019 found in NE region and around Sudbury.
- In Southern region, populations have tripled.
- Was not mapped in E ON but was found in Frontenac county and reported by residents in Perth area. Ground surveys done in E ON. Light or very light defoliation in most areas of southern region
- Dispersal by hitch a ride on vehicles – check for moths and eggs
- Considered naturalized in ON with some natural controls (e.g. birds). Predators include birds, mice chipmunks, and some insects. Encyrtidae wasps were introduced in 1999 as a parasite to GM eggs. Best to wait till winter to remove GM egg masses to allow parasite wasp populations to feed. Pathogens very important to collapse of populations (NPV nuclear polyhedrous virus and EM entomophaga maimaiga fungal pathogen from Japan intro in 1910 and affect once emerge from eggs)

Large aspen tortrix (defoliator)

- Often follows FTC outbreaks
- Outbreak in NE region decreased in 2019 and is down to ~16,000 ha

Cedar leafminer

- A complex of 4 native species that defoliate E white cedar
- 435 ha in 2019
- Repeated defoliation can cause mortality but tree can reflush
- Overwinters in tips of branches, pruning can help along with natural controls
- Found in a few pockets in Peterborough and Kemptville district

Balsam fir sawfly

- 24 ha affected in 2019, two very small pockets in Tay Valley Township and Cobden. Found in some ground surveys in Maberly and Tay Valley Township and Hawkesbury. In most cases population was high but very localized

Emerald Ash Borer (wood borer)

- Mapping was not updated in 2019
- Ground samples were collected and EAB Continues to spread in Pembroke and Kemptville district. So far not found in Algonquin Park
- Several new occurrences in Pembroke District, new occurrence in Golden Lake is 50 km west of previously known limit. Confirmed in Voyageur and Murphy Point Provincial Parks this year

Nitidulid beetle: Monitoring as several native beetles may be able to carry oak wilt. Are tracking movement patterns to better understand potential movement of oak wilt if arrives.

Anthracoze: Small area mapped in Kemptville district

Armillaria: 135 ha of mortality of red pine in Sault Ste Marie area in NE region

Brown-spot needle blight:

- Major impact on Scots pine this year. Tripled area affected mostly in Southern region
- 6140 ha affected and 106 ha mortality.

Beech leaf disease

- Two new detections this year in SW ON in Lambton and Niagara regions.
- Research continues to understand it.
- Symptoms are dark banding and thickening of tissue between veins of the leaves and as progresses will be twig and branch decline

Blowdown

- Mapped 8,490 ha
- Pockets in NW region from Sept 2018.
- Most of blowdown in S region was in Pembroke area and results from tornado on Sept. 21, 2018. Was mapped as 722 ha total with a long stretch along a 35 km long strip east of Calabogie to White Lake. Dunrobin small pocket. Was not able to fly over city of Ottawa this year.
- In 2019 a tornado reported in Orleans and Cumberland are of City of Ottawa, mostly affected urban canopy. Damage was not mapped. .

Beech Bark Disease: mapping was not updated in 2019. Known to occur in entire range of beech in ON. Samples were collected in Renfrew County, and in Lanark highlands and S Algonquin Park this year.

Minor disturbances

- **Imported willow leaf beetle:** 45 ha in North Augusta, Leeds-Grenville along South Nation River. Small amount in Rideau Lakes, light in Montague Township
- **Fall webworm:** along Barren Canyon road, Whitewater region and NW Renfrew county
- **Larch casebearer:** only in a couple of locations this year in Ottawa South and Leeds-Grenville
- **Maple trumpet skeletonizer:** very low numbers found in Algonquin Park this year
- **Red-headed pine sawfly:** risk to young pine plantations. One occurrence in Renfrew County reported. Many natural controls including cold fall weather (which was not the case this year).
- Plenty of leaf spots (Septoria, etc)
- 2 instances of herbicide damage
- Unseasonably cold in late May this year so some cases of cold damage this year

