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

Use of Pest Free Area and Phytosanitary Certifications in Canada

IPPC Symposium on Pest Free Areas and Surveillance

November 1, 2019

Canada

Relevant ISPMs

- ISPM 4- Requirements for the establishment of pest free areas
- ISPM 6: Surveillance
- ISPM 7: Phytosanitary certification system
- ISPM 8: Determination of pest status in an area

Relevant ISPMs

- ISPM 10: Requirements for the establishment of pest free places of production and pest free production sites
- ISPM 12: Phytosanitary certificates
- ISPM 29: Recognition of pest free areas and areas of low pest prevalence

Surveillance and PFAs

- Three case studies:
  - Apple maggot
  - Asian longhorned beetle
  - Dwarf bunt

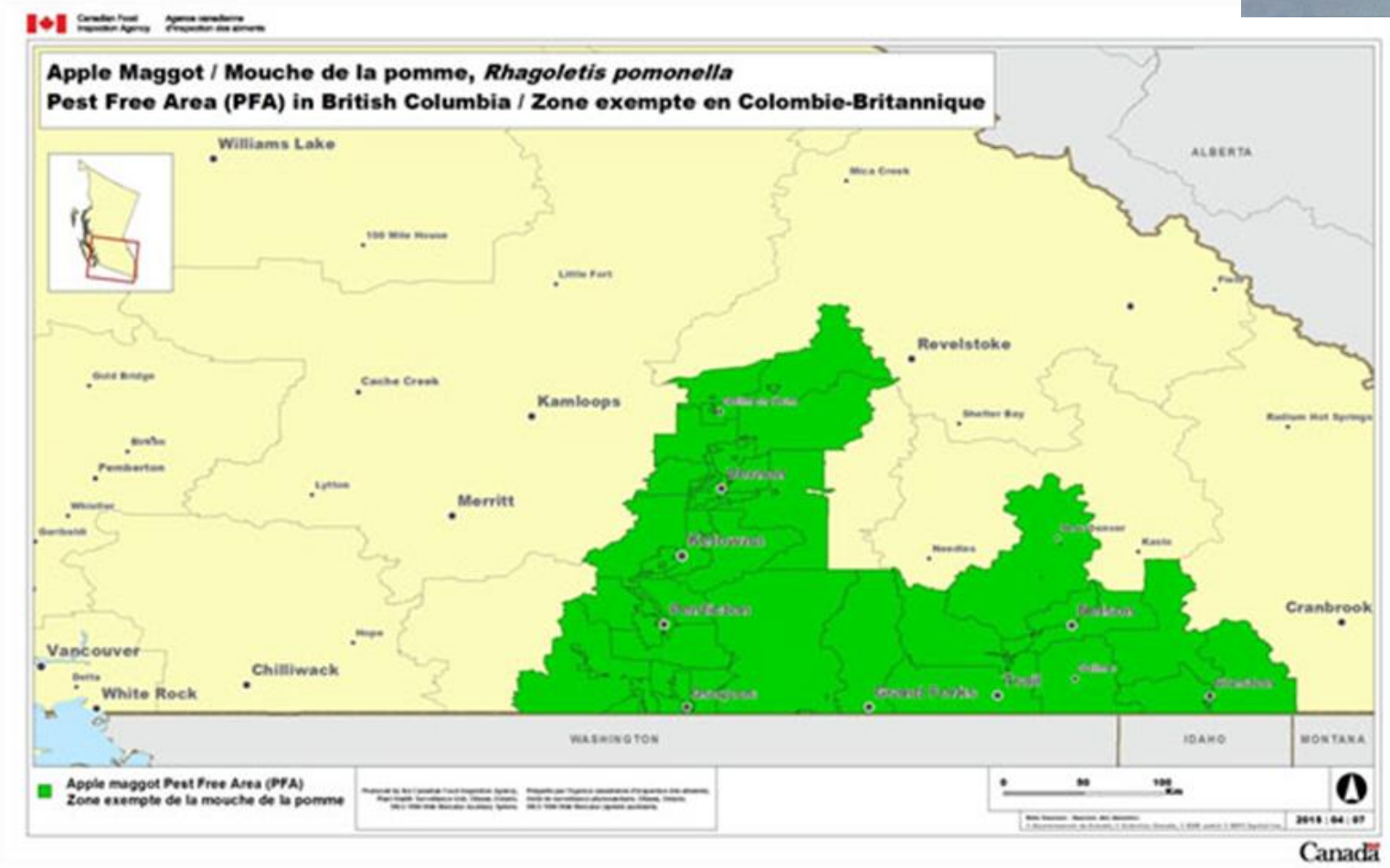
Apple maggot (*Rhagoletis pomonella)*

- Indigenous to eastern North America.
- Serious pest of apple fruit
- Adult females lay their eggs beneath the skin of the fruit. Larvae hatch 3 to 7 days later and tunnel into the fruit pulp and leave brown channels.
- Larvae enter the soil when the fruit drops to the ground and pupate
- Infested fruit are usually misshapen and dimpled looking

Apple maggot

- Status in Canada: “*Present: except in specified pest free areas*”
- Found in Western Canada for the first time in 2006
- It has a limited distribution in the province of British Columbia (BC)
- The PFA in the southern interior of BC is the last major apple growing area in North America that is free of this pest
