



Canadian Food  
Inspection Agency

Agence canadienne  
d'inspection des aliments

# CFIA Forest Pest Survey Update

Forest Health Network  
Annual Pest Review  
January 13, 2021



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Canada

# Overview

## Canadian Food Inspection Agency

- Mandate
- Legislative Authority
- Plant Health Surveillance

## Preparedness

- Citizen Science
- Research
- Outreach and Education

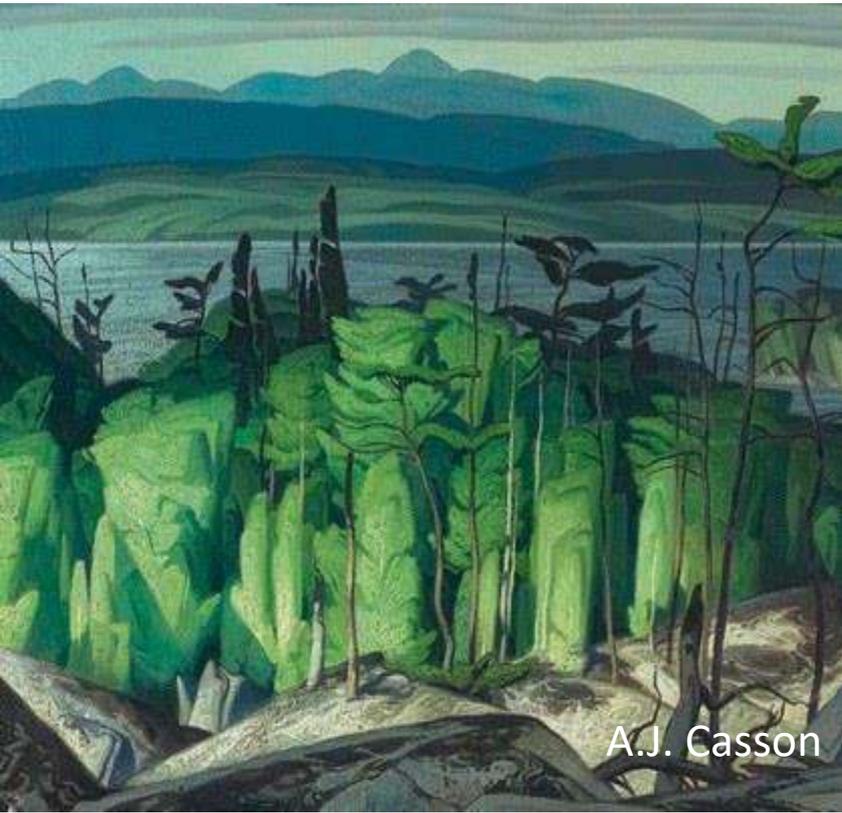
## Early Detection

- Pathway based-surveillance
- Pest-specific surveys

## Response

- Response Plans
- Interagency Technical Advisory Committees
- Collaboration

# Our Mandate



The Canadian Food Inspection agency aims to mitigate risks to Canada's plant resource base, which is integral to a safe and accessible food supply, as well as to public health and environmental sustainability.

**Plant Protection Act**

**S.C. 1990, c. 22**

Assented to 1990-06-19

**Duty to notify Minister**

**5** Where a person becomes aware of the existence of a thing that the person suspects to be a pest in an area where the pest has not previously been known to exist, the person shall immediately notify the Minister of the suspected pest and provide the Minister with a specimen of it.

[www.inspection.gc.ca/pests](http://www.inspection.gc.ca/pests)

