



Canadian Food
Inspection Agency

Agence canadienne
d'inspection des aliments

Plant Protection Survey Report

2010-2011

PREFACE

Pest surveys are required to maintain claims of "pest-free" status of an area, to detect new populations of quarantine pests, and to delimit populations of quarantine pests with limited distributions in Canada. Pest surveys are also an integral part of control and eradication programs. Surveys provide information in support of all regulatory programs: import, export, and domestic. In all cases, reliable and accurate pest distribution data provides the basis for sound regulatory decisions.

The Plant Health Surveillance Unit is responsible for planning, coordinating, and administering the national survey program. The Survey Unit also plays a lead role in the design of new surveys and is responsible for the refinement of ongoing survey techniques and tools as new methodologies develop. Other areas of work include the development of information systems to collect, organize, and store survey data and mapping of regulated pest distributions.

For more information concerning this report or Plant Health Surveys, please contact:

Plant Health Surveillance Unit
Canadian Food Inspection Agency
1400 Merivale Rd., Ottawa, ON, K1A 0Y9
surveillance@inspection.gc.ca

ACKNOWLEDGEMENTS

The Plant Health Surveillance Unit would like thank and acknowledge various levels of government and collaborators in non-government organizations who contributed to the Plant Protection Survey Report for the fiscal year 2010-2011.

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1. FOREST PEST SURVEYS

1.1 Asian longhorned beetle (*Anoplophora glabripennis*)

Background

The Asian longhorned beetle (ALHB) is an invasive insect that attacks and kills a wide variety of deciduous tree species. This beetle was detected for the first time in Canada in September of 2003. The infestation occurred in an area along the municipal border between the cities of Vaughan and Toronto, Ontario. An eradication program was launched in November of 2003 by the CFIA in cooperation with municipal, regional and provincial agencies as well as Natural Resources Canada-Canadian Forest Service (NRCan-CFS). Details on the progress of the eradication program can be found at the CFIA Forestry page at:

www.inspection.gc.ca/english/plaveg/for/fore.shtml

In addition to the intensive detection work within the Ministerial Order eradication area, the CFIA conducts systematic grid surveys at a number of larger municipalities across Canada. The primary goal of this survey is to ensure that there are no established populations of ALHB in target urban centres.

Methodology

Currently, there is no attractant or lure available that can be used to detect adult populations of ALHB. The most reliable detection techniques available are to search either for adults during the flight period or for visible signs and symptoms of its attack on trees.

The grid survey methodology was developed in collaboration with NRCan-CFS. Each city was surveyed using a triangular grid consisting of contiguous survey points. The objective is to detect an infestation with a radius of 750 m or larger in any of the target areas. This size of the grid was chosen because it corresponds to the approximate size of the core infestation in the Greater Toronto Area. Host material present at each site was inspected for signs of ALHB infestation. This approach was designed to ensure a high probability of detecting the presence of an advanced infestation at each grid point.

Results

The ALHB survey was conducted in 6 provinces for a total of 1164 sites. No signs or symptoms of ALHB were observed during these surveys.

Table 1. Asian longhorned beetle detection grid survey results for 2010-2011.

Province	Municipality	Sites*	Results
British Columbia	Burnaby & Coquitlam	147	No detections
New Brunswick	Edmonston, Saint John, & Woodstock	56	No detections
Nova Scotia	Bridgewater, Digby, Halifax, Port Hawkesbury, Sydney & Yarmouth	74	No detections
Ontario	Fort Erie	116	No detections
	Oshawa	100	No detections
	Sarnia	154	No detections
	Toronto (outside of regulated area)	201	No detections
Prince Edward Island	Cavendish, Cornwall, Montague, North Rustico, Stanley Bridge & Stratford	49	No detections
Québec	Lévis, Québec, Longueuil, Montréal, Boucherville, Brossard & Drummondville	267	No detections

*Includes sites in the predetermined grid survey that were either not accessible or did not contain host trees (maples).

Maps showing surveyed sites for Asian longhorned beetle (ALHB):

- Survey map for *A. glabripennis*, British Columbia
- Survey map for *A. glabripennis*, New Brunswick
- Survey map for *A. glabripennis*, Nova Scotia
- Survey map for *A. glabripennis*, Ontario
- Survey map for *A. glabripennis*, Prince Edward Island
- Survey map for *A. glabripennis*, Québec

1.2 Emerald ash borer (*Agrilus planipennis*)

Background

The emerald ash borer (EAB) was first detected in Canada in Windsor, Ontario in July, 2002. Since the initial detection, this species has been found in numerous locations throughout Ontario and also in Québec. The primary goal of this survey is to delimit populations of EAB and provide information in support of regulatory programs that aim to limit the human-assisted spread of EAB in Canada (CFIA policy directive D-03-08: “Phytosanitary Requirements to Prevent the Introduction Into and Spread Within Canada of the Emerald Ash Borer, *Agrilus*

planipennis (Fairmaire)”). Detection surveys are conducted to determine whether EAB is present in areas not known to be infested. Additional background information on the pest and regulatory updates can be found on the CFIA Forestry page at:

www.inspection.gc.ca/english/plaveg/for/fore.shtml

Methodology

A number of strategies were employed for EAB detection in Canada, including scouting for broad scale ash decline, visual inspection, and trapping using green prism traps baited with (Z)-3-hexenol. Target sites for this survey included areas showing broad-scale ash decline and high risk sites where the pest is most likely to have been introduced through human activities, such as campgrounds, firewood dealers, rest stops along major transportation corridors, urban areas recently planted with host material, sawmills, and holiday destinations. Traps were also deployed within select urban centres using a grid-based approach.

Results

Visual and trapping surveys were conducted in all provinces at a total of 1327 sites (Table 2).

Table 2. Emerald ash borer visual inspection and trapping survey results for 2010-2011.

Province	Sites*	Results
Alberta	17	No detections
British Columbia	41	No detections
Manitoba	54	No detections
New Brunswick	27	No detections
Newfoundland & Labrador	9	No detections
Nova Scotia	27	No detections
Ontario	865	New detections in the City of Ottawa (outside the regulated area), as well as the following counties: <ul style="list-style-type: none">• Oxford• Waterloo• Wellington• Brant• Perth• United Counties of Leeds and Grenville
Prince Edward Island	21	No detections
Québec	240	No new detections
Saskatchewan	26	No detections

*Excludes sites from the broad-scale ash decline survey

Maps showing surveyed sites for emerald ash borer (EAB):

- Survey map for *A. planipennis*, Alberta
- Survey map for *A. planipennis*, British Columbia
- Survey map for *A. planipennis*, Manitoba
- Survey map for *A. planipennis*, New Brunswick
- Survey map for *A. planipennis*, Newfoundland & Labrador
- Survey map for *A. planipennis*, Nova Scotia
- Survey map for *A. planipennis*, Prince Edward Island
- Survey map for *A. planipennis*, Ontario
- Survey map for *A. planipennis*, Québec
- Survey map for *A. planipennis*, Saskatchewan

1.3 Invasive alien forest insect surveys

The invasive alien forest insect surveys (IAS) are pathway-based surveys designed to detect a broad range of wood borers and bark beetles. The surveys focus on urban areas where the risk of invasive alien insects moved with international wood packaging and dunnage is greatest. There are two components to these surveys. The first is a semiochemical trapping program, which targets a variety of wood borers such as those from the following taxa: Scolytinae, Siricidae, Burpestidae and Cerambycidae. The second survey consists of rearing insects collected from declining trees in urban environments. The rearing survey complements the trapping surveys for species or groups of insects that do not readily respond to commercially available semiochemicals, particularly insect borers of hardwoods.

The primary goal of these surveys is to detect new introductions of non-indigenous species not known to be present in Canada. These surveys complement policies directed at the prevention of invasive alien forest insects that may enter North America on commodities that use non-manufactured wood packaging and marine cargo supported by loose wood dunnage (CFIA policy directive D-98-08: “Entry Requirements for Wood Packaging Material into Canada”).

Methodology

IAS Trapping Survey

Traps were placed in forested areas within 5 km of high risk sites, including industrial zones receiving large volumes of international commodities, industrial and municipal disposal facilities/landfills, wood packaging disposal facilities, international ports and terminals and freight forwarding facilities. Lindgren traps (12-funnel) were placed at each site and each trap was baited with either, i) ultra-high release ethanol + ultra-high release alpha-pinene, ii) ultra-high release ethanol, or iii) ConTech ‘Exotic Bark Beetle’ lure (2-methyl-3-buten-2-ol, cis-verbenol, racemic ipsdienol). Each lure type was replicated three times at each site for a total of nine traps per site. Traps are placed in March and collected at the end of September.

IAS Rearing Survey

The rearing survey consists of obtaining two log sections from a tree that is targeted for removal by a city's hazard tree removal program. Trees are selected for sampling using a pre-determined set of criteria based on signs of decline. Logs are placed in a custom designed rearing facility for up to two years under climate-controlled conditions. Emerging insects are regularly collected from the bolts. Rearing facilities are located in the cities of North Vancouver, Toronto, Halifax Regional Municipality and Montreal.

Results

The IAS trapping survey was conducted in 6 provinces for a total of 74 sites (Table 3). In Alberta, the IAS trapping survey was conducted by StopDED, Alberta Sustainable Resource Development and various municipalities in collaboration with CFIA. No new invasive forest pest species were detected during this survey.

In September 2007, under an import permit issued under section 43 of the Plant Protection Regulations, untreated spruce logs were imported from Europe to a processing mill in Golden, B.C. Upon opening the steel transport containers, live bark and wood boring insects (including but not limited to *Orthotomicus laricis*, *Tomicus piniperda*, *Rhagium* spp. and *Polygraphus* spp.) were discovered. In order to provide assurance that European wood boring insects had not become established in Golden, the CFIA conducted a collaborative trap-based survey with Natural Resources Canada-Canadian Forest Service and the B.C. Ministry of Forests, Lands & Natural Resource Operations. A total of 70 Lindgren funnel traps with 14 different types of lures were placed immediately around the mill in 2008. In 2009, 18 traps with 6 different lures were placed away from the mill within forested areas in Golden. No non-indigenous insects were detected in 2008 or 2009.

On August 18, 2010, two 1 m long logs were removed from a declining Norway maple (*Acer platanoides*) in a residential area in Mississauga. Two adult *Trichoferus campestris* (Coleoptera: Cerambycidae) were reared from the logs and 1 dead adult and 2 live larvae were found under the bark. This is the 1st provincial record and the 1st North American host record for this non-native beetle. At the time of log collection, the maple tree was severely stressed (thinning canopy and dried leaves) and was infected with Armillaria root disease, suggesting that *T. campestris* was not responsible for tree decline.

Table 3. Invasive alien forest insects trapping survey results for 2010-2011.

Province	Sites	Results
British Columbia	15	No new detections of invasive alien pests. <i>Scolytus schevyrewi</i> (Coleoptera: Scolytinae) (Kelowna, new to BC) was detected.
New Brunswick	14	No new detections of invasive alien pests. <i>Xylosandrus germanus</i> (Coleoptera: Scolytinae) was detected again (1st recorded in New Brunswick in 2009)
Newfoundland & Labrador	3	No new detections of invasive alien pests.
Nova Scotia	10	No new detections of invasive alien pests. <i>Tetropium fuscum</i> (Coleoptera: Cerambycidae) was captured at two locations in the Halifax area.
Ontario	16	No new detections of invasive alien pests. <i>Tomicus piniperda</i> (Coleoptera: Scolytinae) and <i>Sirex noctilio</i> (Hymenoptera: Siricidae) were captured in a number of traps established in southwestern Ontario.
Québec	18	No new detections of invasive alien pests.

Maps showing surveyed sites for the invasive alien forests insects trapping survey:

- Survey map for the invasive alien forest insects, British Columbia
- Survey map for the invasive alien forest insects, New Brunswick
- Survey map for the invasive alien forest insects, Newfoundland & Labrador
- Survey map for the invasive alien forest insects, Nova Scotia
- Survey map for the invasive alien forest insects, Ontario
- Survey map for the invasive alien forest insects, Québec

For additional information concerning the rearing survey, contact the Plant Health Surveillance Unit (surveillance@inspection.gc.ca).

1.4 European gypsy moth (*Lymantria dispar dispar*)

Background

The European gypsy moth is established in southern Ontario, southern Québec, southwestern New Brunswick and southwestern Nova Scotia. Pheromone-based monitoring surveys are conducted annually in non-regulated areas of Canada. Surveys are also conducted to verify eradication of the insect in areas where eradication programs have been undertaken. This survey provides information in support of a number of regulatory programs and policies (e.g. CFIA policy directive D-98-09: “Comprehensive policy to control the spread of North American gypsy moth, *Lymantria dispar* in Canada and the United States”).

Methodology

Trapping is performed using Delta traps baited with + disparlure pheromone. Two systems of trapping can be used depending on the status of the area to survey. Detection trapping is used to determine if European gypsy moth is present in an area currently considered free from the pest, and delimitation trapping is used to determine the extent of a population once a detection has been confirmed. The two systems use different trapping densities. Trapping is focussed on areas where risk of introduction is greatest, e.g., urban and suburban areas, tourist destinations, campsites, provincial parks and some transportation corridors.

Results

The survey was conducted in 9 provinces for a total of 8092 sites (Table 4).

Table 4. European gypsy moth survey results for 2010-2011.

Province	Sites	Results
Alberta	865	A total of 3 adult moths were captured at 3 sites (Edmonton & Medicine Hat)
British Columbia	4510	A total of 11 adult moths were captured at 8 sites (Comox, Coquitlam, Harrison Hot Springs, Nelson, North Vancouver & Revelstoke)
Manitoba	1071	A total of 16 adult moths were captured at 7 sites (Winnipeg)
New Brunswick	158	A total of 305 moths were captured at 42 sites. Egg masses were detected by New Brunswick Natural Resources staff in Rogersville, Northumberland County.
Newfoundland & Labrador	261	One moth detected in St. John's
Nova Scotia	218	A total of 125 moths were captured at 24 sites. Egg masses were detected at three sites in Pictou County in River John, New Glasgow, and Eureka.
Ontario	204	A total of 184 adult moths were captured at 20 sites, with a maximum capture of 23 moths at a single site.
Prince Edward Island	414	A total of 946 moths were captured at 192 sites. Egg masses were detected 2 sites in Prince and Queens Counties in Summerside & York
Saskatchewan	391	No detections

Maps showing surveyed sites for European gypsy moth:

- Survey map for *L. dispar dispar*, Alberta
- Survey map for *L. dispar dispar*, British Columbia
- Survey map for *L. dispar dispar*, Manitoba
- Survey map for *L. dispar dispar*, New Brunswick
- Survey map for *L. dispar dispar*, Newfoundland & Labrador
- Survey map for *L. dispar dispar*, Nova Scotia
- Survey map for *L. dispar dispar*, Ontario
- Survey map for *L. dispar dispar*, Prince Edward Island
- Survey map for *L. dispar dispar*, Saskatchewan

1.5 Asian gypsy moth (*Lymantria dispar asiatica* or *Lymantria dispar japonica*)

Background

Asian gypsy moth (AGM) has been introduced into North America on several occasions, but eradication programs have prevented populations from establishing. This survey is being conducted in support of CFIA policy directive D -95-03: Plant protection policy for marine vessels arriving in Canada from areas regulated for Asian Gypsy Moth (*Lymantria dispar*, *Lymantria albescens*, *Lymantria postalba*, *Lymantria umbrosa*). Asian gypsy moth is defined for regulatory purposes as those gypsy moth subspecies of *Lymantria dispar* in which the females are capable of sustained directed flight, whereas European gypsy moth includes females not capable of flight.

Methodology

The AGM trapping survey targets high risk sites of potential introduction linked to vessel and container pathways, e.g. international ports/terminals, container storage yards, intermodal terminals, industrial zones and international auto terminals. Trapping is performed using sticky Delta traps baited with + disparlure pheromone. All moths captured in non-gypsy moth regulated areas of Canada (BC, AB, SK, MB, NL) are subjected to DNA analysis to determine whether they should be considered Asian gypsy moth or European gypsy moth (i.e. biotype). A subset of moths collected from this survey in gypsy moth regulated areas in infested provinces (ON, QC, PE, NS, NB), are tested using molecular analysis to determine biotype.