2019 Projects

1. **EAB Parasitoid Wasp Release** (Krista Ryall at CFS): 3 species of parasitic wasps are being released in Canada at sites with a high % of ash and low-moderate EAB population. No new release sites in 2019, schedule of releases for sites that were added to the program in 2017 were completed in 2019. Three sites in Kemptville district and 1 in Pembroke District had releases this year. Renfrew was *Spathius galinae* release. This is a long-term project to release parasitoids to regulate EAB populations in future. Next steps: sampling for recovery of populations. Successfully recovered of *Tetrastichus planipennis* in all release sites surveyed. Want to improve recapture methods and expand wasp-rearing programs.

2. **Beech leaf disease research** (Sharon Reed at Ontario Forest Research Institute): First discovered in Ohio in 2012. First detection in Canada in Elgin County 2017. In 2019, new detections in Lambton and Niagara. Found in Toronto European beech confirms it can affect that species. Low levels may be more widespread than currently known and can go undetected until a certain threshold is reached. Expect it may have spread, undetected, along the entire north shore of Lake Ontario. Contact if seen. Time of infection to time of mortality not yet known. Established 34 long-term monitoring plots in 17 locations in southern region. Mortality from BLD affects smaller and intermediate size trees and beech bark disease kills larger trees. Will continue monitoring at plots for symptoms of BBD, BLD and others. New paper to be published about the nematode, which is, described as new subspecies. Leaves sprayed with nematode inoculum confirm that nematodes are responsible for BLD symptoms. Nematode populations in leaves increase over the growing season. Nematodes can be found in buds after leaf fall and in fallen leaves. Dead attached leaves not as reliable and nematodes not found to survive on attached tree leaves over winter.

Contact paulette.hebert@ontario.ca (May to November). Visit website www.ontario.ca/page/forest-health-conditions

3. Annual Forest Health Review, Stephen Clare, Plant Protection Program Officer, CFIA

CFIA surveys identify pest free areas which means the areas shown on CFIA maps will not agree with the OMNRF maps just shown by Paulette identifying areas of pest damage this past year. All information presented here can be found on insect factsheets on www.inspection.gc.ca. CFIA regulates species not permitted to enter Canada and requires permits for high-risk imports. Wood packaging has own system. CFIA does trapping surveys and visual surveys.

Asian Long-horned beetle: visual surveys in cities that have brought in wood packaging. 00 sites/year. 3200 wi53w in Ontario per year in 2019 surveys will be in Renfrew, Peterborough, Barrie and Owen Sound. Final year of survey in Toronto in 5th year after ALHB was found.

EAB: use of green traps, surveys are outside the regulated area. Regulates by county/district. As far north as Nipissing and pockets in Thunder Bay and Winnipeg. Found in NW New Brunswick and Halifax area. Slow the spread – don't move nursery stock or firewood outside of regulated area.

Gypsy moth: regulated area is most of Eastern Canada. Expected for most of QC and NB to be affected regions ... No it's not because we inspect those trees!!!!!!!

Asian gypsy moth: surveys at ports and inspect ships before they come into territorial waters.

Hemlock woolly adelgid: small cotton tufts egg sacs on branches in spring, spread by animals, birds. Kills or severely weakens hemlock. Found in Appalachians in USA, in Niagara gorge and conservation area on Lake Erie, southern tip of Nova Scotia in Yarmouth. Easiest to survey in spring. Likely to be brought in by migratory birds.

Blueberry maggot: infects low and high bush blueberries, impacts exports to Japan.

Boxwood moth: found in Toronto and Etobicoke and affects boxwood *Bruxus* spp. Working with citizen scientists. Now on regulated list.

Invasive alien species – caught by different coloured funnel traps with multiple lures to get widest range of insects in locations.

