Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Key factors involved in two successful eradications of the Asian longhorned beetle, *Anoplophora glabripennis*, in Canada

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Canada

Asian longhorned beetle

Anoplophora glabripennis (Motschulsky)

- Distribution: China, North Korea, South Korea and Russian Far East.
- Attacks and kills hardwood species
- Main hosts include maple, birch, willow and poplar
- Regulated pest in Canada
- Significant threat to Canada's urban forests and maple syrup industry

Detections in Canada

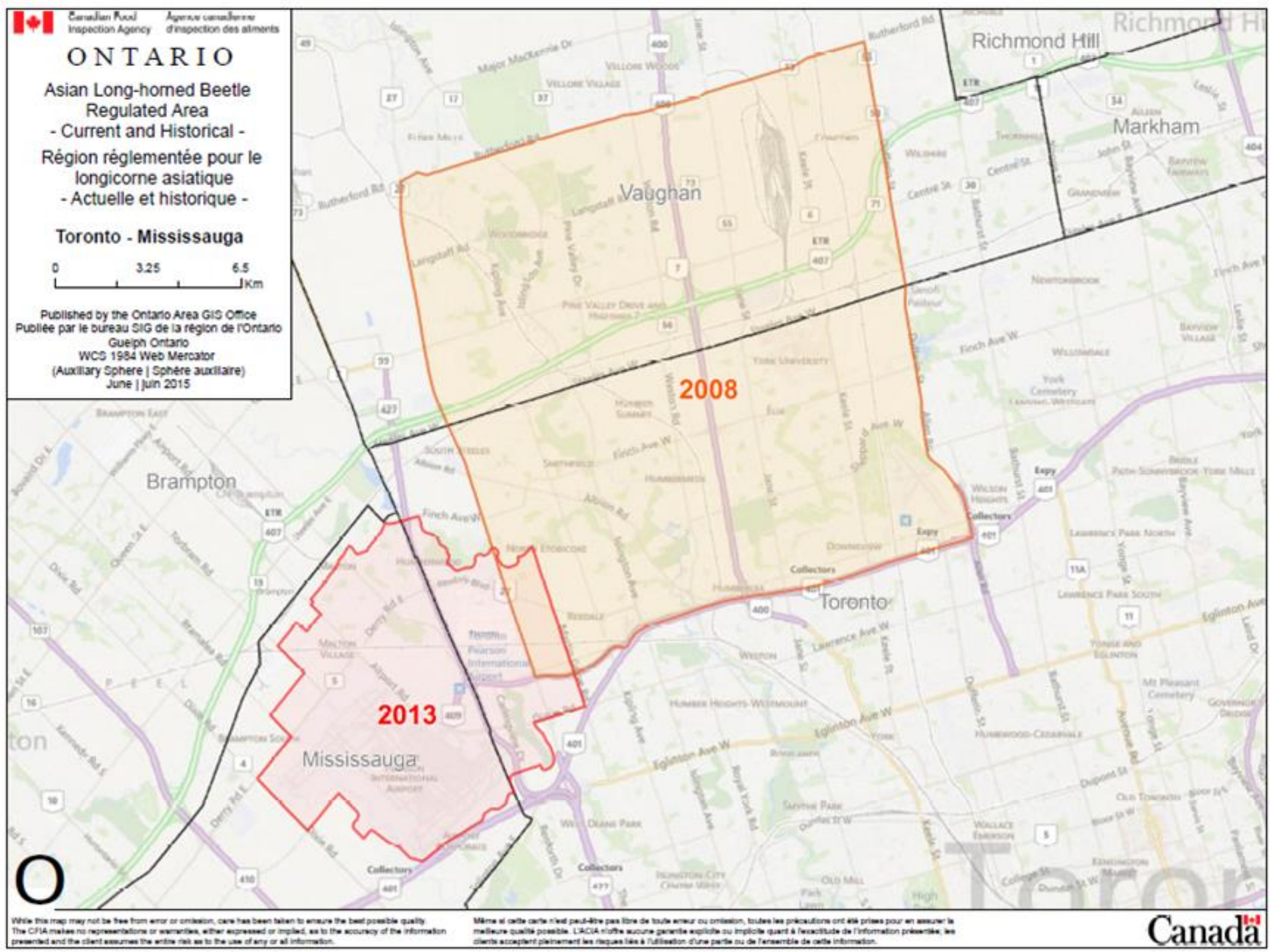
2003: First detection of ALB

- Reported by a citizen in Toronto, Ontario
- Quarantine area established (152 km^2); control efforts were undertaken
- 28 700 trees were removed (with compensation to the land owners)
- After 5 consecutive years of negative surveys, eradication was declared in April 2013 supported by scientific recommendations & international standards

Detections in Canada

2013: 4 months later…Found again!