An additional intensive trapping effort was implemented in British Columbia in 2010 as a result of the capture of an Asian gypsy moth near Chemainus in 2009. A trapping grid containing 36 traps/mi² was established around the site of the 2009 AGM find. Additionally, grids of 9 traps/mi² were placed in a one mile radius around all BC ports and anchorages where high risk ships from Asia had visited in the previous two years. This effort resulted in the addition of 1409 traps to the 4380 placed for routine annual monitoring for European gypsy moth (section 1.4).

Results

The AGM specific survey was conducted in ten provinces for a total of 1547 sites (Table 5).

Table 5. Asian gypsy moth survey results for 2010-2011.

Province	Sites	Results
Alberta	16	No detections
British Columbia	1380	No detections
Manitoba	21	No detections
New Brunswick	20	No detections
Newfoundland & Labrador	8	No detections
Nova Scotia	20	No detections
Ontario	39	No detections
Prince Edward Island	9	No detections
Québec	15	No detections
Saskatchewan	19	No detections

Maps showing surveyed sites for Asian gypsy moth:

- Survey map for *L. dispar asiatica* or *japonica*, Alberta
- Survey map for *L. dispar asiatica* or *japonica*, British Columbia
- Survey map for *L. dispar asiatica* or *japonica*, Manitoba
- Survey map for *L. dispar asiatica* or *japonica*, New Brunswick
- Survey map for *L. dispar asiatica* or *japonica*, Newfoundland & Labrador
- Survey map for *L. dispar asiatica* or *japonica*, Nova Scotia
- Survey map for *L. dispar asiatica* or *japonica*, Ontario
- Survey map for *L. dispar asiatica* or *japonica*, Prince Edward Island
- Survey map for *L. dispar asiatica* or *japonica*, Québec
- Survey map for *L. dispar asiatica* or *japonica*, Saskatchewan

1.6 Pink gypsy moth (*Lymantria mathura*)

Background

Pink gypsy moth is considered a potential threat to North American forests. Recent general surveillance intelligence indicates heavy populations of this species in Japan and Russia. In 2008, pink gypsy moth egg masses were intercepted on vessels entering North America on several occasions. The primary goal of this survey is the early detection of this quarantine pest throughout Canada. This survey supports regulatory programs, including CFIA policy directives D-98-08 (Entry Requirements for Wood Packaging Material into Canada), D-01-12 (Phytosanitary Requirements for the Importation and Domestic Movement of Firewood), and D-02-12 (Import requirements for non-processed wood and other non-propagative wood products, except solid wood packaging material, from all areas other than the continental United States)

Methodology

This survey targets the vessel and container pathway and is designed for early detection of pink gypsy moth should populations reach Canadian shores under the current increased population pressures. Trapping is performed using sticky Delta traps baited with pink gypsy moth pheromone (mathuralure).

Results

The survey was conducted in 10 provinces for a total of 262 sites (Table 6).

Table 6. Pink gypsy moth survey results for 2010-2011.

Province	Sites	Results
Alberta	22	No detections
British Columbia	84	No detections
Manitoba	21	No detections
New Brunswick	20	No detections
Newfoundland & Labrador	12	No detections
Nova Scotia	20	No detections
Ontario	39	No detections
Prince Edward Island	9	No detections
Québec	15	No detections
Saskatchewan	20	No detections

Maps showing surveyed sites for pink gypsy moth:

- Survey map for *L. mathura*, Alberta
- Survey map for *L. mathura*, British Columbia
- Survey map for *L. mathura*, Manitoba
- Survey map for *L. mathura*, New Brunswick
- Survey map for *L. mathura*, Newfoundland & Labrador
- Survey map for *L. mathura*, Nova Scotia
- Survey map for *L. mathura*, Prince Edward Island
- Survey map for *L. mathura*, Ontario
- Survey map for *L. mathura*, Québec
- Survey map for *L. mathura*, Saskatchewan

1.7 Brown spruce longhorn beetle (*Tetropium fuscum*)

Background

The quarantine pest brown spruce longhorn beetle (BSLB) was first detected in Point Pleasant Park, Halifax, Nova Scotia in 1999. Subsequent investigations confirmed that beetles collected in the park as early as 1990 were, in fact, BSLB. In 2010, the detection survey for BSLB continued to include extensive trapping in eastern Canada. The primary goal of this survey is to determine the extent of the beetle's distribution within Nova Scotia and to confirm that it had

not spread to other provinces. This survey is conducted to support regulatory programs, including directive D-98-08 (Entry Requirements for Wood Packaging Material into Canada) and D-02-12 (Import requirements for non-processed wood and other non-propagative wood products, except solid wood packaging material, from all areas other than the continental United States).

Methodology

Trapping was conducted using IPM intercept panel traps or Colossus traps with ultra-high-release (UHR) ethanol lure, a UHR BSLB lure and a BSLB pheromone lure developed by NRCan-CFS. In Québec, New Brunswick, Prince Edward Island, and Newfoundland & Labrador, trapping was conducted at priority sites such as sawmills, pulp mills, campgrounds and ports. Also, trapping occurred in general forested areas in Québec, Prince Edward Island and Newfoundland & Labrador. In Nova Scotia and New Brunswick, delimitation surveys in general forested areas were performed using a zonal approach around the BSLB Containment Area. Additionally, intensive trapping surveys around satellite sites were conducted outside of the Containment Area where BSLB has been intercepted in previous survey seasons.

Results

The survey was conducted at 838 sites in Québec and Atlantic Canada (Table 7).

Table 7. Brown spruce longhorn beetle survey results for 2010-2011.

Province	Sites	Results
New Brunswick	214	No detections
Newfoundland & Labrador	23	No detections
Nova Scotia	535	<i>T. fuscum</i> was detected at 30 sites
Prince Edward Island	36	No detections
Québec	30	No detections

Maps showing surveyed sites for brown spruce longhorn beetle:

- Survey map for *T. fuscum*, Eastern Canada
- Survey map for *T. fuscum*, Central Nova Scotia
- Map for *T. fuscum*, Positive Sites Outside the Containment Area (2006-2010)

1.8 Elm bark beetle (*Scolytus jacobsoni*)

Background

The elm bark beetle (*Scolytus jacobsoni*) is native to Asia and breeds within *Ulmus*, *Carpinus*, *Pyrus*, *Betula*, *Prunus* and *Malus* host trees. The elm bark beetle was first detected in 2009 at the Greater Vernon Recycling and Disposal Facility (south of Vernon, British Columbia) as part of the invasive alien forest insect trapping survey. Currently, this pest is not known to occur in Canada since only one male beetle was detected. The primary goal of this survey is to determine if the elm bark beetle had become established in the Okanagan area in British Columbia and to provide a basis for sound regulatory decisions.

Methodology

Surveys were conducted using two types of traps. Lindgren funnel traps (12 units) were placed at the Vernon and Kelowna landfills and various orchards in the Okanagan area. Sticky elm bark beetle panel traps were placed on the trunk of landscape/boulevard host trees within each of the selected cities. Four lures, 4-methyl-3-heptanol, ultra high release ethanol, 2-methyl-3-buten-2-ol and European elm bark beetle, were individually installed on a given trap. As per the invasive alien forest insect trapping survey, all specimens were identified to determine if the elm bark beetle and any other non-indigenous species were present.

Results

The survey consisted of 94 traps placed at 10 sites near Vernon and Kelowna, British Columbia. There were no detections in 2010-2011.

Maps showing surveyed sites for elm bark beetle:

- Survey map for *S. jacobsoni*, British Columbia

2 INVASIVE PLANTS SURVEYS

2.1 Woolly cupgrass (*Eriochloa villosa*)

Background

Woolly cupgrass was first discovered in 2000 in an experimental test plot close to St-Hyacinthe, Québec. Since then, its occurrence has been reported in 5 municipalities of Québec (St-Hyacinthe, St-Cesaire, Bedford, Standbridge Station and St-Denis-sur-Richelieu). This survey was conducted to detect and delimit populations of woolly cupgrass.

Methodology

Delimitation surveys were conducted at sites where the presence of the weed has been confirmed in the past and also in neighboring fields and ditches. Detection surveys were also conducted targeting fields of oilseeds (canola, flax and soybeans), cereals, pulses (peas and beans), corn and millet. Visual inspection was carried out along field edges / perimeter, field gateways, farm lanes leading to the field and ditches running parallel to the field.

*Please note that each site represents a variable number of fields surveyed.

Results

The detection survey was conducted in 225 fields at 17 farm sites. Woolly cupgrass was found in 33 fields at 8 sites, 3 of which were new producers.

Table 8. Woolly cupgrass survey results for 2010-2011.

Province	Sites	Results
Québec	17	Detected at 8 sites (33 fields), including 3 new producers in St-Hyacinthe, Notre-Dame-de-Stanbridge and Pike River.

Map showing surveyed sites for woolly cupgrass:

- Survey map for *E. villosa*, Québec

2.2 Invasive plant survey

Background

The introduction of the invasive alien species program within CFIA has increased efforts to treat pest plants in the same way that insects and diseases are regulated. A number of plants have been added to the Federal Noxious Weeds list under the *Seeds Act* and are now being considered for inclusion in the Regulated Pest List under the *Plant Protection Act*. The main objectives for this survey are to provide a basis for sound regulatory decisions and information in support of the development of regulatory programs. This survey provides up to date information on the status of invasive plants in Canada and valuable data to develop effective control programs when necessary.

Methodology

The survey was divided into early (June) and late summer (August to early September) surveys to maximize the period during which the presence of inflorescences makes the weeds easier to detect. In early summer, targeted species were jointed goatgrass (*Aegilops cylindrica*), slender foxtail (*Alopecurus myosuroides*), common crupina (*Crupina vulgaris*), spring milletgrass (*Milium vernale*), devil's-tail tearthumb (*Persicaria perfoliata*), silverleaf nightshade (*Solanum elaeagnifolium*) and Syrian bean-caper (*Zygophyllum fabago*). In late summer, targeted species were yellow bluestem (*Bothriochloa ischaemum*), Iberian starthistle (*Centaurea iberica*), yellow starthistle (*Centaurea solstitialis*), Paterson's curse (*Echium plantagineum*), woolly cupgrass (*Eriochloa villosa*), goat's-rue (*Galega officinalis*) and kudzu (*Pueraria Montana*).

The detection survey was conducted at identified high risk sites as well as in waste areas and ditches adjacent to those sites. The high risk sites for this survey were identified as seed and grain storage, handling and processing facilities (eg. elevators, flour mills, oil crushers, seed cleaners, feed mills including bird seed, etc) that import material from the United States and fields of oilseeds (canola, flax and soybeans), cereals, pulses (peas and beans), corn and millet. Visual inspection of high risk and adjacent sites was carried along field edges, field gateway, farm lanes leading to the field and ditches running parallel to the field.

Additionally, two delimitation surveys based on visual inspections were conducted in 2010. The first was in southwestern Ontario for *Pueraria montana* (kudzu) near a known intentional planting along the shore of Lake Erie near Leamington. This survey was conducted through a contract with the Ontario Ministry of Natural Resources. The methodology of the survey was discussed amongst a number of agencies and it was decided that it would be best to conduct an aerial survey using rotary winged aircraft due to the difficult terrain around the infestation. The aircraft flew at altitudes of less than 500 feet for a distance of 52 km to the west and 180 km to the east of the known infestation. The second delimitation survey was conducted for *Galega officinalis* by scouting around the known populations in Ottawa (Petrie Island), Beacon Hill North, Niagara-on-the-Lake and Niagara Falls, Ontario.

Results

The high risk sites survey was conducted in all provinces (Table 9). During the kudzu delimitation survey, one suspect site was identified from the air near Kingsville but following ground truthing inspections it was determined that the site was negative for presence of kudzu. The delimitation survey for *G. officinalis* revealed that the populations at all four locations were healthy and thriving. At Petrie Island the infested area is about 5000 m² in size. It also appeared to be spreading along the shoreline and in a low lying forested land. The population located near Shefford Road in Ottawa covered three private properties near an industrial site. *G. officinalis* was also found to be widespread at two sites along roadways in Niagara-on-the-Lake and Niagara Falls. At both sites the plants appeared to be spreading away from roadsides to adjacent semi-natural areas.

Table 9. Summary for the 2010-2011 invasive plant survey in high-risk pathway locations.

Province	In-Crop Sites	Seed and Grain Handling Sites	Results
Alberta	11	12	No target invasive plant species detected.
British Columbia	3	2	
Manitoba	20	17	
New Brunswick	0	1	
Newfoundland & Labrador	3	0	
Nova Scotia	1	6	
Ontario	18	7	
Prince Edward Island	20	5	
Québec	13	20	
Saskatchewan	7	17	

3. HORTICULTURE PEST SURVEYS

3.1 Ramorum blight (*Phytophthora ramorum*) - National detection survey

Background

Since 2003, ramorum blight has been detected in a number of retail/wholesale nurseries in the southern coastal area of British Columbia. The primary goal of this survey is to provide information on the national status of ramorum blight in Canadian nurseries. More specifically, monitoring of ramorum blight is required to support eradication programs and detect new populations.

Methodology

The national survey targeted propagation nurseries in British Columbia, Ontario, Québec, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland & Labrador. In addition to those selected for the national survey, facilities where ramorum blight was previously found were monitored according to post-eradication protocols PI-010 (Eradication Protocol for Propagation Nurseries Confirmed with *Phytophthora ramorum*) and PI-011 (Eradication Protocol for Retail Nurseries Confirmed with *Phytophthora ramorum*).

The national ramorum blight survey was conducted from May to September, with the majority of the inspection conducted during the spring months. The survey covered 30% to 100% of the production and wholesale nurseries in each province depending on the size of the industry. This survey focused primarily on symptomatic high-risk hosts from the genera: *Rhododendron* (includes azalea), *Camellia*, *Pieris*, *Kalmia*, and *Viburnum*. Where there were few or no plants of these five genera present at the facility, host species listed in Appendix 1 of CFIA Policy Directive D-01-01: "Phytosanitary Requirements to Prevent the Entry and Spread of *Phytophthora ramorum*", were inspected.

Results

The survey was conducted at 222 sites in all provinces except Alberta, Manitoba and Saskatchewan (Table 10). Ramorum blight was not detected in the 2010-2011 national detection survey; however detections were made at previously positive sites in British Columbia.

Table 10. Ramorum blight survey results for 2010-2011.

Province	Sites	Samples	Results
British Columbia	77	2447*	Detected on Vancouver Island & in lower mainland, B.C.
New Brunswick	16	28	No detections
Newfoundland & Labrador	1	2	No detections
Nova Scotia	5	2	No detections
Ontario	78	397	No detections
Prince Edward Island	7	0	No detections
Québec	38	99	No detections

*Includes samples from quarantine actions on four positive nurseries in lower mainland B.C. and follow-up at previously positive sites.

Maps showing surveyed sites for ramorum blight:

- Survey map for *P. ramorum*, British Columbia
- Survey map for *P. ramorum*, New Brunswick
- Survey map for *P. ramorum*, Newfoundland & Labrador
- Survey map for *P. ramorum*, Nova Scotia
- Survey map for *P. ramorum*, Ontario
- Survey map for *P. ramorum*, Prince Edward Island
- Survey map for *P. ramorum*, Québec

3.2 Greenhouse Survey

Background

Historically, the CFIA has only considered an organism to be a pest of quarantine significance if it were capable of establishing in the natural environment in Canada. Because of this, pests capable of establishing only in greenhouses but not outdoors have not been considered quarantine pests for Canada, even though they may pose a serious risk to greenhouse-grown crops and/or are of quarantine concern to Canada's trading partners. Between 2007 and 2009, CFIA held a series of workshops across Canada in order to consult with stakeholders regarding the regulation of greenhouse pests. The consultation indicated strong stakeholder support for CFIA to regulate those greenhouse pests that pose a significant risk to the Canadian greenhouse industry. The objective of this survey is to gain a better understanding of the pests that are already established in Canadian greenhouses and provide baseline information that is critical in establishing whether a pest can be considered a quarantine pest.

Methodology

Surveys were conducted using multiple techniques, including visual inspection, light trapping and sticky card trapping, to capture or sample different life stages of a variety of pests. Targeted sites consisted of greenhouses that were producing ornamental plants and vegetables. Facilities handling imported material for repacking in co-location with greenhouse production were selected in priority as they represent a higher risk of pest introduction.