- The fruit-production regions of the PFA are surrounded by steep mountain ranges and are geographically isolated from known AM populations in Canada

Apple maggot PFA



Apple maggot

PFA Measures

- Surveillance: annual detection surveys
- Import and domestic movement requirements
- Response activities when AM is detected in the PFA

Apple maggot

Surveillance

- Detection surveys are conducted annually
- Traps baited with an attractant are placed on host trees from mid-June to early October
- Trap locations include sites that have a high perceived risk of introduction
- Traps are checked every two weeks; fruit on the tree and ground are also examined at the same time
- All traps with *Rhagoletis* spp. flies are submitted for official identification

Apple maggot

Import & domestic movement requirements:

- To prevent the introduction and spread of AM into and within the PFA in BC

- Regulated articles include:
  - Host plants with roots
  - Fresh fruits of host plants
  - Empty used containers previously used for regulated fresh fruits or rooted plants
  - Soil attached to host plants

Apple maggot

Import & domestic movement requirements:

- Phytosanitary requirements for regulated articles moving into and within BC may include:
  - Treatment
  - Originate from PFPP / PFPS
  - Freedom from soil
- Regulated articles must be accompanied by appropriate phytosanitary or domestic movement certification
- Imported and domestic shipments of regulated articles are subject to CFIA inspection

Apple maggot

Response activities when AM is detected in the PFA:

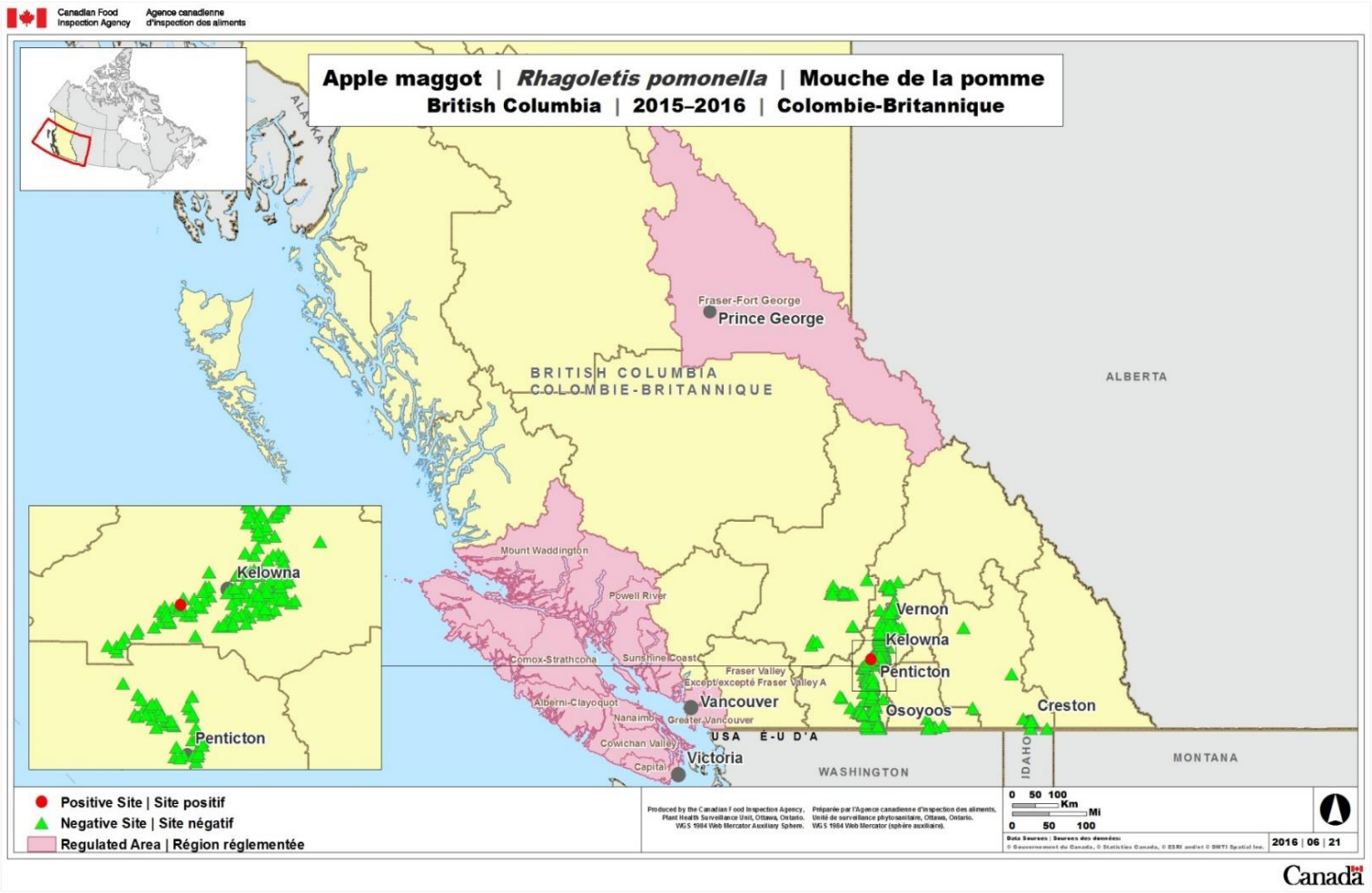
- Delimitation Survey
- Fruit Inspection
- Regulatory Controls