- Also reported by a citizen 2 km away from the boundary of the first regulated area
- Quarantine area established (47 km^2); control efforts were undertaken
- 7 800 trees were removed (with compensation to the land owners)
- After 5 years of consecutive negative surveys, eradication should be declared in April 2020



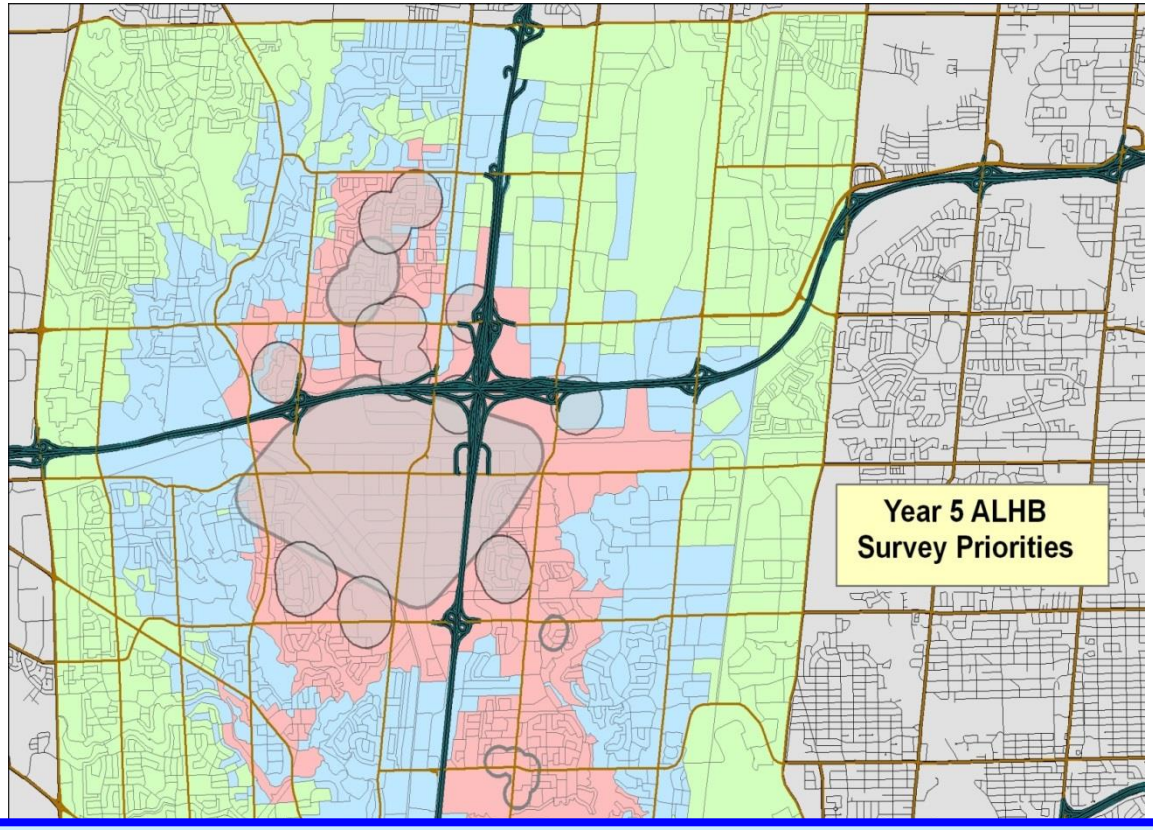

ELLESMERE ISLAND
DEVON ISLAND
Baffin Bay
Beauton Sea
BANKS ISLAND
MELVILLE ISLAND
SOMERSET ISLAND
PRINCE OF WALES ISLAND
VICTORIA ISLAND
Davis Strait
PRINCE CHARLES ISLAND
BAFFIN ISLAND
Iqaluit
YUKON
Whitehorse
Great Bear Lake
NUNAVUT
SOUTHHAMPTON ISLAND
NORTHWEST TERRITORY
Yellowknife
Great Slave Lake
Labrador Sea
Hudson Bay
NEWFOUNDLAND and LABRADOR
St. John's
Lake Athabasca
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
James Bay
QUEBEC