Results

The survey was conducted in the provinces listed in Table 11. No pests of quarantine significance were detected in this survey.

Table 11. Greenhouse survey results for 2010-2011.

Province	Sites	Samples	Results
British Columbia	5	99	No pests of quarantine significance were detected in this survey.
New Brunswick	3	20	
Nova Scotia	1	5	
Ontario	10	59	
Québec	10	168	

3.3 Grapevine phytoplasmas (bois noir and flavescence dorée)

Background

Import of grapevines from countries other than the US is controlled through the certification of exporting nurseries. At present, only specific grapevine varieties and rootstock from France and Germany are approved for importation into Canada under this program. Flavescence dorée (FD) and bois noir (BN) are grapevine phytoplasma diseases that are considered quarantine pests in Canada. Bois noir was first detected in 2006 in British Columbia. There were two more detections in Ontario in 2007. The objective of this survey is to inspect all grapevine varieties imported from France and Germany in 2006 and to verify that the import controls implemented to prevent the introduction and spread of grapevine phytoplasmas in Canada have been effective.

Methodology

Facilities with previous bois noir positives were surveyed for three consecutive years following a find (in accordance with procedures to satisfy NAAPO eradication standards). In 2010-2011 surveys only remained for Ontario in response to the 2007 finds. Vines were visually inspected for symptoms of the disease between August 16 and September 17. Eight to ten leaves were collected from any canes showing symptoms consistent with phytoplasma infection.

Results

Twelve vineyards were surveyed in the Niagara region of Ontario. Thirty-one samples were collected based on the presence of symptoms consistent with those caused by phytoplasmas. No grapevine phytoplasmas were detected during this survey.

3.4 Oriental fruit moth (*Grapholita molesta*)

Background

The oriental fruit moth is native to China and Korea. It was first detected in Ontario in 1925. It was intercepted and eradicated in 1957 in British Columbia and annual surveys have been conducted since that time. The oriental fruit moth likely spreads to other countries in cocoons on dormant trees or in infested fruit. The principle host is *Prunus* spp.

Methodology

Surveys were conducted in orchards, hobby farms, ornamental nurseries and wholesale fruit handlers where target hosts were present (*Prunus persica*, *P. amygdalus*, *P. armeniaca*, *P. avium*, *P. domestica*, other *Prunus* spp., *Malus* spp., and *Cydonia oblonga*). Adult oriental fruit moths were surveyed using pheromone-baited Delta traps (Pherocon controlled-release septa). Traps were placed on target hosts by June 15th and were removed by September 20th, or by the first frost, whichever date was earliest. Target hosts were also visually inspected for visible signs of damage and for presence of larval specimens.

Results

One hundred and eleven sites were trapped in the Okanagan Valley, on Vancouver Island and on the lower mainland of coastal BC. No oriental fruit moths were captured in 2010-2011.

Map showing surveyed sites for oriental fruit moth:

- Survey map for *G. molesta*, British Columbia

3.5 Japanese beetle (*Popillia japonica*)

Background

The Japanese beetle has been present in Canada since 1939. This species of beetle affects more than 300 plant species, including some economically important commodity plants such as fruit trees, ornamental shrubs and roses, field crops, turf grasses, and sod. This survey was conducted to clarify the distribution of Japanese beetles for regulatory purposes (CFIA policy directive D-96-15: Phytosanitary Requirements to Prevent the Spread of Japanese Beetle, *Popillia japonica* in Canada and the United States). The main goal of this survey was pest detection in non-infested areas.

Methodology

Surveys for Japanese beetle were conducted in high risk areas such as nurseries, sod farms, golf courses, cemeteries, public parks and gardens, food terminals, truck and rail compounds/terminals, airports and border points. Adults were surveyed in grassy areas using a specialized funnel trap, baited with a sex pheromone and an aromatic floral lure. Traps were placed in the field from mid-June to mid-September.

Results

Surveys were conducted in British Columbia and Newfoundland & Labrador for a total of 615 sites (Table 12).

Table 12. Japanese beetle survey results for 2010-2011.

Province	Sites	Results
British Columbia	551	No detections
Newfoundland & Labrador	64	No detections

Maps showing surveyed sites for Japanese beetle:

- Survey map for *P. japonica*, British Columbia
- Survey map for *P. japonica*, Newfoundland & Labrador

3.6 Blueberry maggot (*Rhagoletis mendax*)

Background

Blueberry maggot is an indigenous pest of commercially grown lowbush and highbush blueberries in the Canadian Maritime Provinces. It is not found in Newfoundland & Labrador or in western Canada. This survey is being conducted in support of policies and programs related to CFIA policy directive D-02-04: Phytosanitary Requirements for the Importation from the Continental United States and for Domestic Movement of Commodities Regulated for Blueberry Maggot.

Methodology

Surveys for blueberry maggot were conducted in blueberry plantations and wild sites that contain host species. Pherocon AM traps, baited with ammonium acetate, were suspended in an inverted “V” shape 10 to 15 cm above lowbush/wild blueberry plants and placed at mid-canopy height in highbush blueberry plantations. Traps were in place prior to the flight period in late-June and were collected at the end of harvest (plantations) or fruit drop (wild sites), in late August or early September.

Results

Surveys were conducted at total for 112 sites in the four provinces shown in Table 13.

Table 13. Blueberry maggot survey results for 2010-2011.

Province	Sites	Results
British Columbia	32	No detections
Newfoundland & Labrador	24	No detections
Ontario	29	No new detections
Québec	16	No new detections

Maps showing surveyed sites for blueberry maggot:

- Survey map for *R. mendax*, British Columbia
- Survey map for *R. mendax*, Newfoundland & Labrador
- Survey map for *R. mendax*, Ontario
- Survey map for *R. mendax*, Québec

3.7 Apple maggot (*Rhagoletis pomonella*)

Background

Apple maggot is an indigenous pest of apples in Canada. The B.C. Interior is the last major apple growing area of North America free of this pest. The objective of this survey is the early detection of apple maggot in the BC Interior and to facilitate eradication should this pest be

found. This survey is being conducted in support of policies and programs related to CFIA policy directive D-00-07: Import and domestic requirements for fresh fruit and plants of hosts of apple maggot (*Malus* spp., *Crataegus* spp. and some species of *Prunus*) into British Columbia from Mexico, the continental United States, and infested areas of Canada).

Methodology

Host trees in organic orchards and on landowner property, as well as wild host trees along transportation routes, were primarily targeted for surveying since they do not receive insecticidal sprays. Trapping for adult flies was conducted with sticky red spheres baited with 10 g of ammonium carbonate crystals, (an apple maggot attractant). Traps were placed in host trees from June 15th to October 3rd.

Results

Traps for apple maggot were placed at 431 sites in the Okanagan and Creston Valleys and other areas of the southern interior of BC. No apple maggot specimens were detected in 2010-2011.

Map showing surveyed sites for apple maggot:

- Survey map for *R. pomonella*, British Columbia

3.8 Spotted wing drosophila (*Drosophila suzukii*)

Background

Spotted wing drosophila (SWD) was first recorded in Japan in 1916 and later in Korea and China. It was first identified in North America in August 2008 in California. By July 2009, it was found in Florida, Oregon and Washington. In September-October 2009, SWD was confirmed in British Columbia (BC). Unlike many other fruit flies, females lay eggs in ripening fruit as opposed to soft or over-mature fruit. As the larvae feed and develop, infested fruit becomes soft and unmarketable. SWD infests a wide variety of thin-skinned fruit including many types of berries, cherries, and grapes. The objective of this survey was to determine the extent of the distribution of SWD in Canada in order to aid decisions on its regulatory status.

Methodology

Adult SWD were collected using a Contech Inc. fruit fly trap with apple cider vinegar as an attractant. Traps were placed on hosts beginning in February and were removed by November 1st. Host plants include: *Prunus* spp. (cherry, peach, and plum), *Rubus* spp. (raspberry, blackberry), *Vaccinium* spp. (blueberry), *Fragaria* spp. (strawberry), *Malus* spp. (apple), and *Vitis* spp. (grape). Primarily urban and unsprayed host locations were targeted. Hosts were also observed for visual signs of SWD damage.

Results

Spotted wing drosophila surveys were conducted in all provinces in 2010-2011 for a total of 235 sites (Table 14).

Table 14. Spotted wing drosophila survey results for 2010-2011.

Province	Sites	Results
Alberta	18	<i>D. suzukii</i> detected in Red Deer
British Columbia	54	<i>D. suzukii</i> detected in Abbotsford and Port Coquitlam
Manitoba	21	<i>D. suzukii</i> detected in Winnipeg
New Brunswick	23	No detections
Newfoundland & Labrador	10	No detections
Nova Scotia	12	No detections
Ontario	24	<i>D. suzukii</i> detected in Niagara-on-the-Lake
Prince Edward Island	15	No detections
Québec	39	<i>D. suzukii</i> detected in Québec City
Saskatchewan	19	No detections

Maps showing surveyed sites for spotted wing drosophila:

- Survey map for *D. suzukii*, Alberta
- Survey map for *D. suzukii*, British Columbia
- Survey map for *D. suzukii*, Manitoba
- Survey map for *D. suzukii*, New Brunswick
- Survey map for *D. suzukii*, Newfoundland & Labrador
- Survey map for *D. suzukii*, Nova Scotia
- Survey map for *D. suzukii*, Prince Edward Island
- Survey map for *D. suzukii*, Ontario
- Survey map for *D. suzukii*, Québec
- Survey map for *D. suzukii*, Saskatchewan

3.9 Plum pox virus

For information on the PPV program visit the CFIA PPV page at the link below. Details on the surveys can be found in the Survey Updates section at the bottom of the PPV page:

www.inspection.gc.ca/plants/plant-protection/diseases/plum-pox-virus/eng/1323888514908/1323889333540

4. POTATO PEST SURVEYS

4.1 Potato cyst nematode (*Globodera rostochiensis*, *G. pallida*)

Soil sampling is conducted each year across Canada to monitor this pest. For information on this pest visit the CFIA golden nematode page at the link below:

www.inspection.gc.ca/english/plaveg/pestrava/gloros/glorose.shtml

APPENDIX 1 – SURVEY MAPS

Asian longhorned beetle | *Anoplophora glabripennis* | Longicorne asiatique

British Columbia | 2010 | Colombie-Britannique



 Grid survey location | site d'enquête par grille


Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

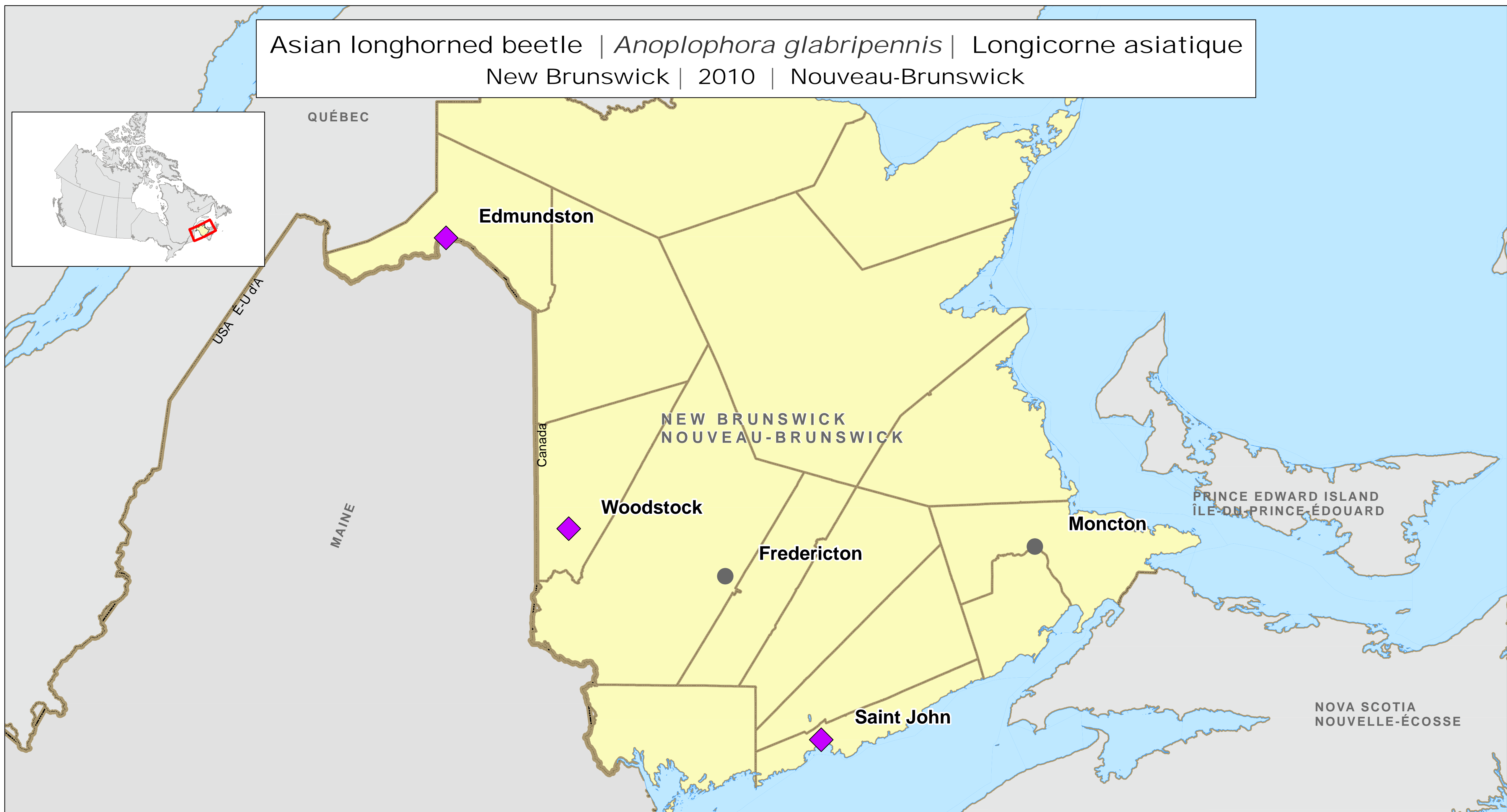
02550Km

02550Mi

Data Sources | Sources des données:
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2014 | 10 | 22

Asian longhorned beetle | *Anoplophora glabripennis* | Longicorne asiatique
New Brunswick | 2010 | Nouveau-Brunswick



 Grid survey location | site d'enquête par grille

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

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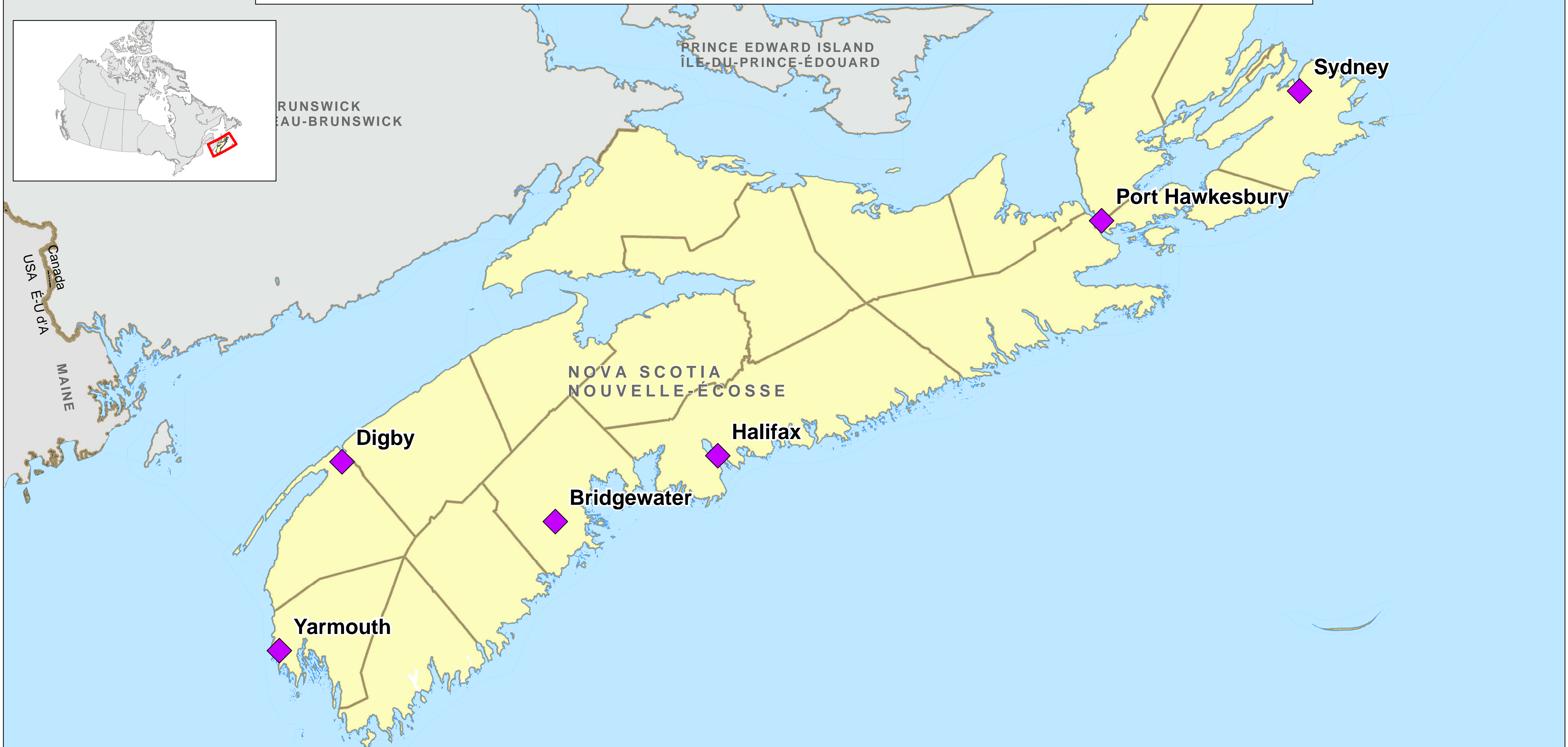
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Asian longhorned beetle | *Anoplophora glabripennis* | Longicorne asiatique