Apple maggot

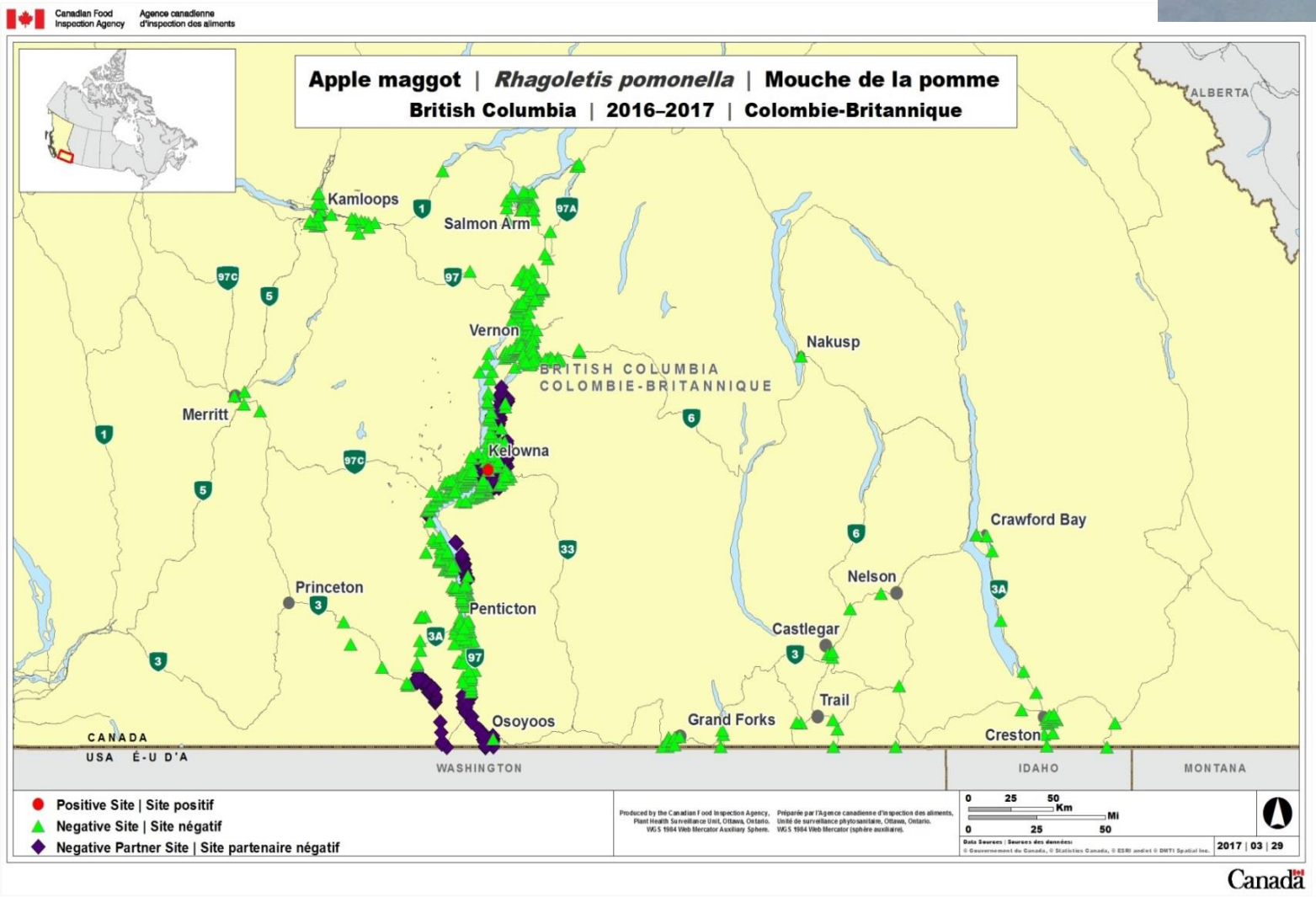
Delimitation Survey:

- If AM is detected in the PFA, a delimitation survey is required for at least 3 years to assess the population status and distribution
- Traps are placed:
  - in all major host trees within 800 m which are not located in a commercial orchard or nursery
  - around the perimeter of any orchard or nursery within 800m
  - orchards and nurseries beyond 800 m and within 2.5 km are also surveyed