Oak wilt: spread by root graft. Symptoms look like leaf scorch, and compression mats under bark smells like juicy fruit gum. Currently just across the St Clair . Spreads by sap beetles on wounds of trees in summer. Control by ploughing a trench around infested patch and cutting infested trees. Could be imported on logs.

Phytophthora ramorum: – stops water movement and kills tree in 6-8 weeks. Can affect rhododendrons.

Invasive plants (weeds) at seed/grain importers: joined goat grass, woolly cup grass, European giant weed.

Spotted lanternfly – present in US, affects grape, fruit trees. Very unique look.

Please Report insect pests to CFIA to local office or on website.

4. Annual Forest Health Review: Some lowlights from down south, Paul Hetzler (formerly Cornell University Extension)

New York State has more invasive forest pests than any other jurisdiction in North America.

Spotted lanternfly: native to China and Vietnam. Cold-hardiness unknown. Over 70 NA host species identified. Prefer maples (silver>red>sugar) also willow, elm, birch, grape, apple. High mortality in vineyards and fruit orchards. Ailanthus is preferred host in native range. Phloem feeders and can be found grouped together when feeding, covering stems and branches. Transported through hitchhiking on cars and Christmas trees. Likely to see in Canada in next few years as it moves quickly. First identified in US in 2014 and in NYS in 2018. Egg masses often well hidden and dull colour. Prefer to lay on rusted metal. NY State added 3 new infected counties and quarantine area has grown. Can SLF reproduce without ailanthus?? Extreme challenge to answer due to difficulty rearing in the lab. May not know until they arrive. Likely they can reproduce just not as quickly. Possible biological controls (2 native fungi). News clip: 16 Sept 2019 – spotted lanternfly forces cargo ship quarantine.

Oak wilt: unknown origin, first NA detection in 1944 in Wisconsin. Will kill healthy red oaks in 2-6 weeks and white oaks may linger for 2-3 years. Spore pads only produced on red oak-types. On white oak no spore pads and takes longer for mortality. Symptoms develop very rapidly. Root grafts spread fungus. Spore pads attract nitidulid beetles. Leaves turn brown with no pattern or boundary unlike anthracnose. In US when one is found, do aerial survey to detect spread. Nitidulid beetles attracted to sap/fresh wounds. Mitigation measures are drastic (herbicide treatments to kill red oak quickly instead of cut stump. Clearcut removals of oaks with trench excavated to cut roots 1.5 m deep (can put in geotextile barrier before backfilling). Currently 6.4 km from ON border. Greatest risk April 15-July 15, lower risk

March 15-Apr 14, July 16-Oct. Safest period for cutting is Nov 1 – March 14 for oaks. Recommends in case of storm or other damage to immediately cover wounds and stumps with paint. Paint stumps and cuts until Nov 1st. Nitidulid can find wounded oak in 1-2 hours.

Beech Leaf Disease: topic covered earlier by Paulette Hebert. Reviewed symptoms, mortality after several years. Microscopic nematode (*Litylenchus crenatae*), origin unknown, it is invasive in Japan. Likely all along great lakes north and south of border, unreported to date. Possibly exacerbated by recurring droughts in US.

Mark Whitmore with NYS Hemlock Initiative, Whitmore Lab may be willing to travel north to Ottawa or Kemptville to provide training. Cornell University Extension can sponsor classes in Canton NY or Ogdensburg with NYSDEC Oak Wilt experts.

5. **Justin P.-Letourneau & Michael Petryk (Tree Canada)**

- Charity working in four areas: greening communities, reforestation and carbon offsetting, engagement & research, operation relief (natural disaster)
- Helping support regreening after Fort McMurray Fire (2016), BC Fires (2017/18 fires), Emerald Ash Borer (2013-), Ottawa-Gatineau Tornadoes (2018)
- EAB: partnering with BioForest for TreeAzin donation, support municipalities to treat ash trees
- Municipalities who have continued treatment are seeing positive success; donation of TreeAzin has helped bring awareness to the issue to council/residents, etc.
- Municipalities have also done “matching” injection programs for private residents.
- Ottawa-Gatineau Tornadoes: high loss of trees from disaster (>1200 trees lost on public lands)
- Goal to help restore the canopy in urban area of Ottawa-Gatineau, fill gap to help support private landowners (insurance does not cover replacing trees)
- To date, >250 residents have benefited from the program to replant trees lost.
- Provide educational resources (species list, nurseries list, “how to plant a tree”) to help landowner make the right decisions for right tree at the right place.