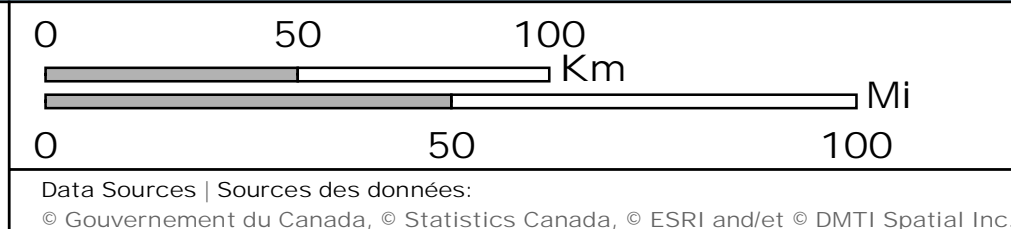
Nova Scotia | 2010 | Nouvelle-Écosse

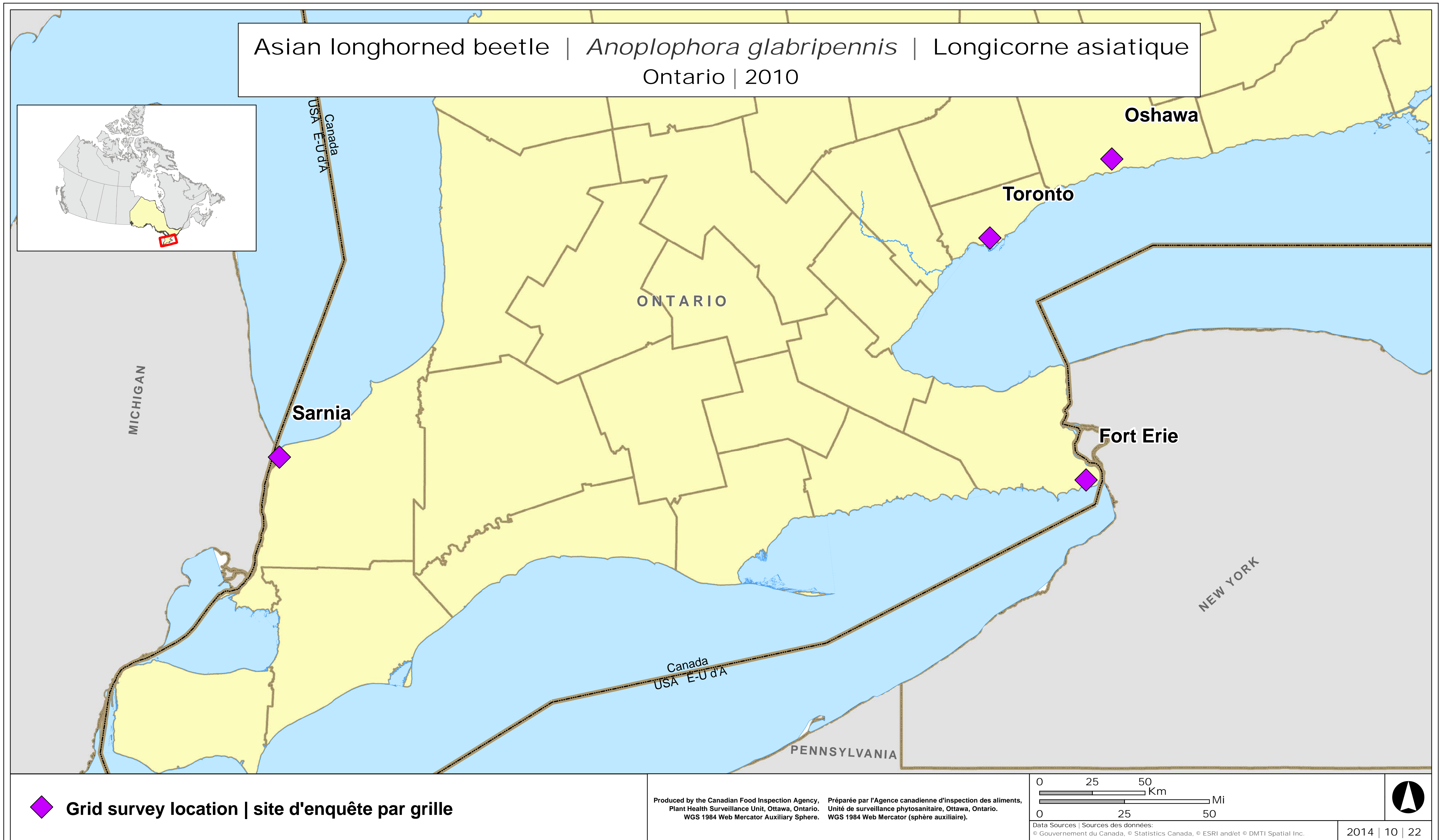


◆ Grid survey location | site d'enquête par grille

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
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Asian longhorned beetle | *Anoplophora glabripennis* | Longicorne asiatique

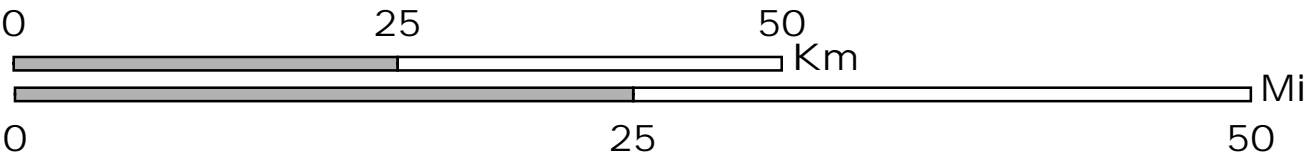
Prince Edward Island | 2010 | Île-du-Prince-Édouard



 Grid survey location | site d'enquête par grille

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
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Asian longhorned beetle | *Anoplophora glabripennis* | Longicorne asiatique

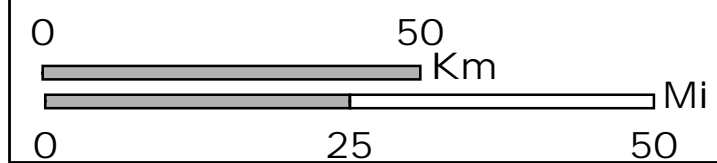
Québec | 2010



 Grid survey location | site d'enquête par grille

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
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Emerald ash borer | *Agrilus planipennis* | Agrile du frêne
Alberta | 2010



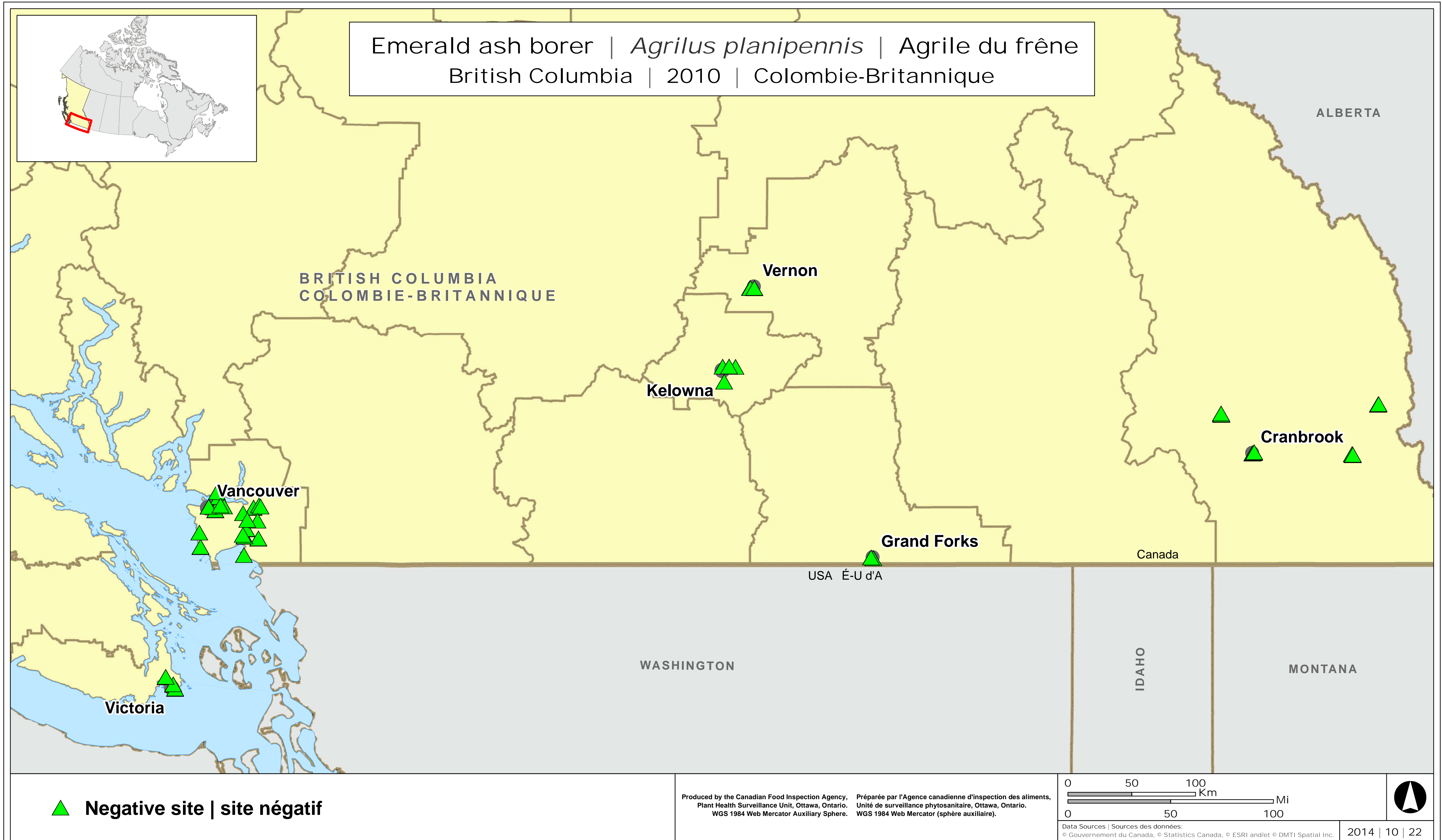
▲ Negative site | site négatif

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Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

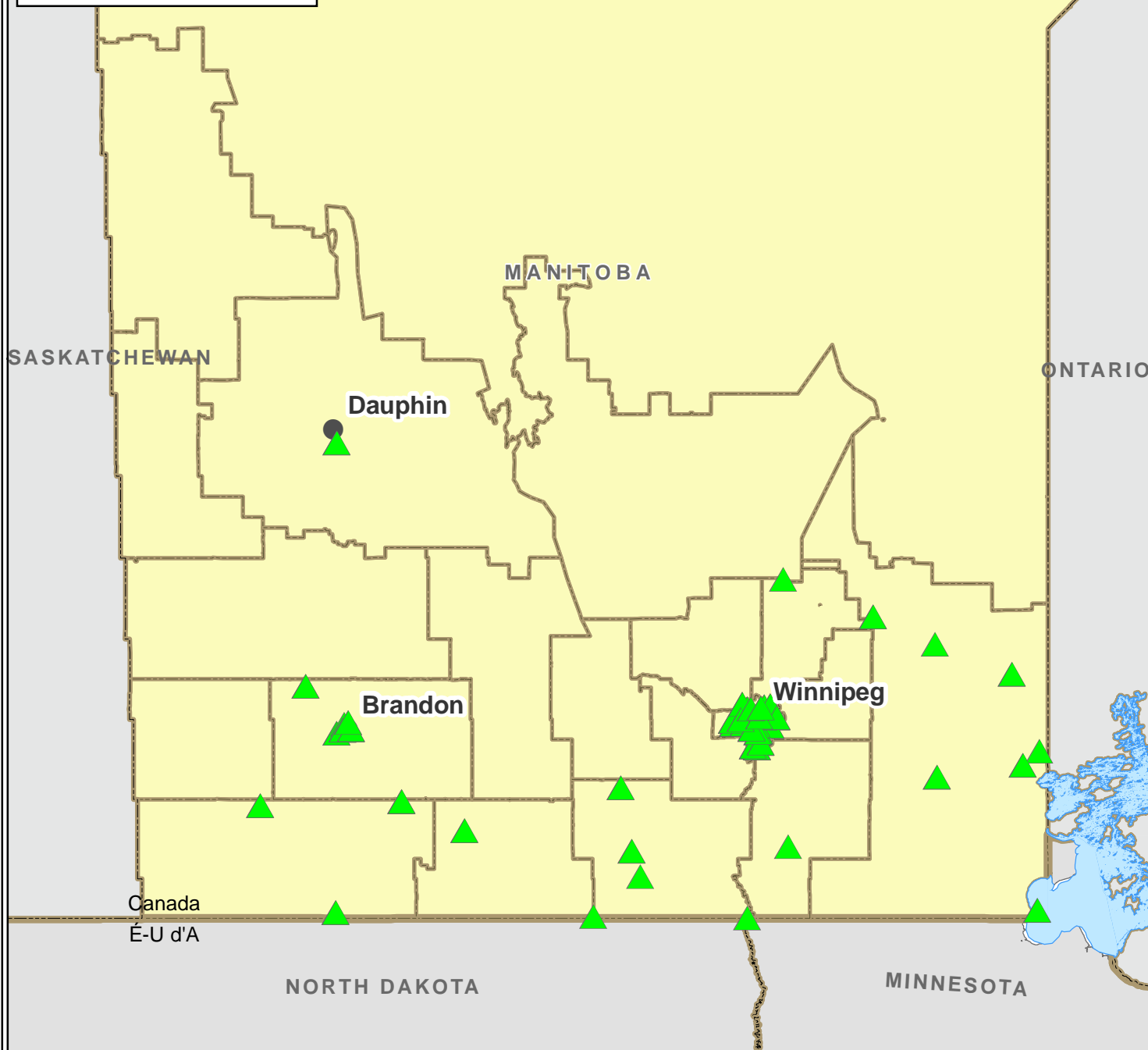
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Data Sources | Sources des données:
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2014 | 10 | 22