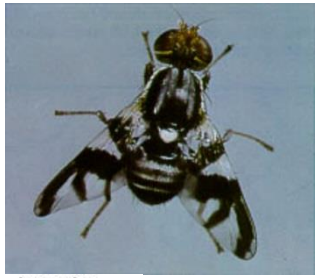
Apple maggot

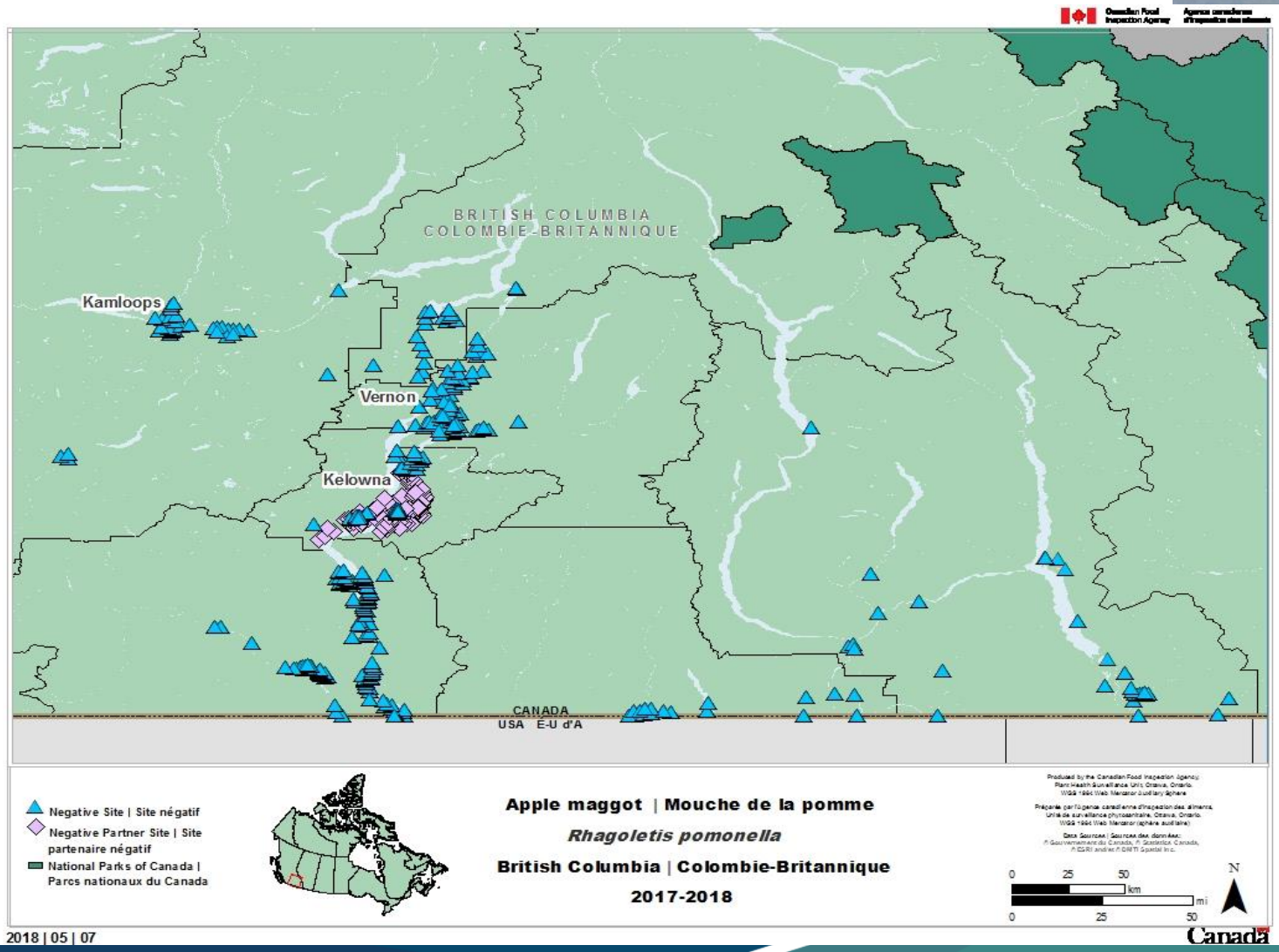


Apple maggot



Apple maggot





Apple maggot

Apple fruit inspection:

- Conducted in any fruit production site that exists within 800 m of detection, approximately two weeks prior to harvest.

- Sampling is based on the size of the orchard blocks.

Apple maggot

Regulatory Controls

- Notices of Prohibition of Movement are placed on regulated articles present on properties within 800 m from an AM detection
- Options exist to allow regulated articles to move under specified conditions
- Notices of Prohibition of Movement are lifted if the boundaries of the PFA change, pest status is returned to “absent”, etc.