## Acts and Regulations

Plant Protection Act  
Infested Places Orders  
Plant Protection Regulations

## Import Requirements

Canadian Wood Packaging Import Requirements



# Risk Mitigation

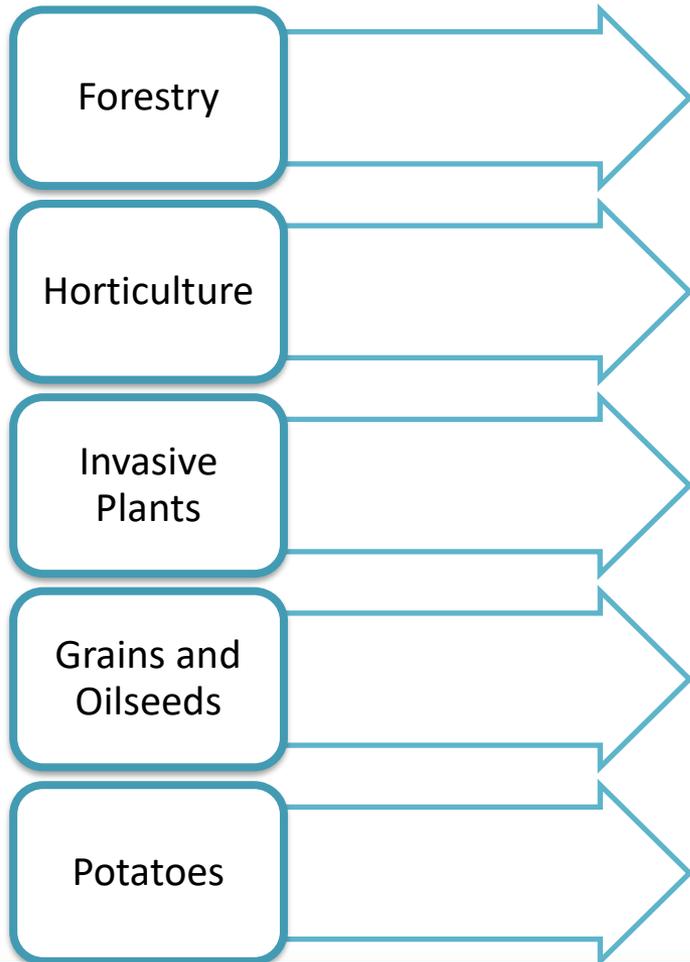
## Policy Directives

Phytosanitary measures:  
Wood packaging  
Wood Products  
Plants  
Firewood

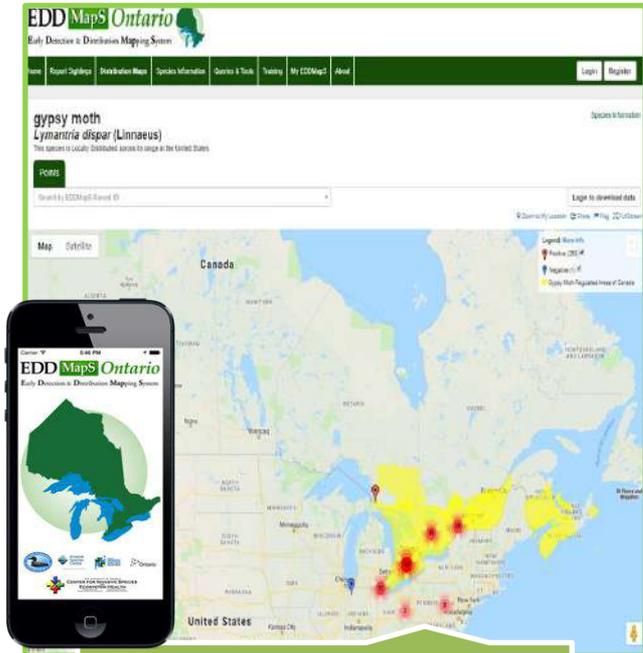
## Outreach and Education

Citizen Science  
Don't Move Firewood

# CFIA's Plant Health Survey Program



# Citizen Science



Reporting Tools

The image is a vertical flowchart for a 'Box Tree Moth' monitoring campaign. It starts with a title 'Help Us Find Box Tree Moth!' and a photo of a moth. Below is a 'Sign Up!' button with the email 'Erin.Bullas-Appleton@canada.ca' or text '519-820-4205'. This is followed by a 'Attend the training and pick up your kit!' button with the location 'James Gardens, 99 Edenbridge Dr., Etobicoke' and date 'May 9, 2019 from 11:00-1:00'. The final step is a 'Check your trap weekly and submit your counts!' button with the text 'Traps will be placed between May and September. Support can be provided as needed.' Logos for Canada, Ontario, and Toronto are at the bottom.

Monitoring Campaigns

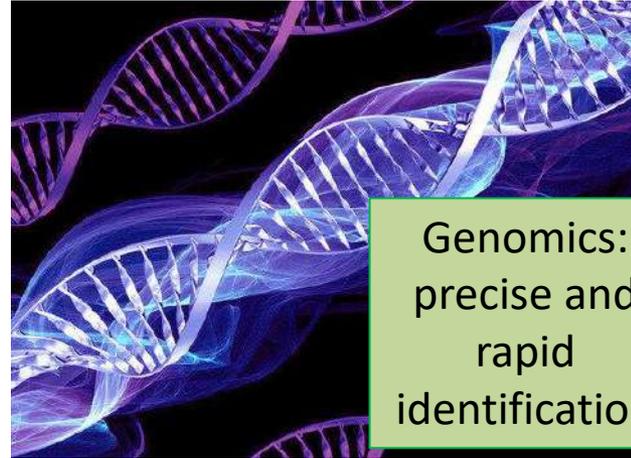
The image is a flyer for a 'Forest Health Volunteer Training Session'. It features a central image of a tree with several circular callouts showing signs of oak wilt: a wilted leaf, a fallen branch, a hole in the bark, and a close-up of a hole. The text includes the title 'Forest Health Volunteer Training Session', the date 'Wednesday, July 26th 6-8 pm', the location 'Ojibway Nature Centre 5200 Matchette Road, Windsor, ON', and the contact information 'R.S.V.P. by emailing volunteers@bioforest.ca'. Logos for Canada, Ontario, and Windsor are at the bottom.

Training Events

# Research

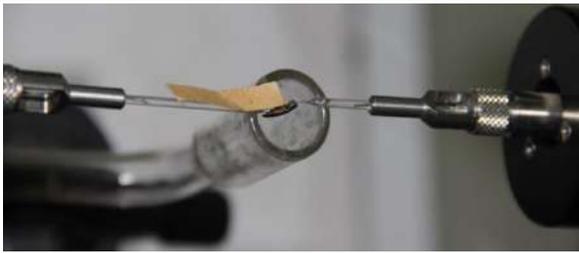


Identify  
vulnerable  
North  
American  
species



Genomics:  
precise and  
rapid  
identification

New detection tools to address gaps and constraints



# Collaborative Training

Common learning framework  
Build networks  
Enhance surveillance capacity for priority pests