Emerald ash borer | *Agrilus planipennis* | Agrile du frêne
Manitoba | 2010



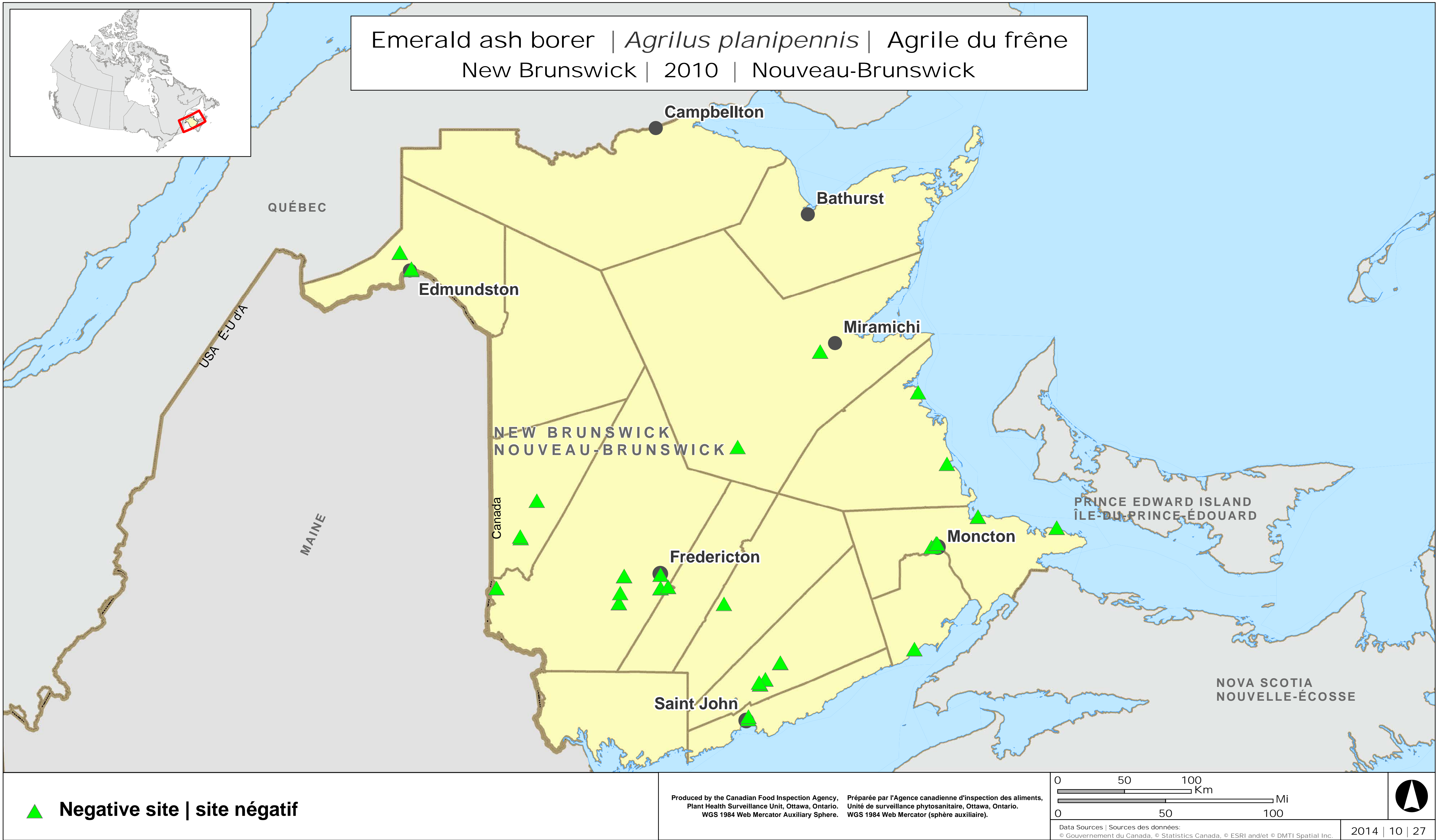
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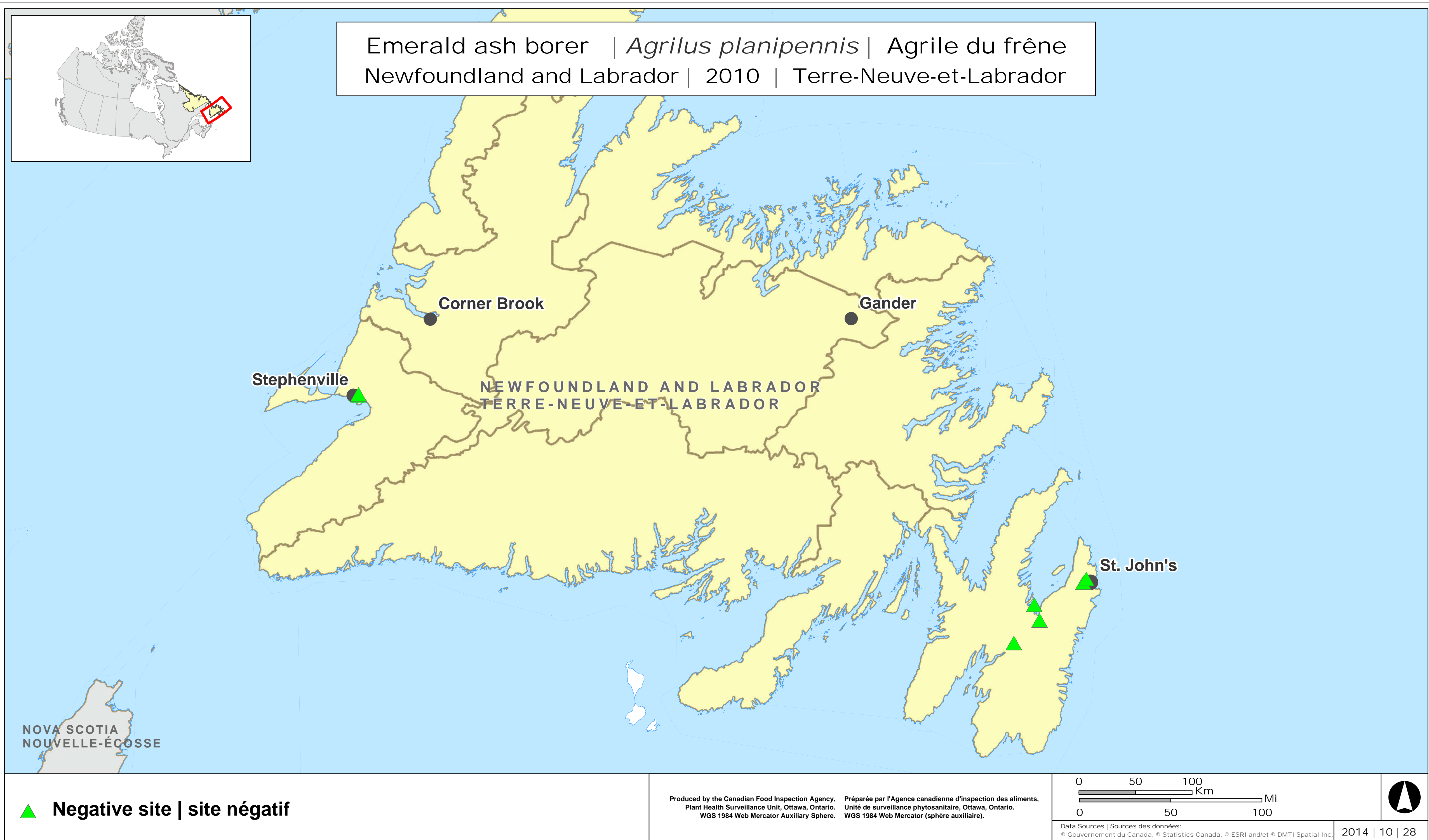
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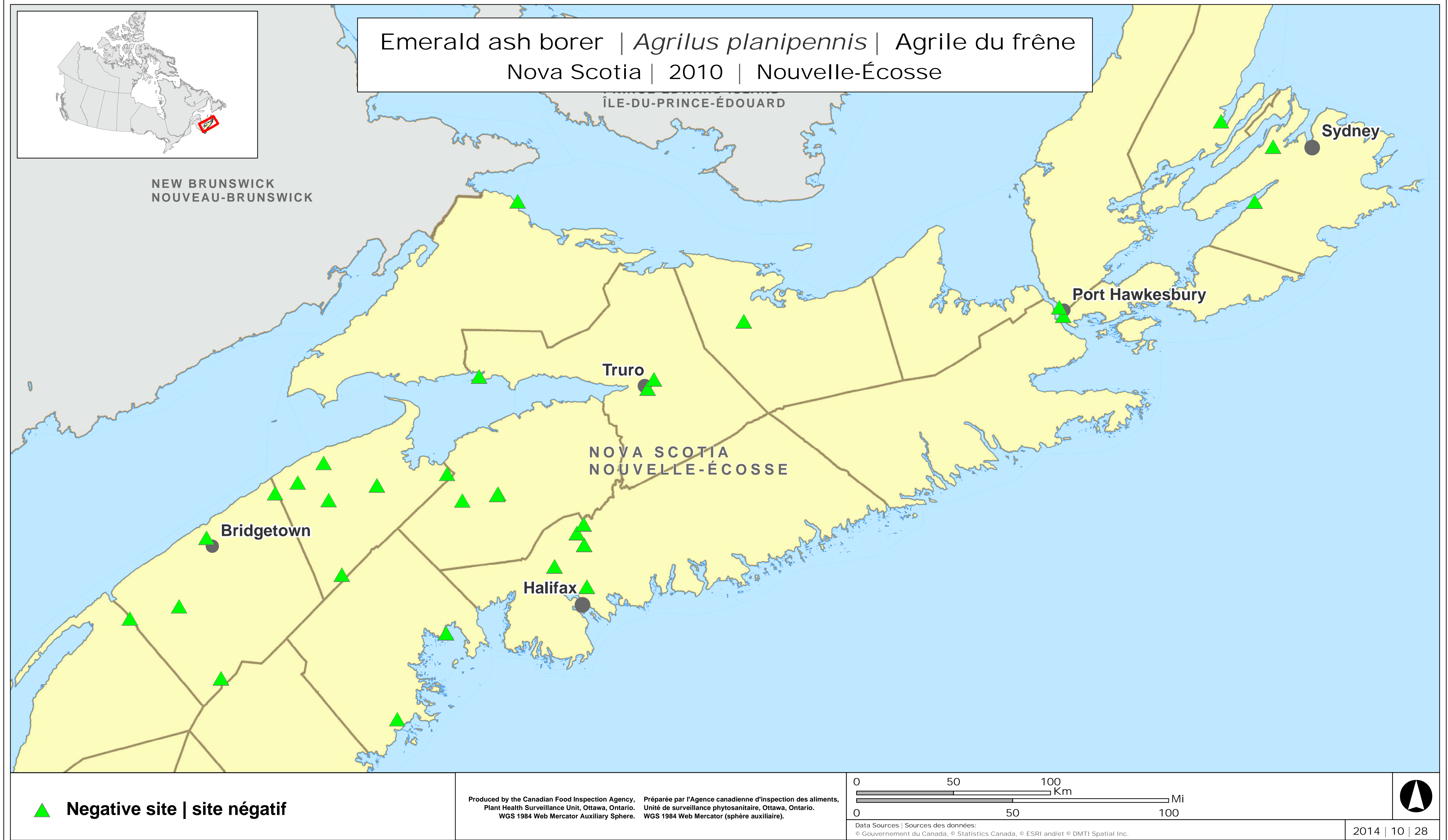
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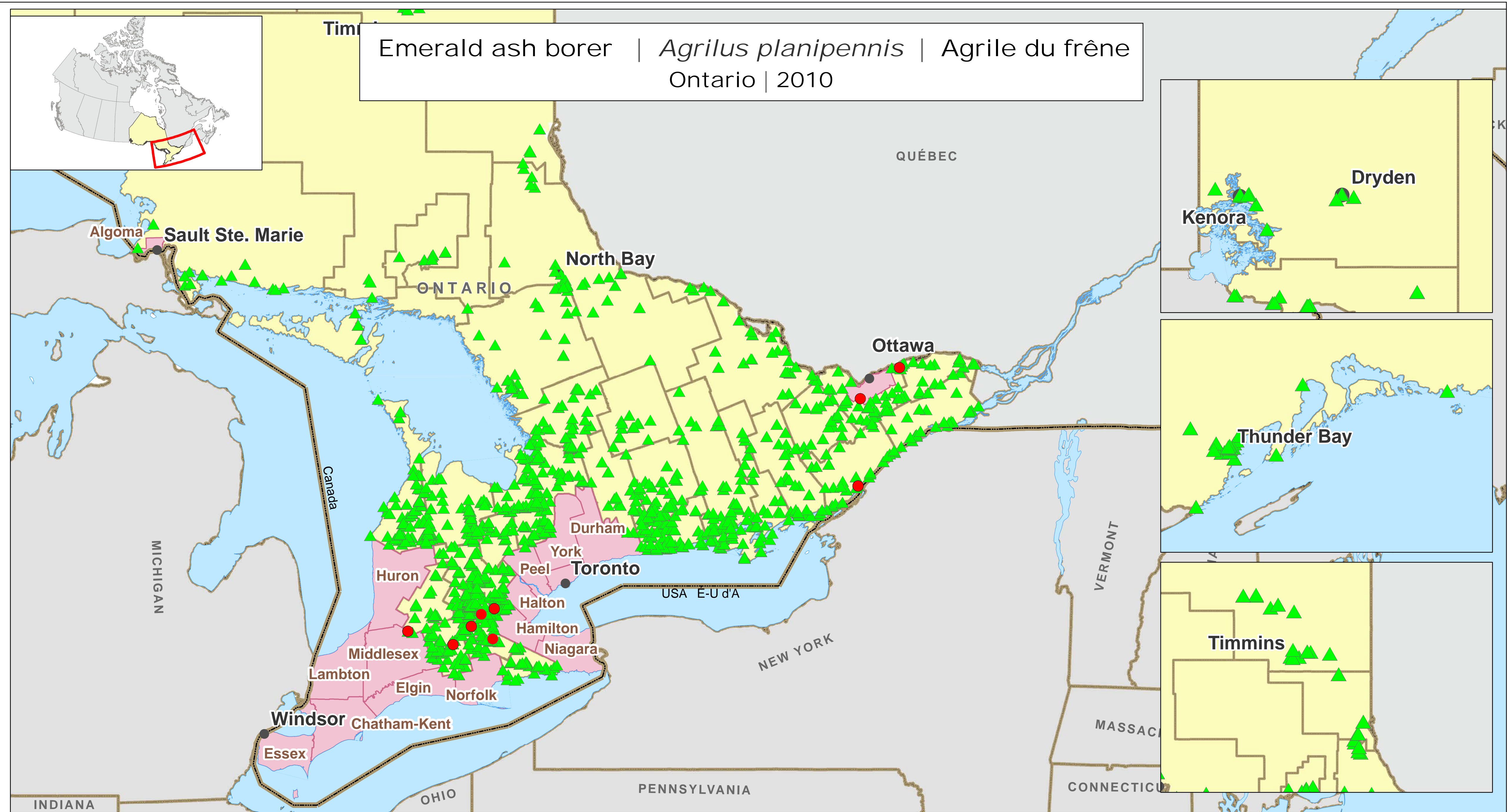