Apple maggot

Export Certification

- Apple fruit from the PFA of BC
  - can be exported to certain markets that are not available to apples that are produced in regions where AM is present
  - can be exported to certain markets without treatment, if cold treatment is required as a condition of import to mitigate the risk of AM introduction.
- Furthermore, the PFA results in reduced costs associated with pest management practices and pesticides to control AM

Apple maggot

- Economic value of fresh apples:
  - Total value of fresh apple exports in Canada: $45M-$50M per year
  - Fresh apples from British Columbia= $18M-$20M (40%)

- Pest free areas for apple maggot in Canada allow for exports using an additional certification option, economically interesting for growers.

Asian longhorned beetle

- Invasive insect that attacks & kills a wide variety of deciduous tree species
- Native to Asia
- Spread by movement of infested wood packaging material or pallets, natural dispersal and passive spread by hitch-hiking on vehicles
- Poses a high risk to urban & natural forests of Canada

Asian longhorned beetle

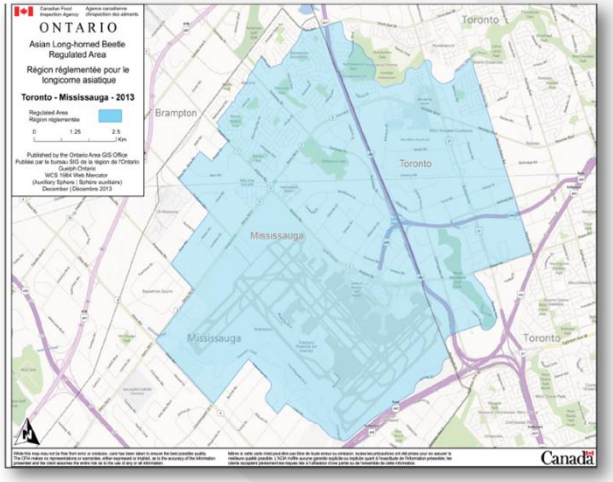
- Plant protection surveys are carried out annually in target urban areas to:
  - maintain area "pest-free" status for ALB
  - to detect new populations of ALB
  - to delimit populations if detected
  - to confirm eradication of ALB

Asian longhorned beetle

- Detected for the first time in Canada in September 2003 in Toronto, Ontario.
- An eradication program was launched in November 2003 by the CFIA in cooperation with municipal, regional, provincial and federal agencies.
- Eradication was declared in April 2013 in accordance with international phytosanitary standards.

Asian longhorned beetle

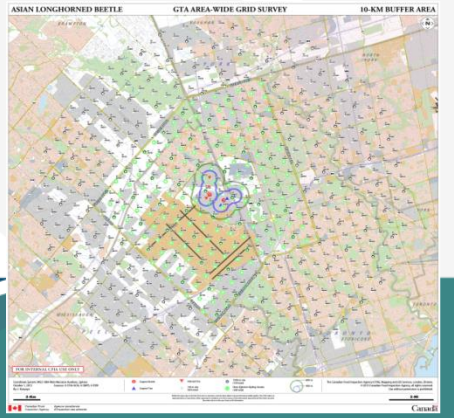
- In August 2013, ALHB was detected outside of the eradicated area, in an industrial zone of Mississauga, ON.
- In December 2013, the CFIA established a regulated area in an effort to prevent the spread of the beetle.
- Intensive detection and eradication efforts are underway