Gulf of St. Lawrence
Pacific Ocean
Edmonton
Lake Winnipeg
Prince Edward Island
NEW BRUNSWICK
NOVA SCOTIA
Fredericton
VANCOUVER ISLAND
Vancouver
Calgary
Saskatoon
ONTARIO
Lake Winnipegosis
Quebec
Lake Nipigon
Regina
Saint John
Halifax
Winnipeg
Thunder Bay
Lake Superior
Montreal
Ottawa
Lake Huron
Lake Ontario
Toronto
Lake Michigan
Lake Erie
ONTARIO
2008
2013
Canada

Key factor #1
Surveillance and ISPMs

- Surveillance protocol - ISPM 6
- Delimitation surveys - ISPM 8
- Eradication programs – ISPM 9
- Pest Free Areas - ISPM 4

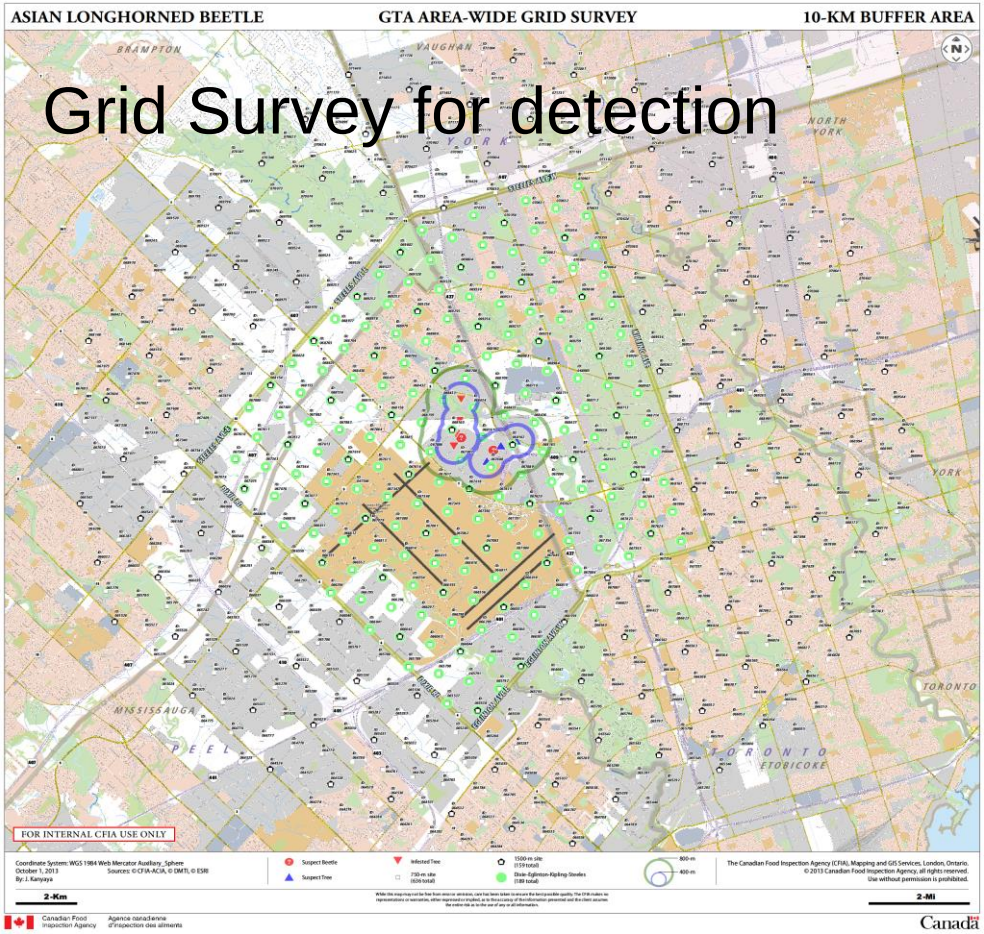
Key factor #2:
Rely on science for decision-making

Cell Survey Method in infested area



Level 1 (pink): 0 - 800 m from infested/suspect tree
Level 2 (blue): 800 – 2400 m from infested/suspect tree
Level 3 (green): 2400 – 5000 m from infested/suspect tree