2014 | 10 | 27







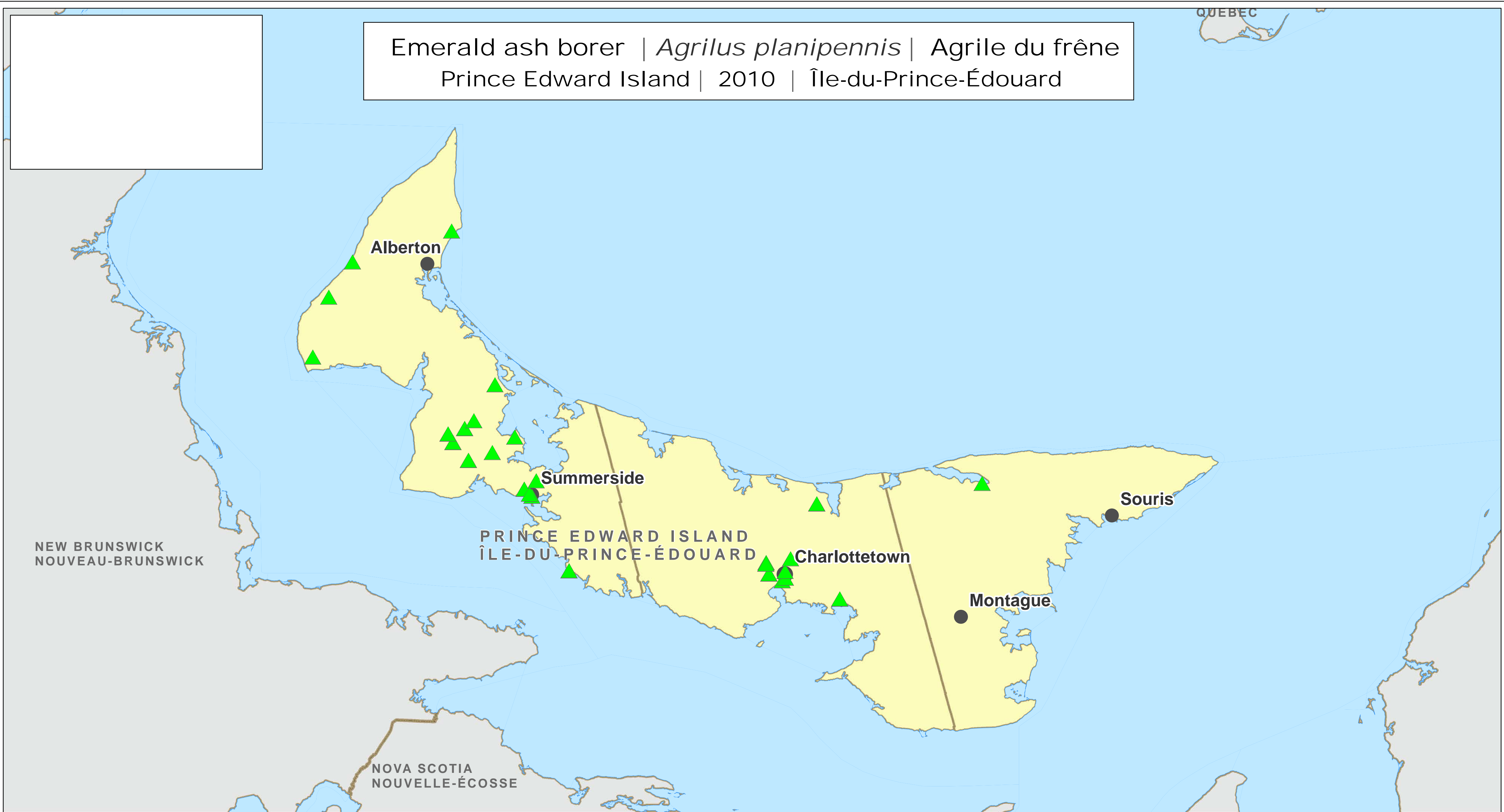


- Positive site | site positif
- ▲ Negative site | site négatif
- Regulated Area | Région réglementée

Produced by the Canadian Food Inspection Agency,
 Plant Health Surveillance Unit, Ottawa, Ontario.
 WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
 Unité de surveillance phytosanitaire, Ottawa, Ontario.
 WGS 1984 Web Mercator (sphère auxiliaire).

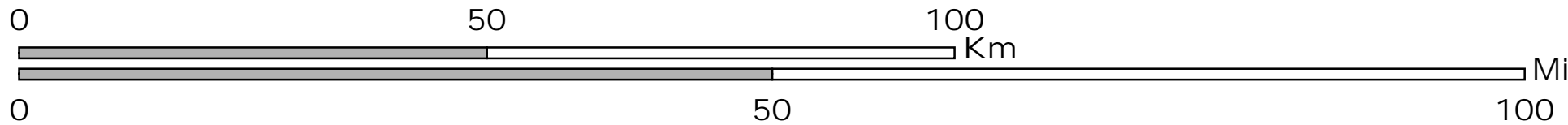




▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

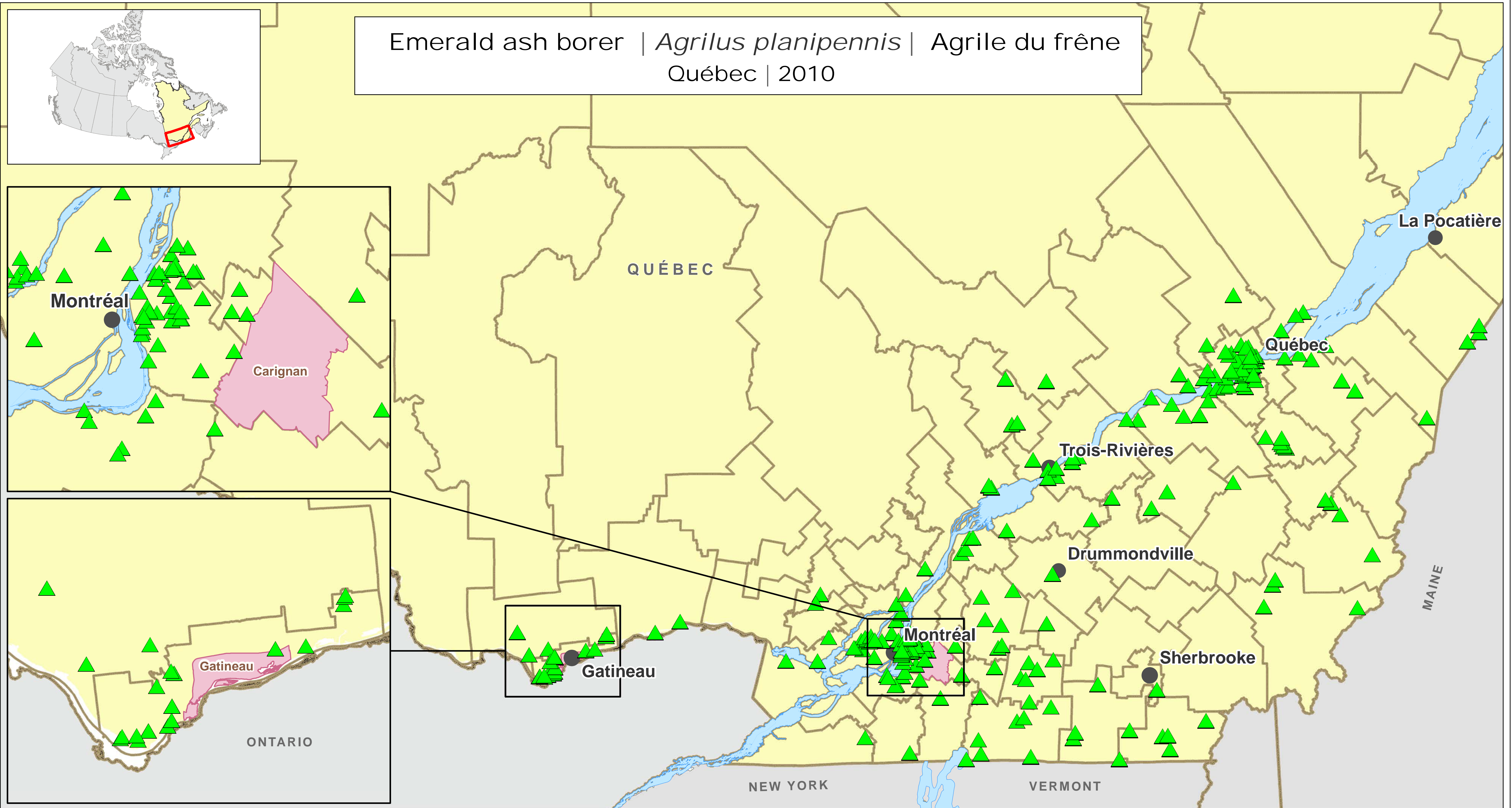
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WGS 1984 Web Mercator (sphère auxiliaire).



Data Sources | Sources des données:
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Emerald ash borer | *Agrilus planipennis* | Agrile du frêne
 Québec | 2010



 Positive site | site positif
 Negative site | site négatif

 Regulated Area | Région réglementée

Produced by the Canadian Food Inspection Agency,
 Plant Health Surveillance Unit, Ottawa, Ontario.
 WGS 1984 Web Mercator Auxiliary Sphere.

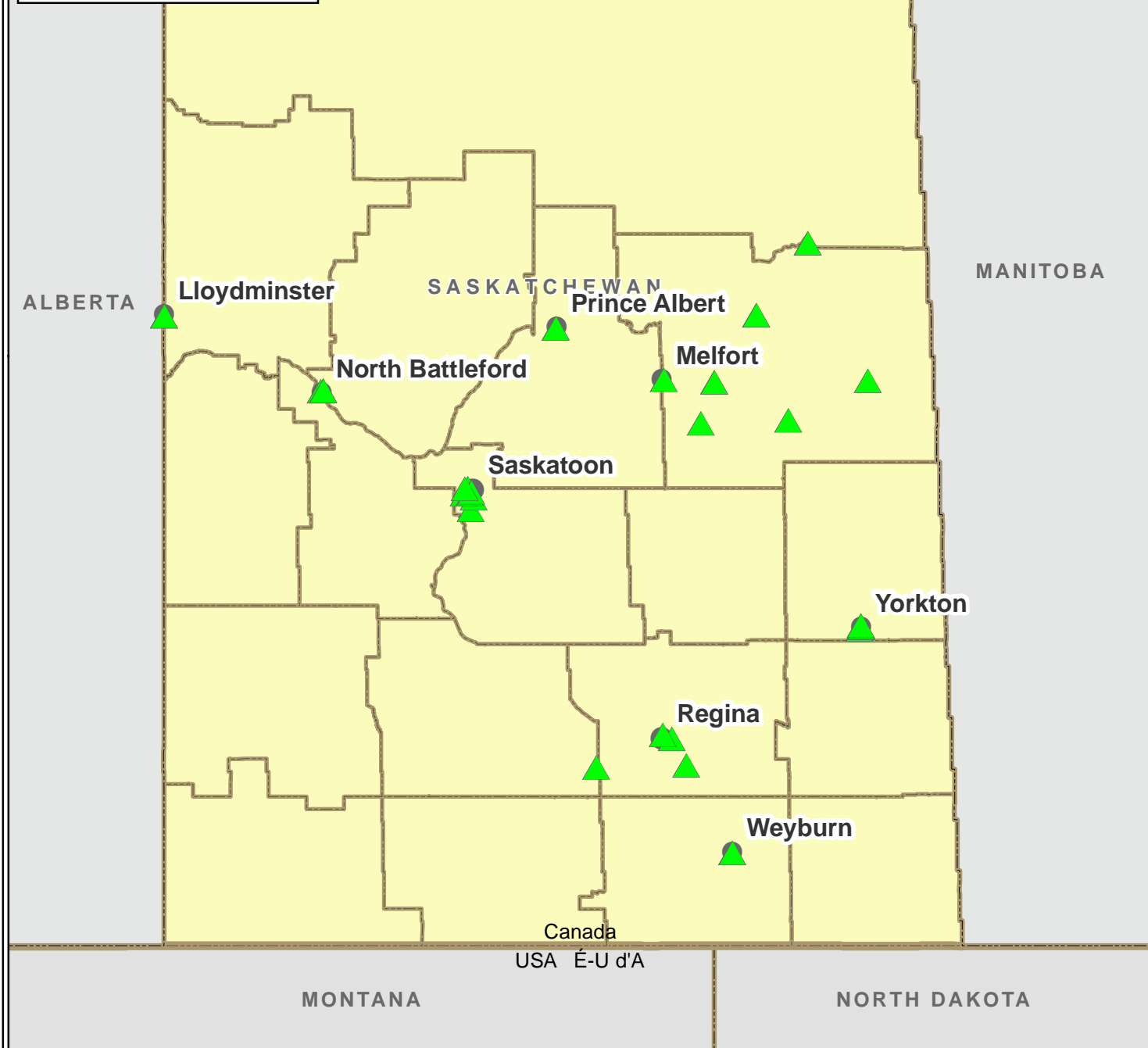
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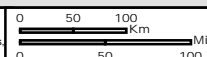
2014 | 10 | 31

Emerald ash borer | *Agrilus planipennis* | Agrile du frêne
Saskatchewan | 2010



▲ Negative site | site négatif

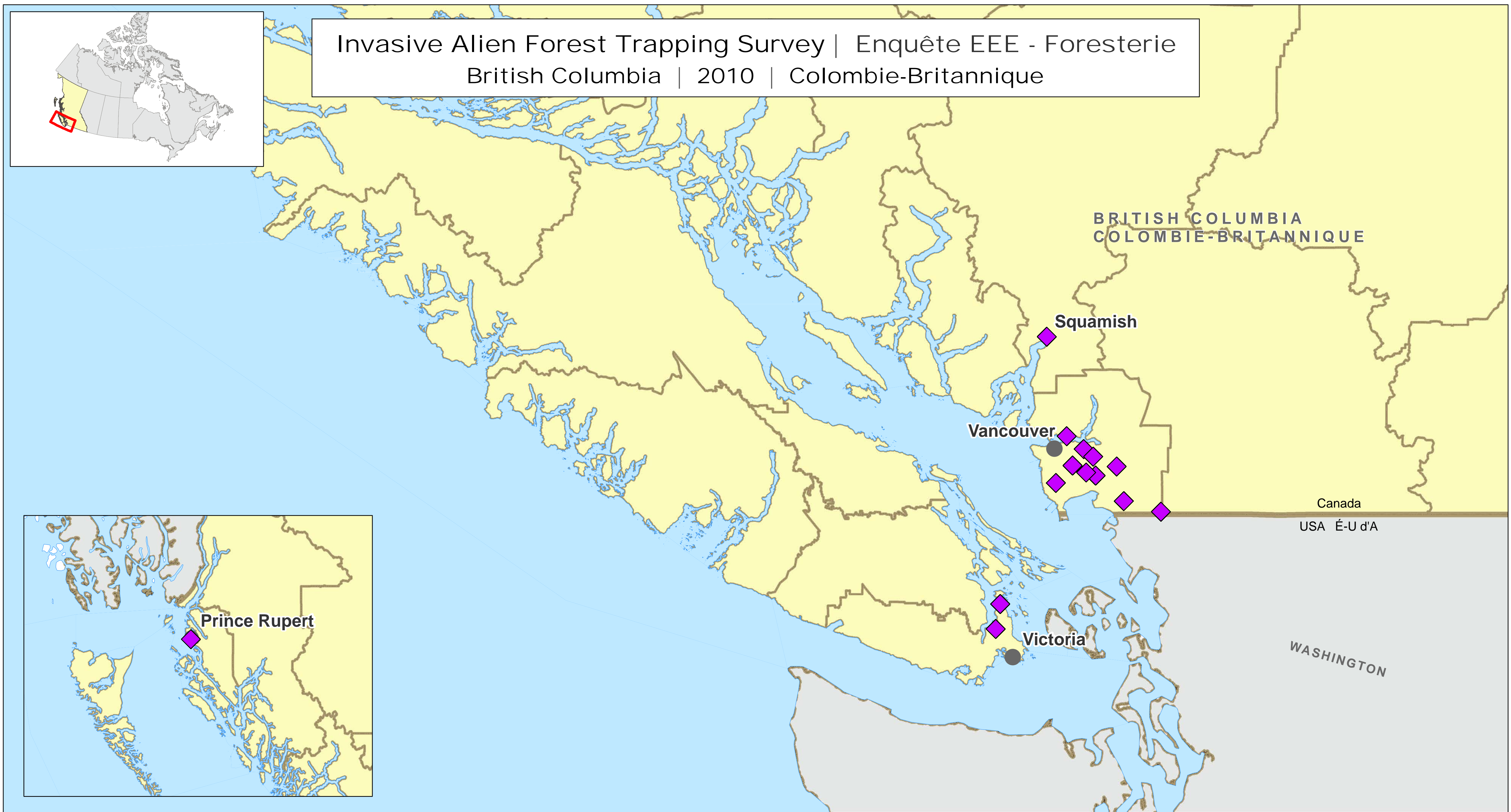
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Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).