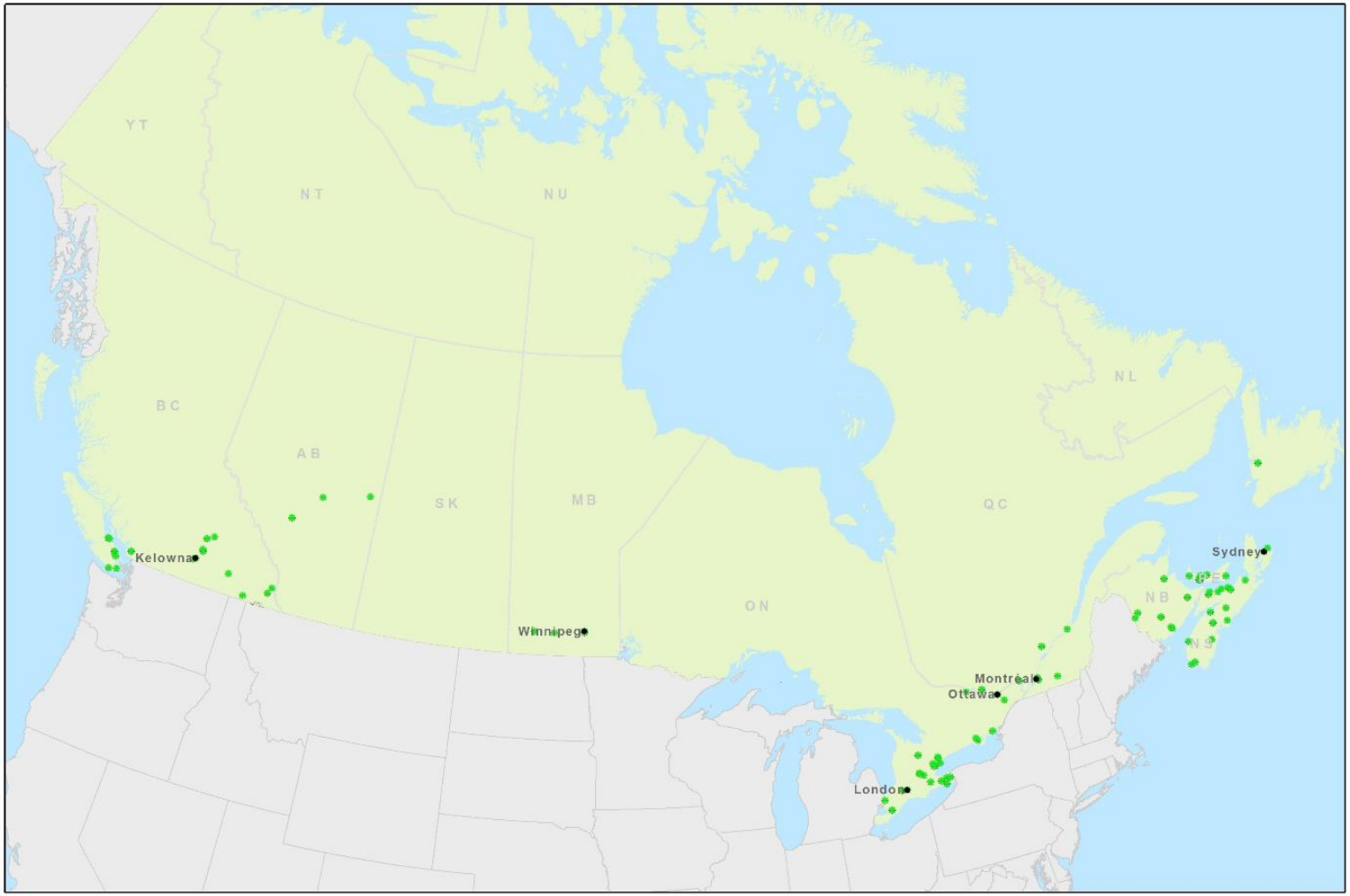

ELLESMERE ISLAND
DEVON ISLAND
Baffin Bay
Beauton Sea
BANKS ISLAND
MELVILLE ISLAND
SOMERSET ISLAND
PRINCE OF WALES ISLAND
VICTORIA ISLAND
Davis Strait
PRINCE CHARLES ISLAND
BAFFIN ISLAND
Iqaluit
YUKON
Whitehorse
Great Bear Lake
NUNAVUT
SOUTHHAMPTON ISLAND
NORTHWEST TERRITORY
Yellowknife
Great Slave Lake
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
Fredericton
NOVA SCOTIA
VANCOUVER ISLAND
Vancouver
Calgary
Saskatoon
ONTARIO
Quebec
Saint John
Halifax
Victoria
Regina
Lake Winnipegosis
Lake Nipigon
Winnipeg
Thunder Bay
Lake Superior
Montreal
Ottawa
Lake Huron
Lake Ontario
Toronto
Lake Michigan
Lake Erie

Asian longhorned beetle

- The CFIA conducts systematic detection surveys in a number of larger municipalities across Canada to maintain pest free status for ALB in target urban centres.
- Currently, there is no attractant or lure available to detect adult populations of ALB. The most reliable detection technique involves visual inspection of host trees for signs and symptoms of the beetle.
- A triangular grid survey is utilized to ensure a high probability of detecting an infestation the approximate size of the 2003 core infestation in Greater Toronto Area.