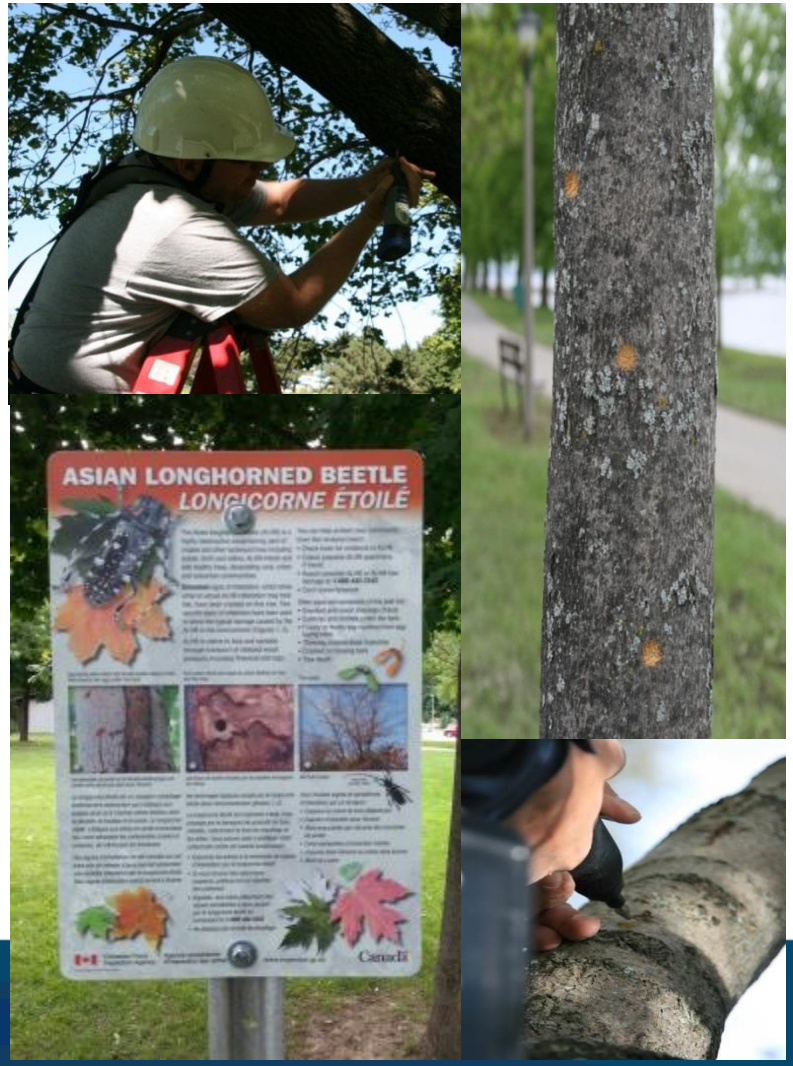
Key factor #2:
Rely on science for decision-making



- Grid-based survey designed to ensure high probability of detecting ALB infestations with a radius of 750 m or greater

- At each grid point, **30** maple trees inspected for signs and symptoms

Key factor #2:
Rely on science for decision-making



Quality Assurance

- Artificially generated signs of ALB have been placed on host trees
- Used for training and detection efficacy assessments of CFIA staff and partners
- Sites are also being used for outreach

Key factor #2:
Rely on science for decision-making

Host removal:

2003: **All** suitable/high risk trees (10 hosts genera) within 400 m radius of an infested tree were to be removed

2013: **Four main** hosts genera (maple, birch, willow and poplar) within 800 m radius of an infested tree were to be removed

Key factor #2:
Rely on science for decision-making

Host Trees Preferred by the ALB	
Common Name	**Latin Name**
Birch	*Betula*
Elm	*Ulmus*
Goldenrain tree	*Koelreuteria*
Hackberry	*Celtis*
Horsechestnut	*Aesculus*
Katsura	*Cercidiphyllum*
Maple	*Acer*
Mountain Ash	*Sorbus*
Poplar	*Populus*
Silk Tree	*Albizia*
Sycamore or London Plane Tree	*Platanus*
Willow	*Salix*