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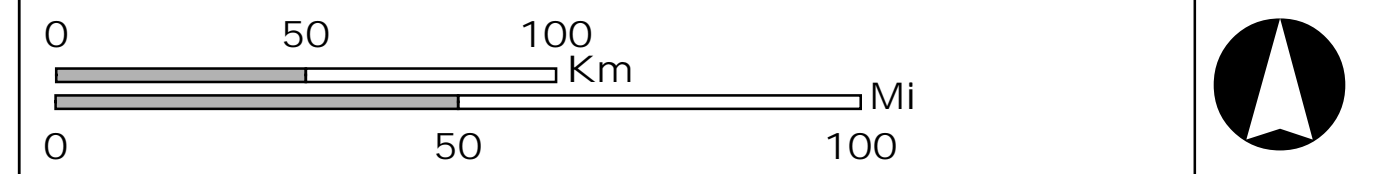


Invasive Alien Forest Trapping Survey | Enquête EEE - Foresterie
British Columbia | 2010 | Colombie-Britannique

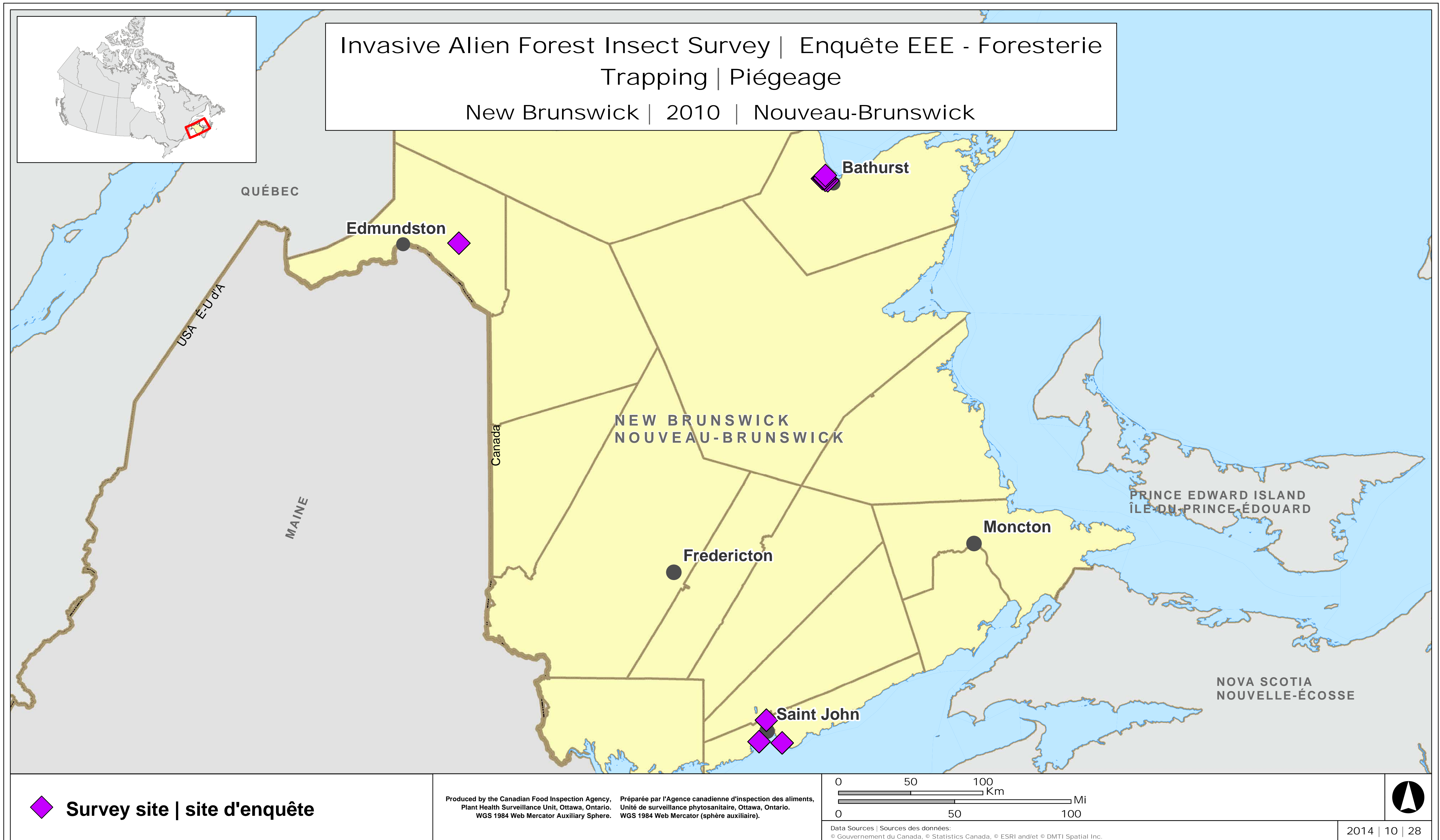


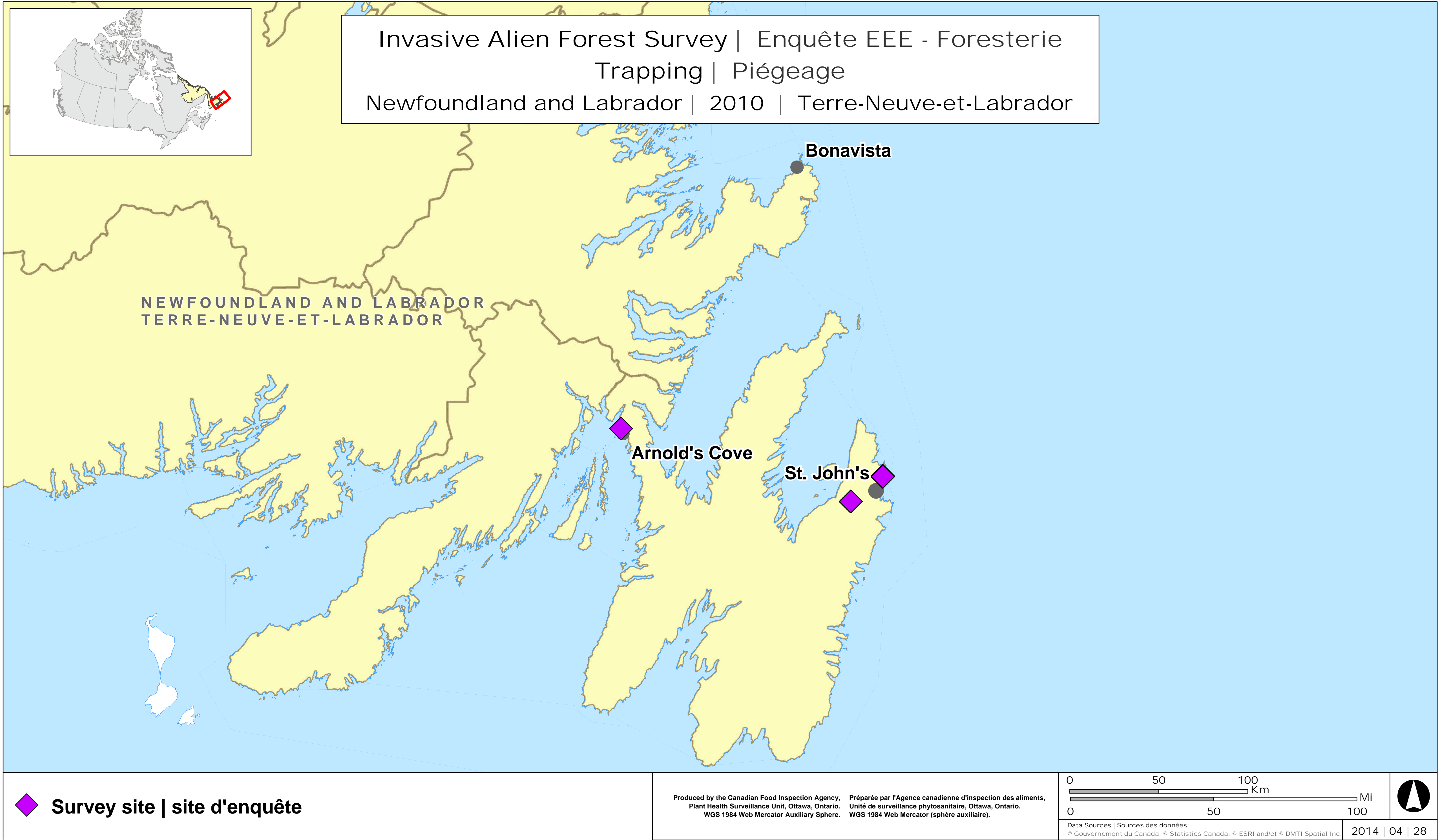
◆ Survey site | site d'enquête

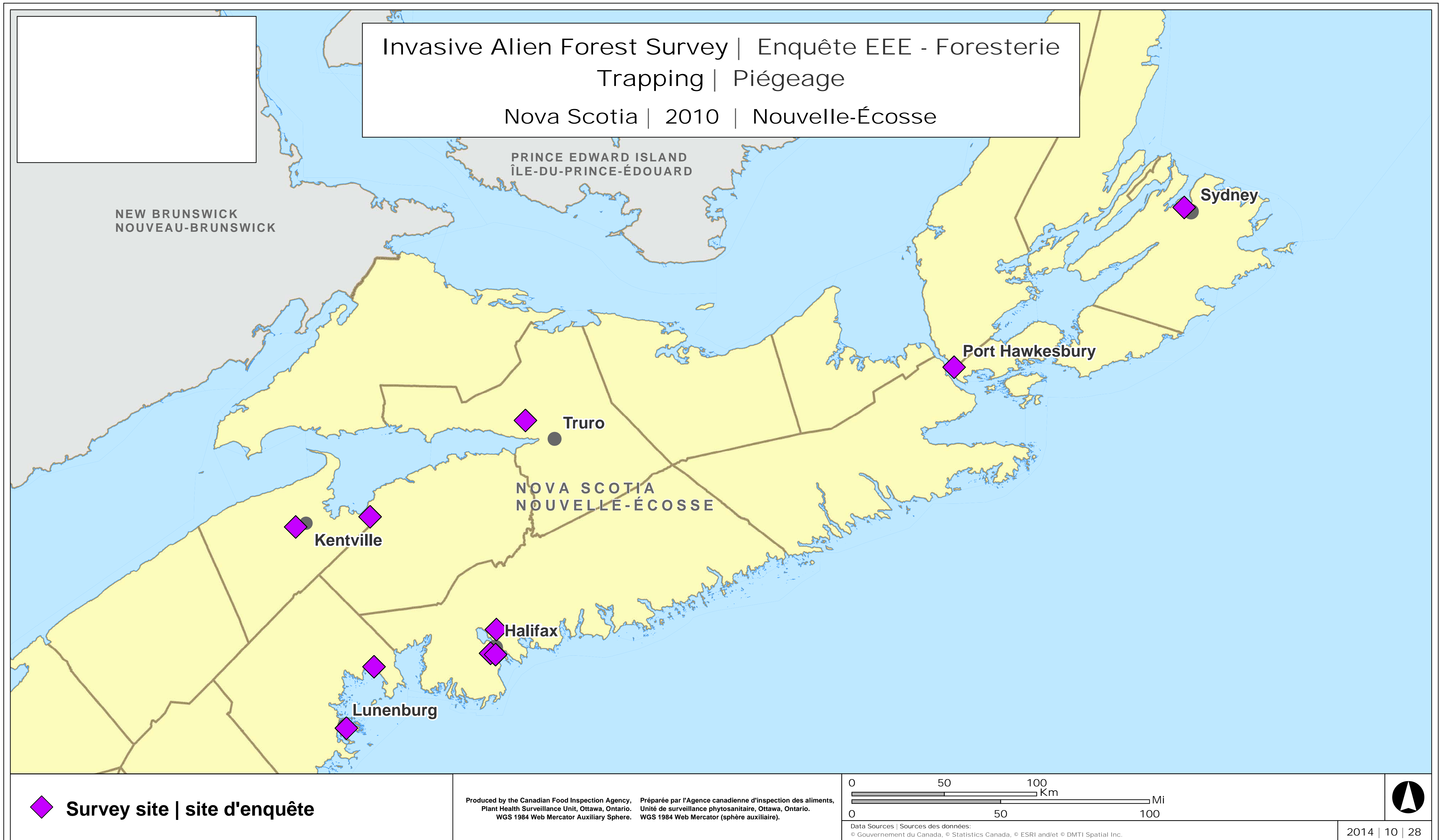
Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.