Simulation sites to promote awareness



# Outreach

## Pest cards for distribution

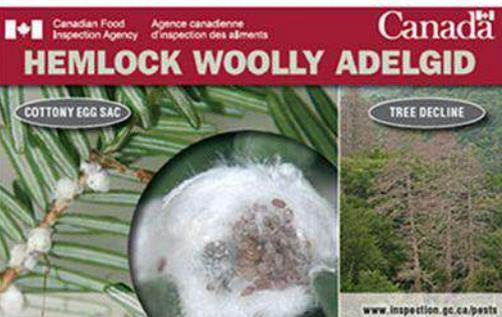
## Temporary Tattoos



## Signage

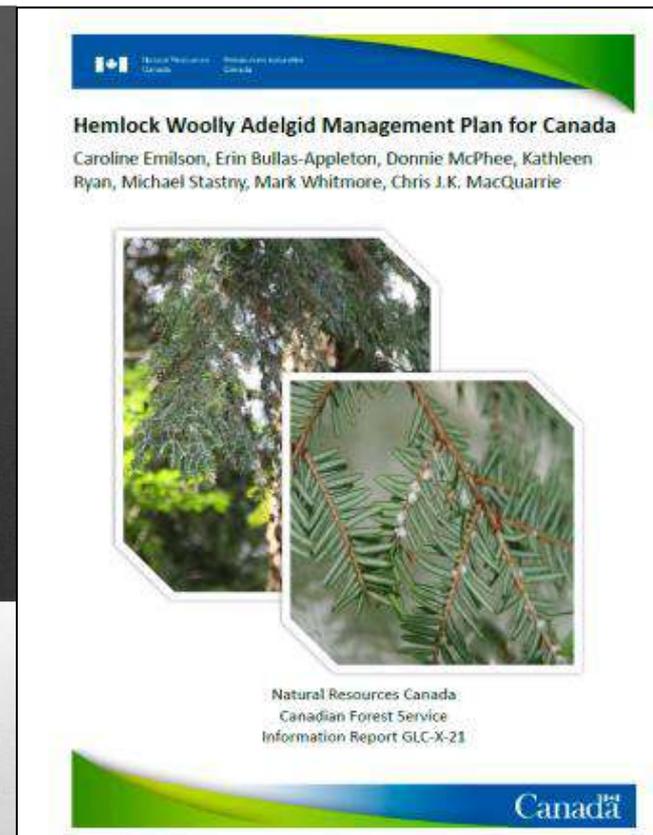


## Social Media



# Response Plans

- Comprehensive measures that may be implemented to address pest incursions
- Collaborative framework to mitigate risks and protect the resource



# Interagency Technical Advisory Committees

- Coordinate multi-government information-sharing and actions
- Pool expertise and resources
- Facilitate and support research advancements
- Scientific and technical recommendations

# Pathway-Based Surveillance



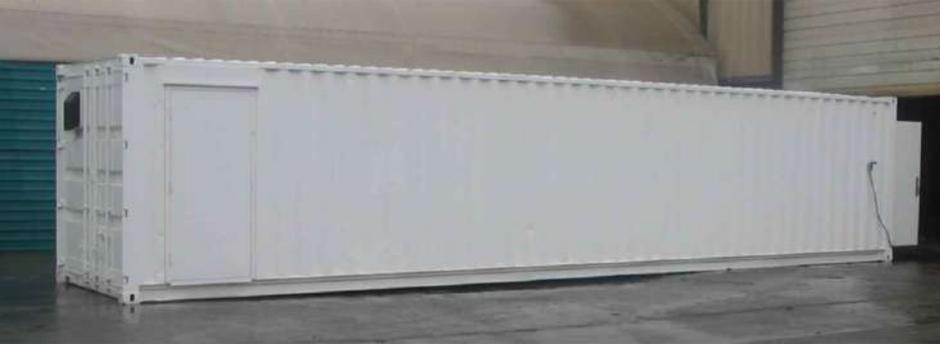
# Wood Packaging Pathway

- Wood packaging and dunnage are high-risk pathways for invasive alien forest pests
- Target forests within 5 km of import centres, ports, industrial areas, disposal and storage sites



# Rearing Survey

# Trapping Survey



Semiochemical-based trapping  
Detect non-indigenous  
longhorned beetles and wood  
boring insects associated with  
this pathway

Lures are not attractive to all bugs  
Target insects not on the radar  
Logs from municipal hazard tree  
removal



# Working with the Biodiversity Institute of Ontario to build reference libraries to compliment morphological taxonomy

The collage consists of several images: a man in a light blue shirt holding a panda plushie in front of a world map and a poster that reads 'ILLUMINATE BIODIVERSITY to save our living planet'; a petri dish containing various insect specimens; a table covered with numerous plastic bags of samples; a green trap hanging from a tree; and a black funnel trap in a field.

**eDNA analysis of trap fluid**

**Cross reference and approximate inventory gaps**

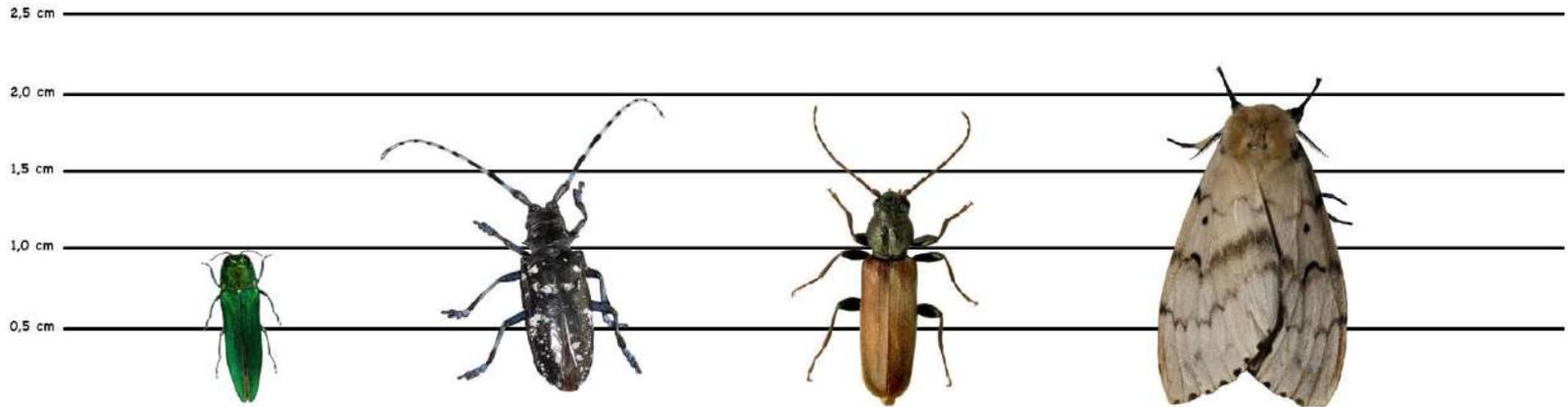
**Apply new technology to support rapid response**