6. **Jim McCready & Astrid Nielsen, EOMF Partner Updates**

- **City of Ottawa:** tree removal from EAB has tapered off, EAB TreeAzin injections have shifted from annual to every 2 years; tornado response city removed 1200 trees in affected Greenbank, Dunrobin, planted 225 trees in city parks, partnered on 6 school yards, planted 130 additional trees in Trees in Trust (right of way), >1000 trees planted with RVCA in ravine areas.
- **Cornwall:** 2015, 2016 EAB ash tree removal (4500 trees). Plant 210 trees annually (to replace ash; small funding budget). Created an arboretum in one of the parks.
- **Kingston:** Last year of capital funding for EAB program, most ash left is little/no accessibility. Injected ash was 625, now down to 400. 2000 trees per year planting. Ask from residents, city looking to sponsor 75% of cost of the tree (smaller stock).
- **NCC:** Planted 10,000 trees in 2019, in EAB affected areas. Treat ash every 2 years, doing sanitation removals. Removing between 5,000-10,000/year. Looking to shift to planting and

protection (no more removals) in 1-2 years; blowdown patch from 2018 tornado in Bruce Pit has been salvaged and replanted in fall 2019.

- **County of Renfrew:** 70% forested, 13 lower-tier municipalities (none showing interest in EAB management) and seems urban trees are less valued so EAB not seen as threat; not many invasive plants in towns; beech bark disease has increased over last 5 years. Landownership component is concern (because large tracts of land is crown land).
- **Thousand Islands National Park:** monitoring stations set up for EAB, lots of work with pitch pine, successful prescribed fire program, planted pine in old quarry with no regen (browsing is large problem), garlic mustard, dog strangling vine, buckthorn are main invasives; treated two black ash stands collaborating with Akwesasne, oak prescribed fire on one island showing good regen response. Hemlock Woolly Adelgid thought to be responsible for hemlocks dying but no evidence of HWA.
- **Leeds-Grenville:** ash salvage from EAB. County does not have EAB management program. Biggest issue is lack of interest: Invasive plants don't seem to concern council or residents – education campaign is needed. No ash replacement program.
- **Larose Forest (Prescott-Russell):** lowland ash is left to go to woody debris, noticing this is creating gap regeneration and changing species composition. Two minor blowdown occurrences; harvested in white pine shelterwood stand. Armillaria are affecting red pine, prescriptions for density thinning/single tree selection. Climate stresses also affecting pine.
- **Ontario Invasive Species Council (Iola Price),** updating BMP for wild parsnips; looking for funding; can help municipalities for BMP invasive plant management strategies; produces webinars on invasive plants.
- **Paul Hetzler:** common themes – education, awareness is needed. Paul writes short brief articles (800 words) about tree-related topics and is willing to share.
- **Carleton Place:** Doing EAB Injections on 60 trees this year and 60 in 2020. 80% success rate.-Due elm injections on 3 significant trees largest 101 cm dbh. Doing allott of ash removals and replacing them.- Have a private owners planting program going since 1998, they must take a workshop- Stands of Hackberry in CP. According to Ken Farr CFS one of three northern stands in North America which will be important gene pool with climate change.- Largest is 117 cm dbh _
- **Training needs:** Asian Longhorn d Beetle: Hemlock Woolly Adelgid, Spotted Lanternfly, Red Pine Decline same as in Simcoe County
- **EOMF/CIF December Forest Seminar** will be December 11th