Asian longhorned beetle



Surveyed cities | Villes surveillées

Asian longhorned beetle | Longicorne asiatique

Anoplophora glabripennis (Motschulsky)

Canada
2018

2019-10-17

0 225 450 km
0 140 280 mi

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario
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Data Sources | Sources des données:
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Canada

Asian longhorned beetle

What are we trying to protect?

- Value of maple sugar and maple syrup exports in 2018: $405M

- Canada is a large exporter of forest products
  - Value of hardwood logs export: $56,8M
  - Value of hardwood lumber exports: $394,3M

Surveys allow the CFIA to maintain Pest Free areas & to issue Phytosanitary Certificates based on a Pest Free Area for ALB

Dwarf bunt

- Dwarf bunt (*Tilletia controversa*) is a fungal disease of winter wheat that infects plants and developing grain. Dwarf bunt gets its name because infected plants are stunted or dwarfed compared to normal plants.

- Distribution in Canada: Only present in Southern Ontario and a few inter-mountain valleys in Southern British Columbia. (CABI 2019)*.

- ** CABI. 2019. Crop Protection Compendium. CAB International, Wallingford, UK.*

Dwarf bunt

- *Tilletia controversa* is regulated by Canada.
- Import and domestic movement restrictions are in place to prevent its introduction and spread.

Dwarf bunt

- Canadian wheat exports
  - Several countries that import Canadian wheat regulate dwarf bunt
- Phytosanitary certification of Canadian wheat export from pest free areas:
  - Wheat must be produced in unregulated areas of Western Canada
  - Exports must occur out of Vancouver and Prince Rupert (British Columbia),
  - Exports of Canadian wheat shipped out of ports east of Thunder Bay, Ontario can not be certified free of dwarf bunt over comingling concerns

Annual dwarf bunt survey results

Year	Western Canada grown wheat (BC – Peace River Region, AB, SK, MB)	
	Number of Samples Tested	Number of Positive Samples
2008	181	0
2009	181	0
2010	171	0
2011	157	0
2012	130	0
2013	100	0
2014	112	0
2015	146	0
2016	110	0
2017	119	0
2018	139	0
2019	20	0
Total	1566	0

Dwarf bunt

- Dwarf bunt pest free areas have remained stable in Canada as a result of:
  - Import and Domestic Policies
  - Geographic distance between Ontario (regulated) and Western Canada (unregulated)
  - Climatic limitations unfavorable to establishment of dwarf bunt on prairies
  - Limited financial interest in exporting wheat from Eastern Canada to Western Canada, making domestic movement restrictions enforceable

Dwarf bunt

- Why is Canada maintaining a PFA for dwarf bunt?
  - Value of wheat exports from Canada:
    - 2018: $7.3B worth of exports from all of Canada
      - Of this amount, $7.04B from the Prairies (Alberta, Saskatchewan and Manitoba) = 95%!!
  - Export certification based on PFA allows growers to avoid control measures (e.g., treatment)

Conclusion

- The establishment and use of PFAs provides for the export of plants and plant products to the importing country without the need for the application of additional phytosanitary measures such as phytosanitary treatments (fumigation).

- Surveillance is one of the key activities of NPPO and provides technical basis for the determination of pest status in a given area and establishment and maintenance of pest free areas.

- Pest free areas may be used as the sole basis for phytosanitary certification with respect to stated pests.

- The importing country may require that the name of the PFA, PFPP or PFPS be specified on the phytosanitary certificate.

Questions?