UGA1346071



# PEST-SPECIFIC SURVEYS



Emerald Ash Borer

Asian Longhorned Beetle

Brown Spruce  
Longhorn Beetle

European Gypsy Moth

# Asian Longhorned Beetle

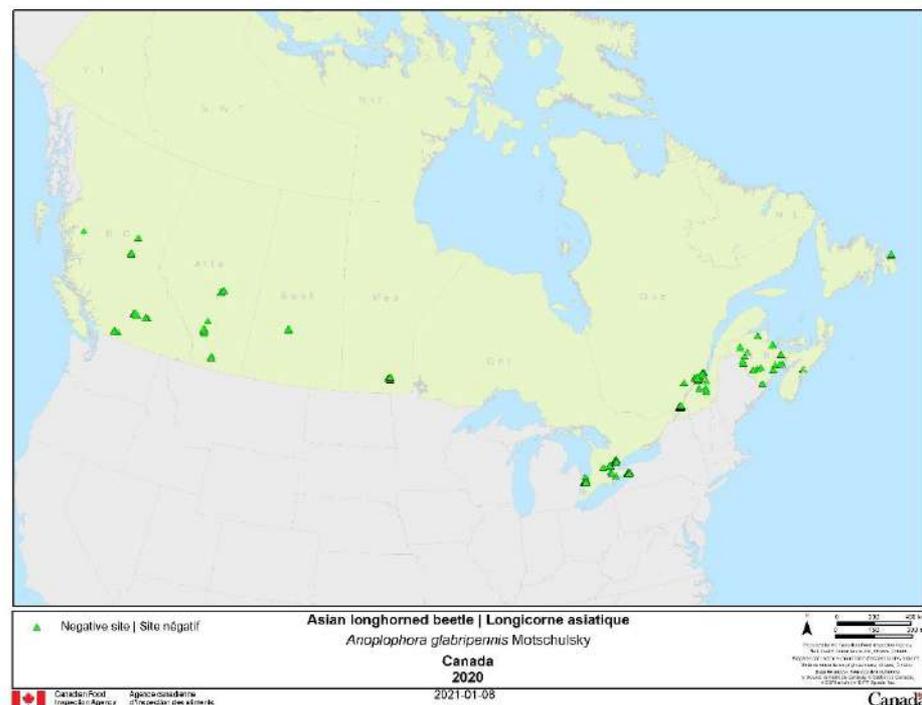
Eradicated from Canada!

- No detections since 2014
- Native to Korea, Japan and China
- Newly recorded in Russia's far east
- Attacks and kills a wide range of deciduous tree species
- Spread by movement of infested wood packaging material or pallets, natural dispersal and passive spread by hitch-hiking on vehicles



# Visual Detection Survey

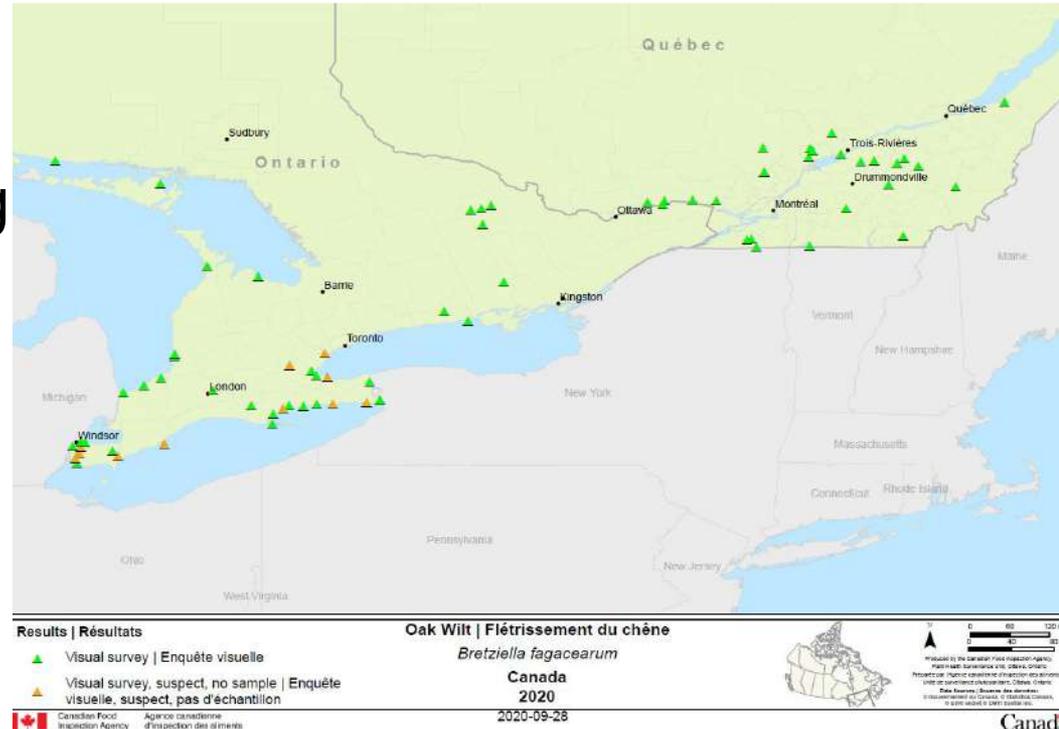
- National grid-based survey designed to ensure high probability of detecting infestations with a radius of 750 m or greater in the target cities
- At each grid point, 30 maple trees inspected for signs and symptoms
- Inspection focusing on major urban centers on a 5-year rotation