Trees removed were chipped to pieces of 1.5 cm in 2 dimensions

Key factor #3:
Early engagement of partners

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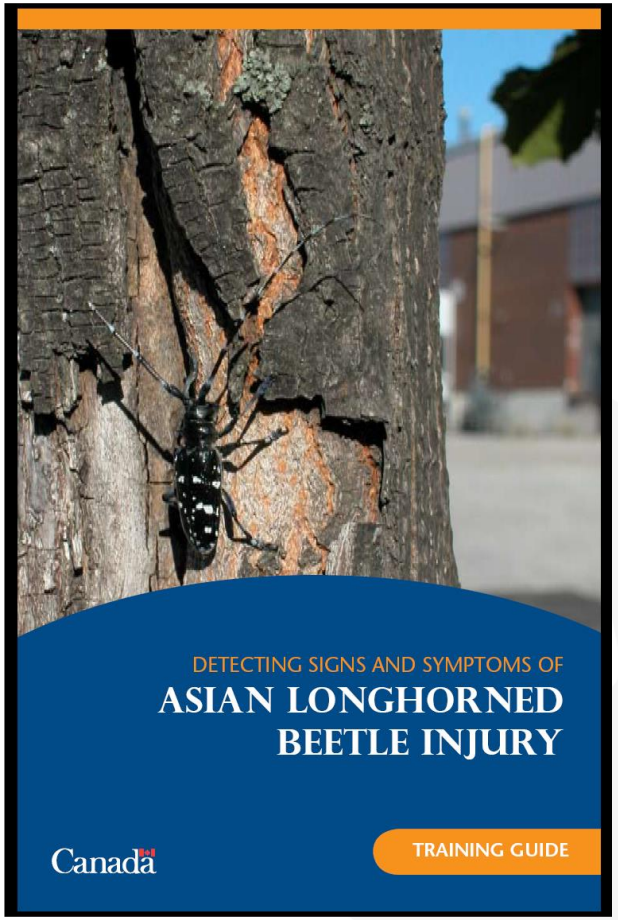
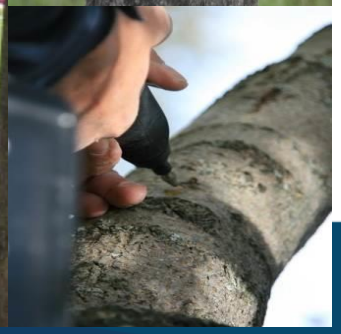
Early engagement of partners

Key factor #4: Proactive Communications



Available at:
https://cfs.nrcan.gc.ca/publications?id=26860

Key factor #4:
Proactive Communications

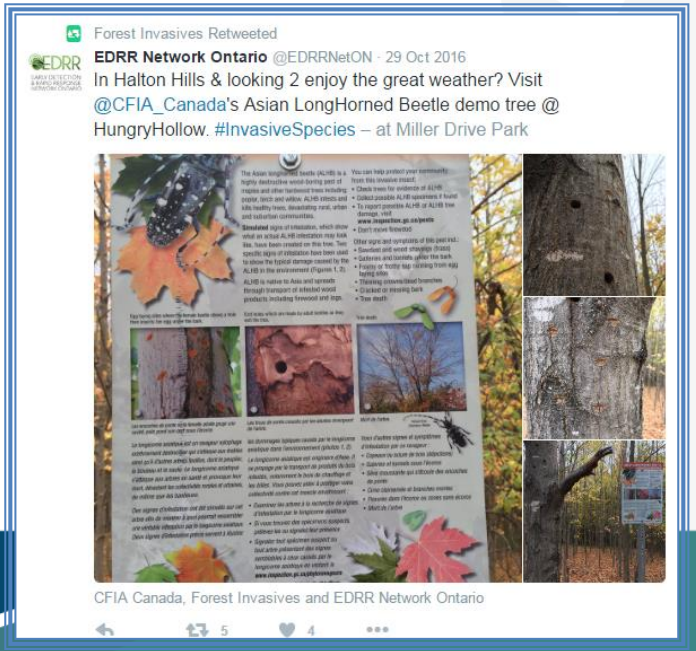


Simulations
Sites

Collaborative
Training

Partnerships

Products



Summary

- Key factors that led to success:
  - Surveillance and ISPMs
  - Strong commitment from regulatory authorities to rely on the scientific community's recommendations in the decision-making process.
  - Early engagement of partners for the delivery of surveillance and management activities
  - Proactive communications to raise awareness

This Is What We Are Trying To Protect

Photo Credit: Frank Nagle, Canadian Food Inspection Agency