# Oak Wilt

## Visual detection survey at high risk locations

- Areas adjacent to US infestations, campgrounds, mills and facilities importing oak logs, border crossings with firewood disposal bins
- Culturing and PCR analysis of branch samples from suspect trees



ON: 42 Sites (67 Total)

# Visual Detection



Flagging and thinning crowns



Discoloured, bronzing leaves and early leaf drop



Bark cracks



Sapwood staining



Pressure pads

# Hemlock Woolly Adelgid

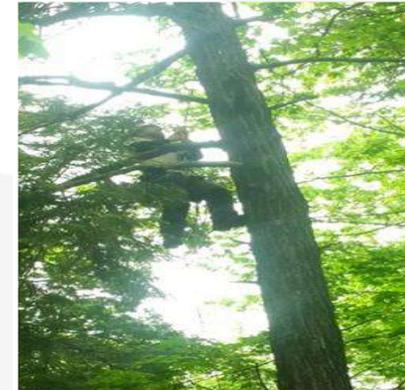
- Introduced invasive insects that feeds on hemlock, causing bud death, needle loss and eventual tree mortality
- Naturally spread by wind, birds and mammals
- Long distance dispersal via infected nursery stock
- Visual surveys May to March in eastern Canada
- Detection efficacy in high risk areas enhanced by integrating other methods

Ball Sampling



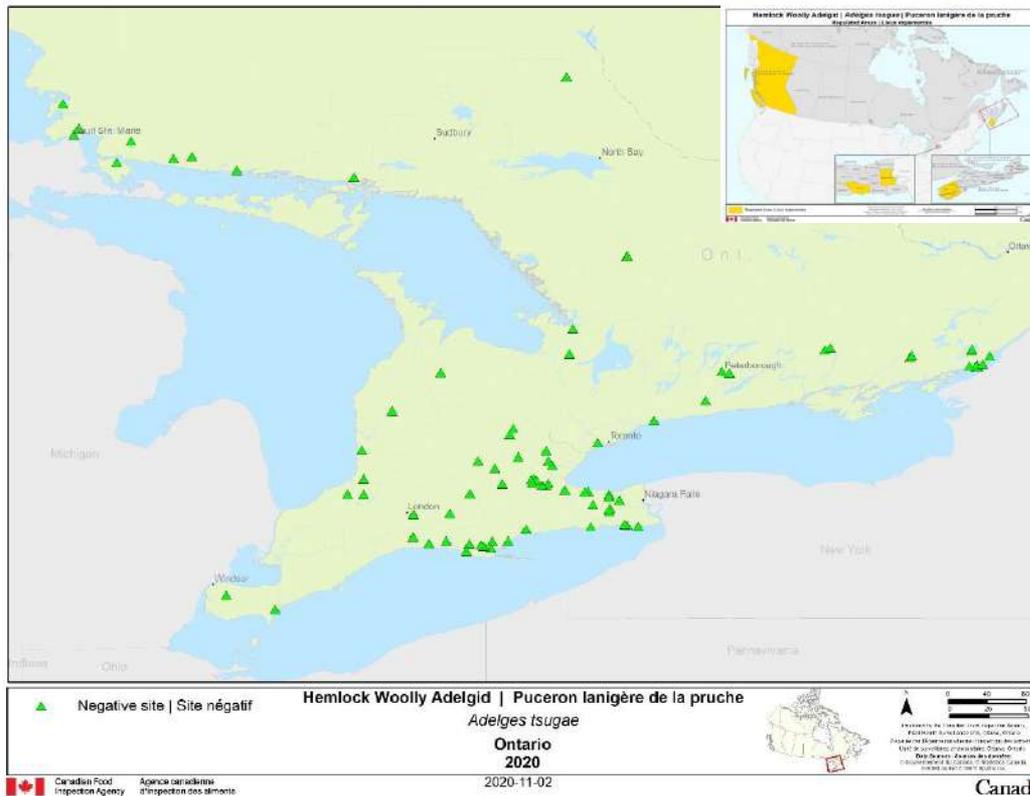
Visual

Climbing



ON: 90 Sites (204 Total)

22



# Ongoing Priorities and Next Steps



## Collaborative Response

- Enhance hemlock inventories
- Address survey gaps
- Site-specific response plans
- Working groups

## Regulatory Controls

- Regulated areas
- Import and domestic movement requirements
- HWA Approved Processing Facility Compliance Program

## Surveillance

- Early detection
- Delimitation
- Training

## Hemlock Preservation

- Education and outreach
- Biocontrol rearing and release program for Canada

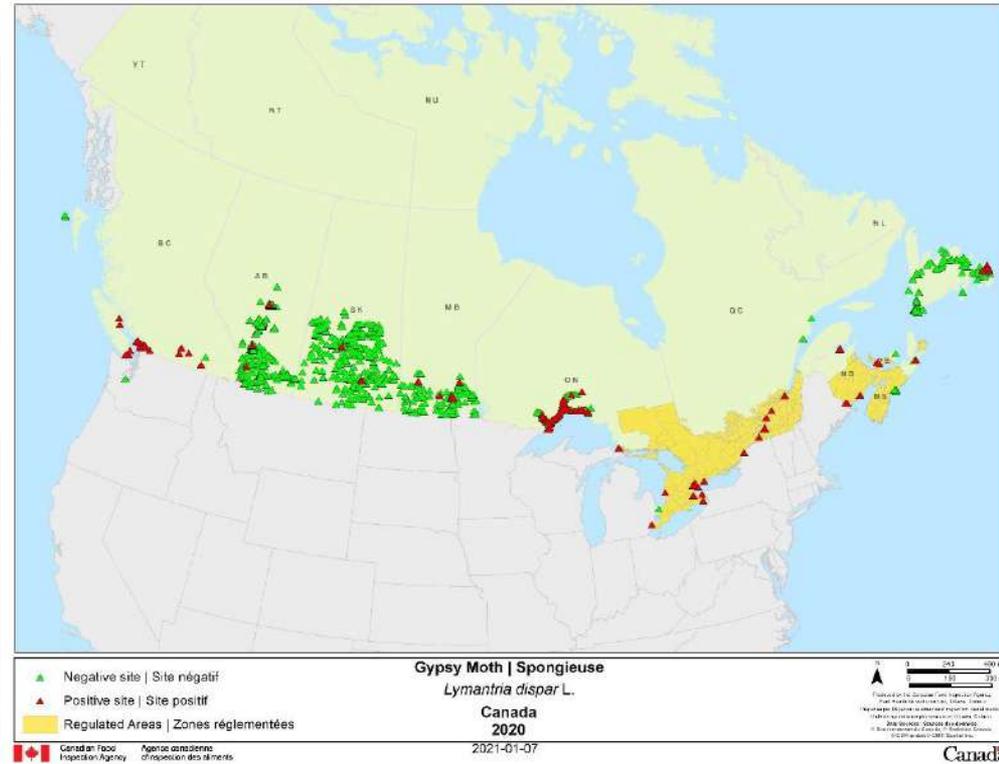
# Gypsy Moth

## Trapping survey to inform regulatory decisions

- Molecular analysis for *Lymantria dispar asiactica*
- High risk ports in regulated areas



- Trapping for *Lymantria dispar* detection in unregulated areas



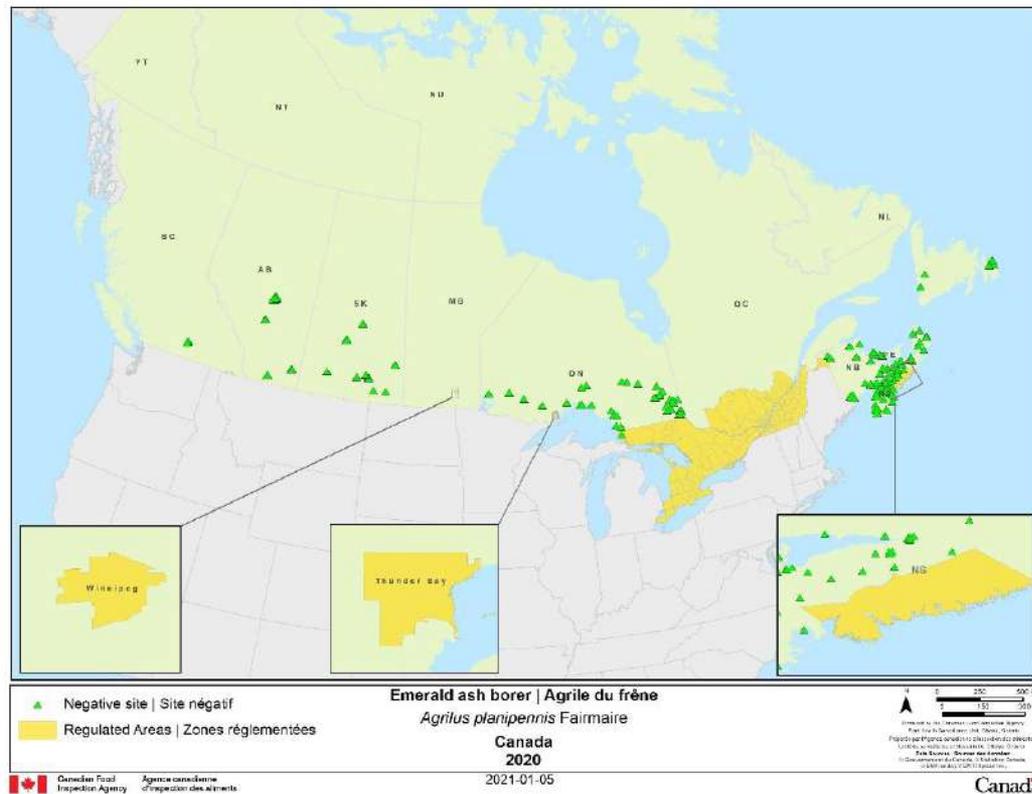
ON: 142 sites (2011 Total)

EGM finds outside regulated areas will be delimited to assess for established populations. If multiple life stages are detected, a Provincial eradication program is recommended.

# Emerald Ash Borer

Trapping survey to determine whether EAB is present in areas where it is not known to occur

- Confirmed in Canada in 2002
- Surveys provide information in support of regulatory decisions
- ON: 66 sites (332 Total)



# On the Horizon



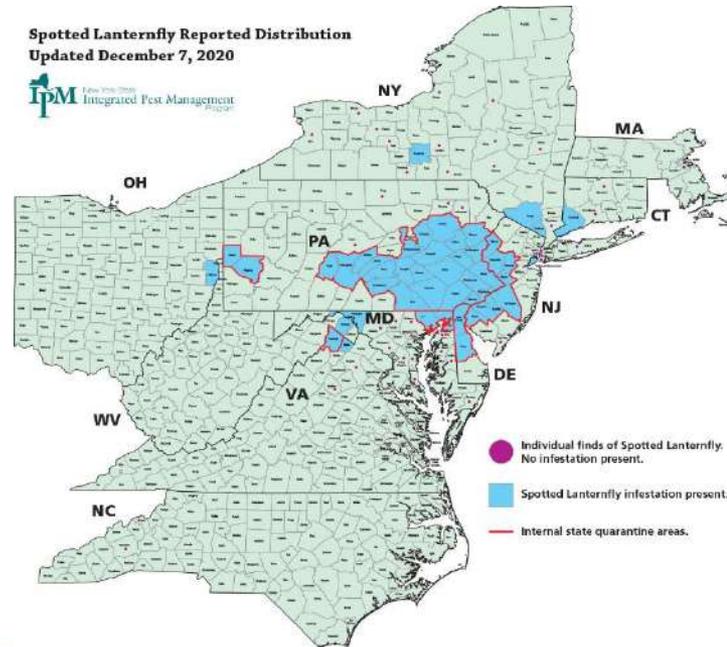
# Spotted Lanternfly

- Native to Asia
- Over 70 host species, but Tree-of-Heaven is preferred
- Damages grapes, hops, orchards and potential impacts on hardwoods
- Good hitchhiker



Spotted Lanternfly Reported Distribution  
Updated December 7, 2020

IPM INTEGRATED PEST MANAGEMENT



**OUTREACH**



**PRIORITY**

In September 2020, the Canadian Food Inspection Agency (CFIA) confirmed the identification of two dead spotted lanternflies. This regulated pest is not known to be present in Canada. No live insects were detected. Each insect was identified on a commercial truck travelling from Pennsylvania to Quebec. The first one was in Lévis and the second in Montréal.

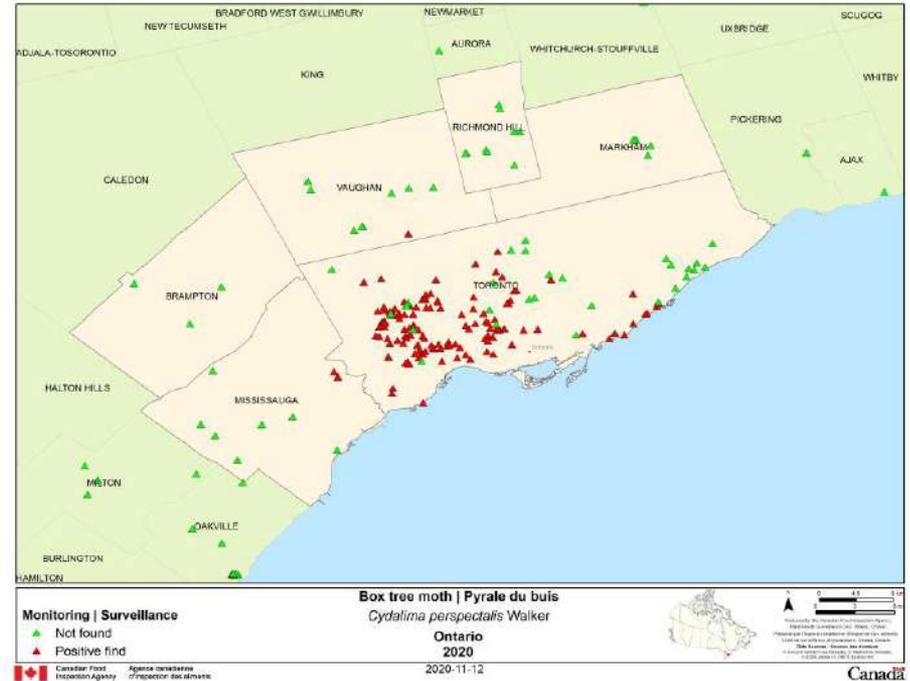
# Box Tree Moth

An Invasive Moth is Recorded in Ontario, Canada for the First Time - Observation of the Week, 9/9/18



This Box Tree Moth, seen in Ontario, Canada by @kyukich is our Observation of the Week!

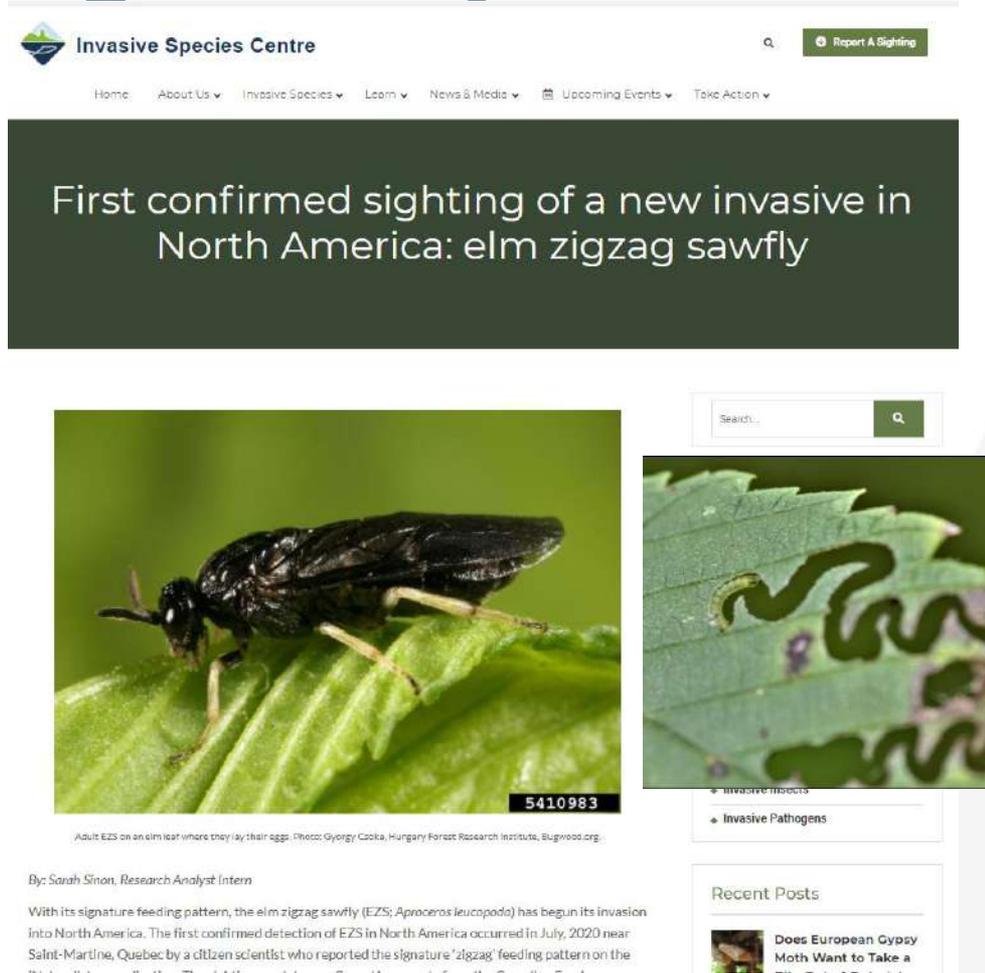
As our world becomes more interconnected through commerce and transportation, the likelihood of organisms native to one region of the planet being transported another region has of course increased, and the Box Tree Moth (*Cydalima perspectalis*) is an example of how quickly this can happen.



- Causes severe damage to boxwood plants in Europe
- Collaborative project to determine extent of infestation and assess management options

# Elm Zigzag Sawfly

- An invasive leaf eater that defoliates elm hosts at any age or stage of development.
- Larvae create characteristic zigzag feeding damage
- CFIA working with partners to determine extent of the infestation and regulatory status.



The screenshot shows the Invasive Species Centre website. At the top, there is a navigation bar with links for Home, About Us, Invasive Species, Learn, News & Media, Upcoming Events, and Take Action. A search bar and a 'Report A Sighting' button are also visible. The main content area features a dark green banner with the text: 'First confirmed sighting of a new invasive in North America: elm zigzag sawfly'. Below this, there are two images: one of an adult sawfly on a leaf and another showing the characteristic zigzag feeding damage on a leaf. A search bar is located to the right of the images. Below the images, there is a caption for the adult sawfly and a byline for Sarah Simon, Research Analyst Intern. The article text begins with: 'With its signature feeding pattern, the elm zigzag sawfly (EZS; *Aproceros leucopoda*) has begun its invasion into North America. The first confirmed detection of EZS in North America occurred in July, 2020 near Saint-Martine, Quebec by a citizen scientist who reported the signature 'zigzag' feeding pattern on the...'. A 'Recent Posts' section is visible at the bottom right, featuring a post titled 'Does European Gypsy Moth Want to Take a...'. A small number '5410983' is visible in the bottom right corner of the adult sawfly image.

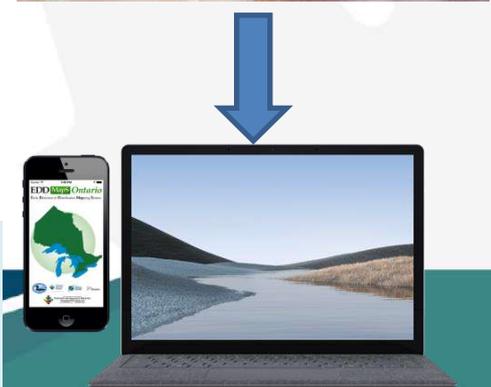
In August 2020, the Canadian Food Inspection Agency (CFIA) confirmed the presence of *Aproceros leucopoda* (elm zigzag sawfly) on *Ulmus* spp. (elm trees) in a rural property located in Ste. Martine, Québec. It is the first time that detection of this pest has been reported in North America.

# Report Your Findings!

- Map it!  
Record the address and/or latitude longitude for your report
- Snap it or Trap it!  
Take a picture or collect a specimen if possible
- Tap it!  
Submit your observations
  - Learn about native pests in your area and report unusual finds

[www.inspection.gc.ca/pests](http://www.inspection.gc.ca/pests)

Conducting surveys for regulated plant pests?  
Share your data so we can plot our collective efforts!



# Reflections

- Research, outreach and citizen science are essential
- Detection surveys are prioritized to support regulatory decisions and are refined based on new tools and technologies
- Response plans provide a collaborative framework for managing pest issues
- Pooling our expertise will help us protect the resource more effectively

# Questions?

Contact:

[Erin.Bullas-Appleton@canada.ca](mailto:Erin.Bullas-Appleton@canada.ca)

519-820-4205

<http://www.inspection.gc.ca/plantsurvey>