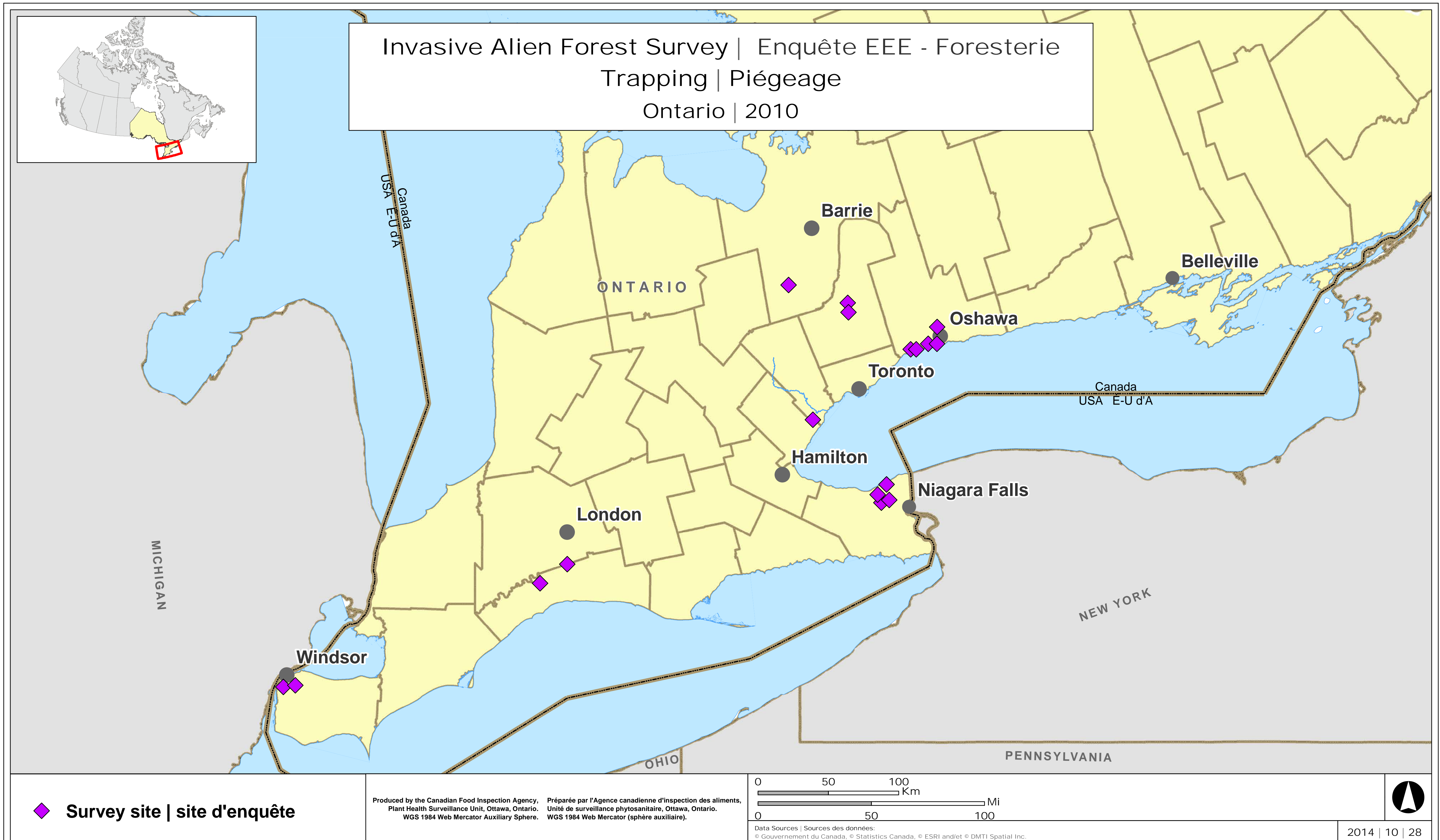


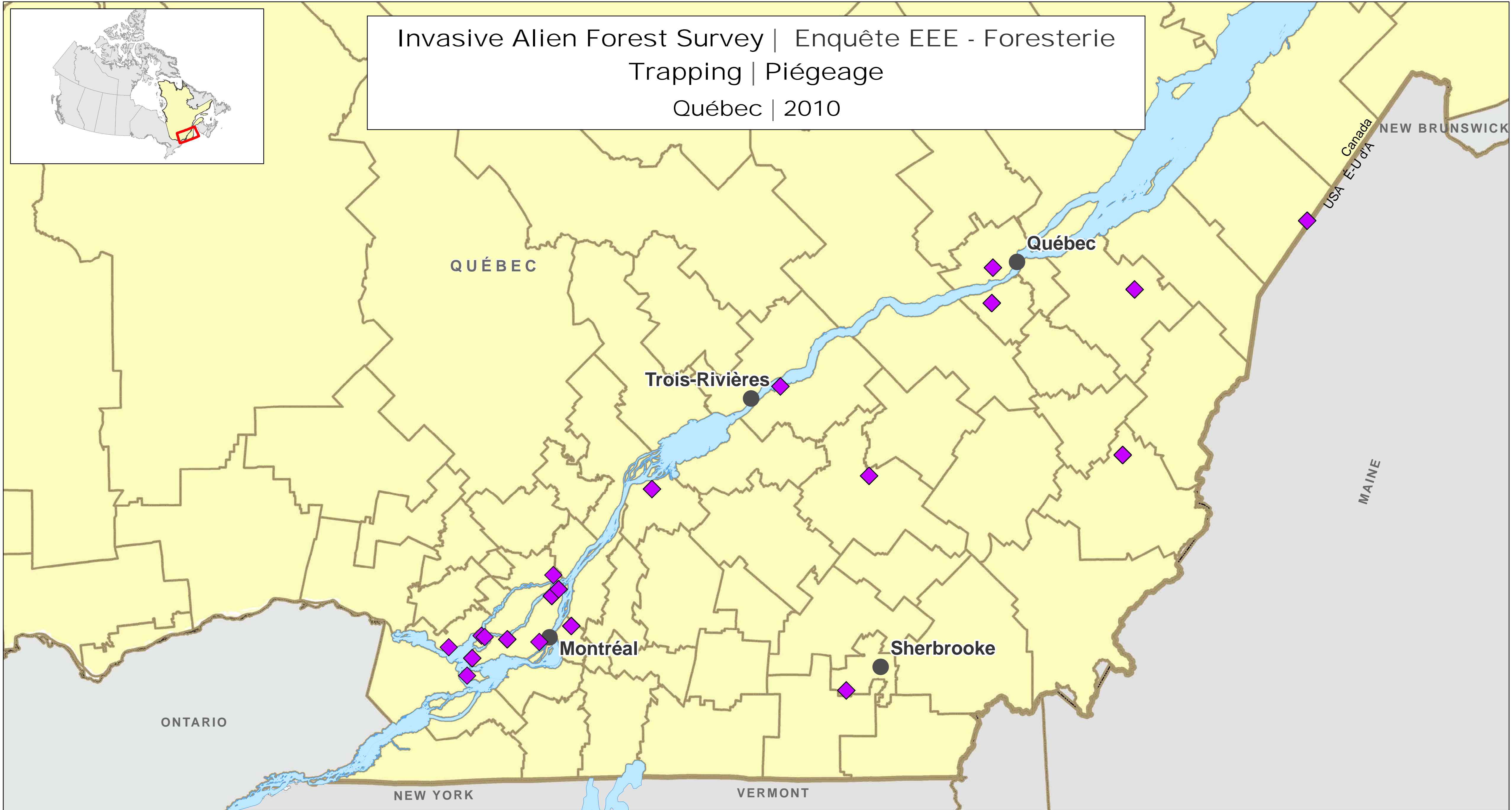
Data Sources | Sources des données:
© Gouvernement du Canada, © Statistics Canada, © ESRI and/et © DMTI Spatial Inc.





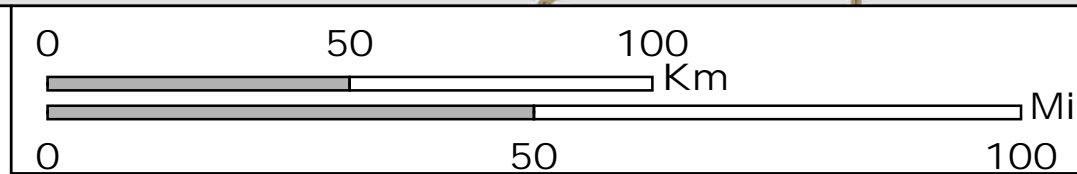




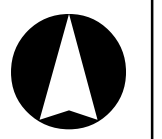


◆ Survey site | site d'enquête

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.



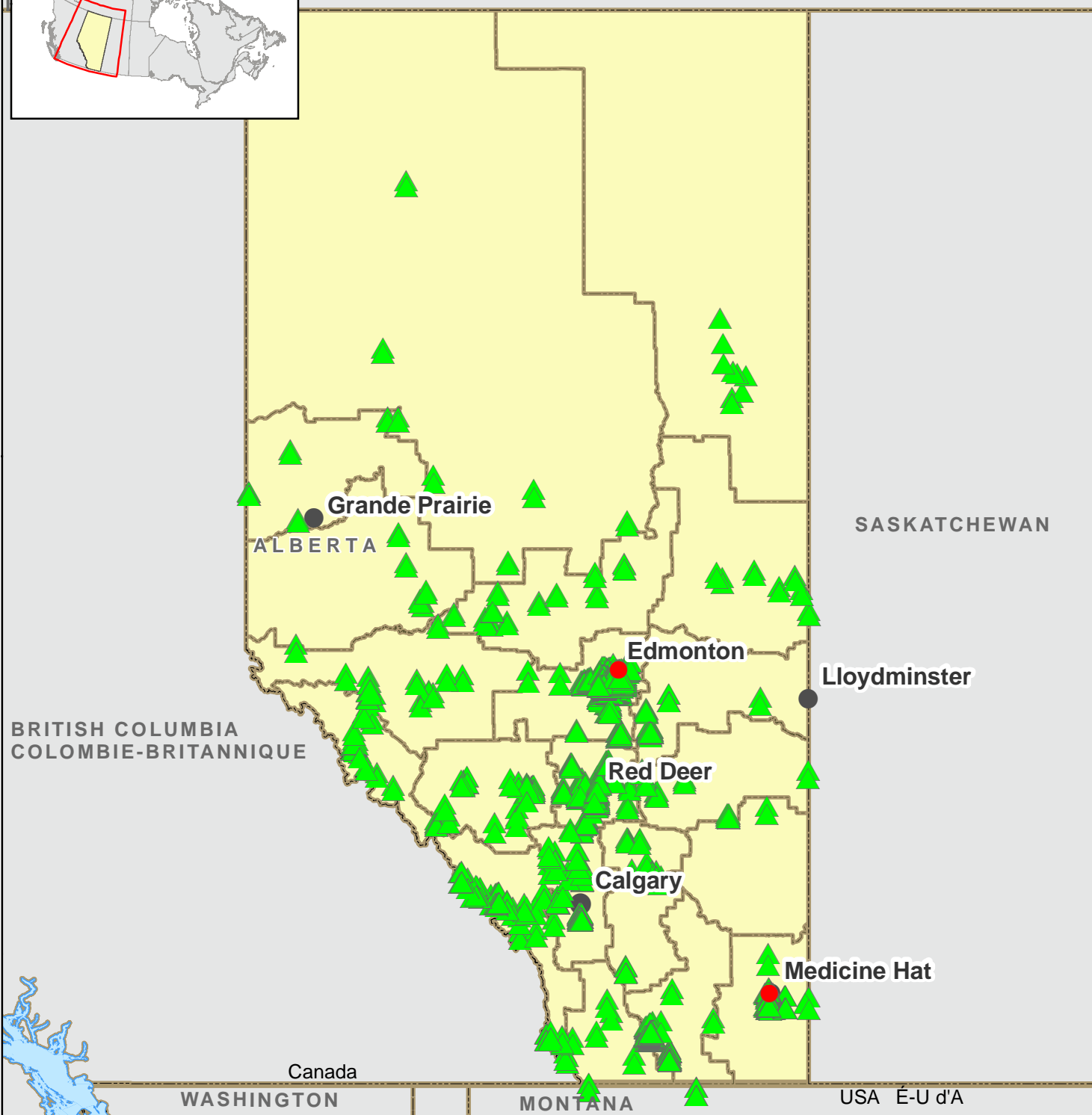
Data Sources | Sources des données:
© Gouvernement du Canada, © Statistics Canada, © ESRI and/or DMTI Spatial Inc.



European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne
Alberta | 2010



NORTHWEST TERRITORIES
TERRITOIRES DU NORD-OUEST



- Positive site | site positif
- ▲ Negative site | site négatif

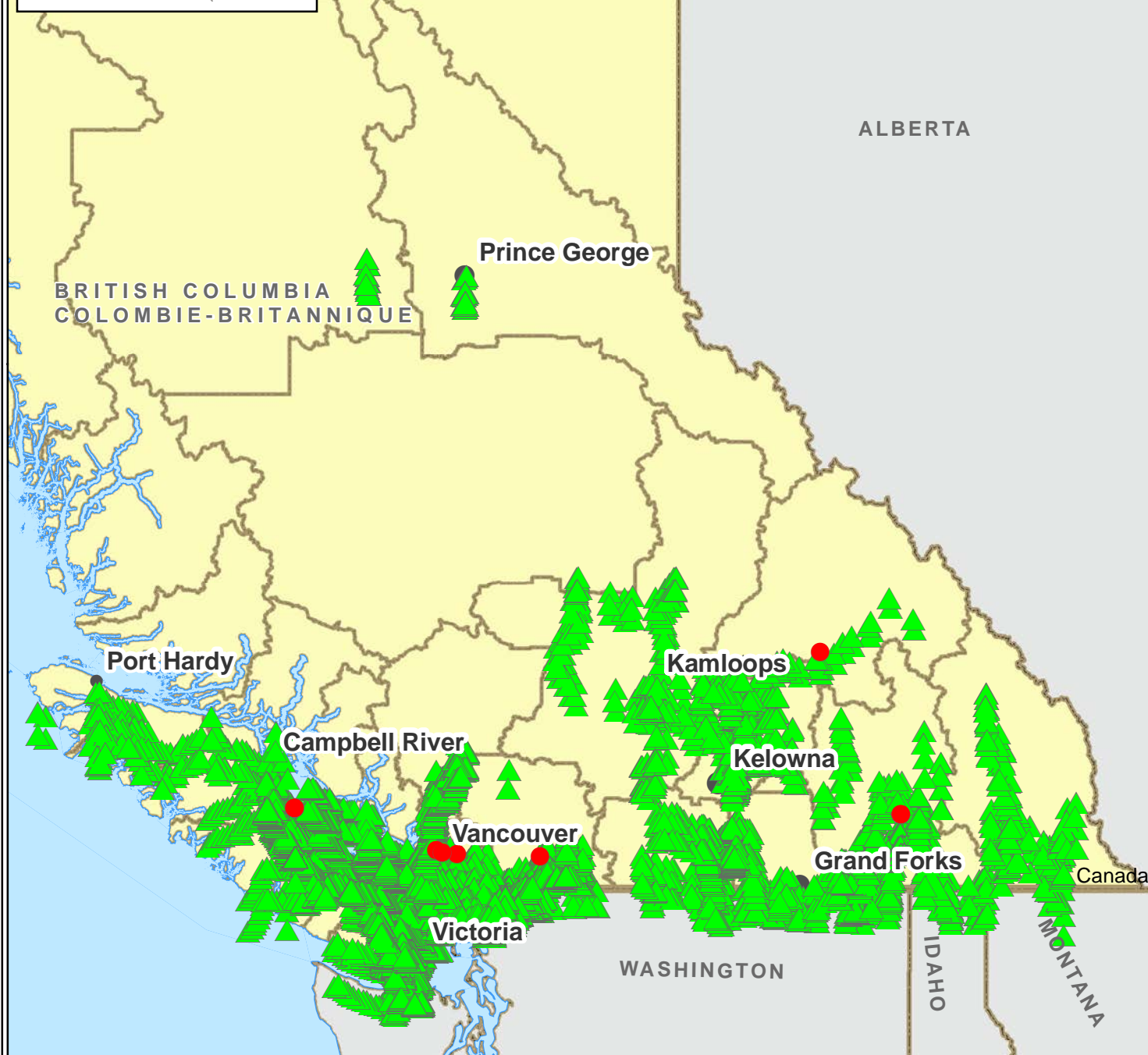
Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100
Km
0 50 100
Mi

Data Sources | Sources des données:
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European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne
British Columbia | 2010 | Colombie-Britannique



- Positive site | site positif
- ▲ Negative site | site négatif

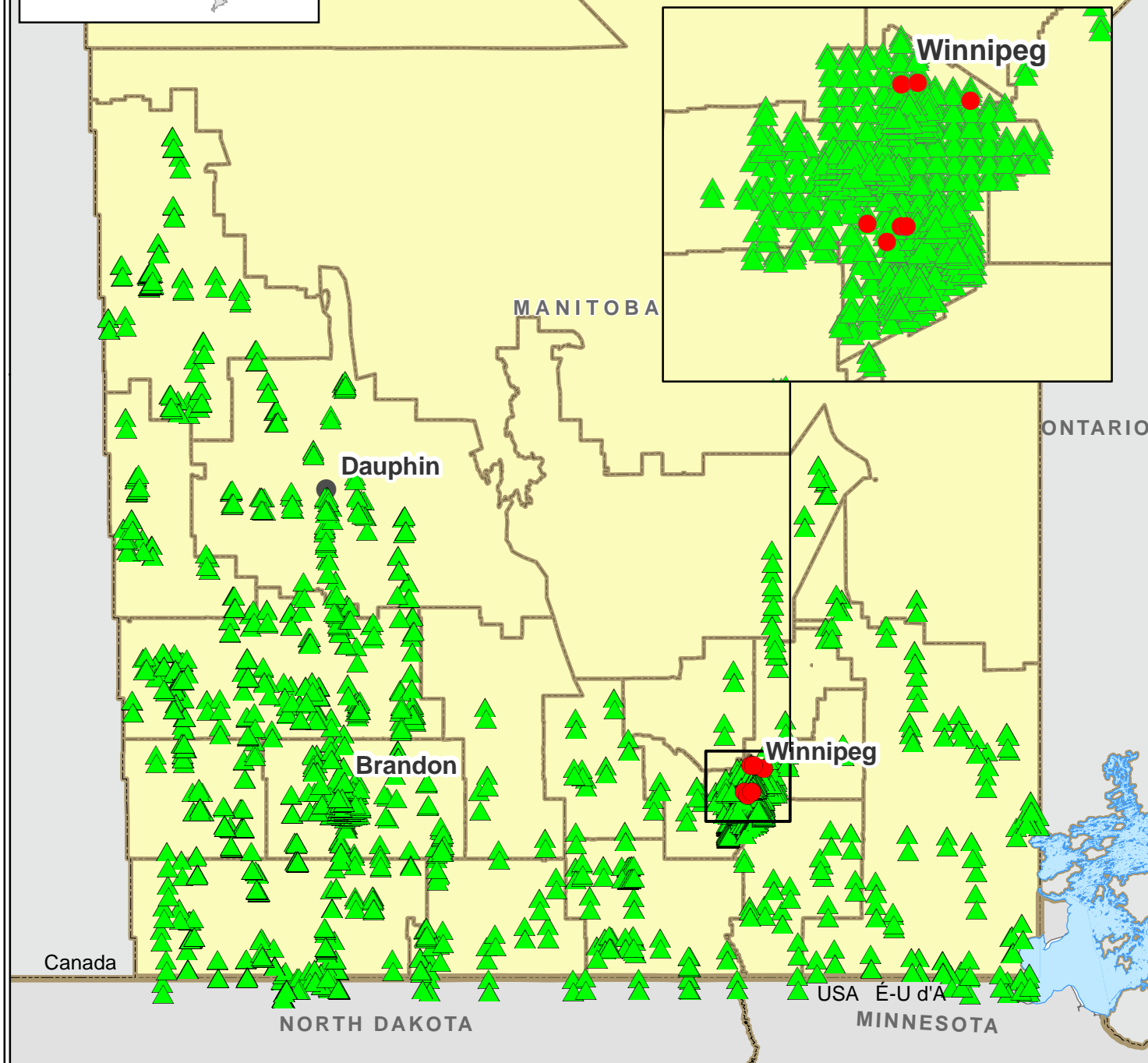
Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments.
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100
Km
0 50 100
Mi

Data Sources | Sources des données:
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European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne
Manitoba | 2010

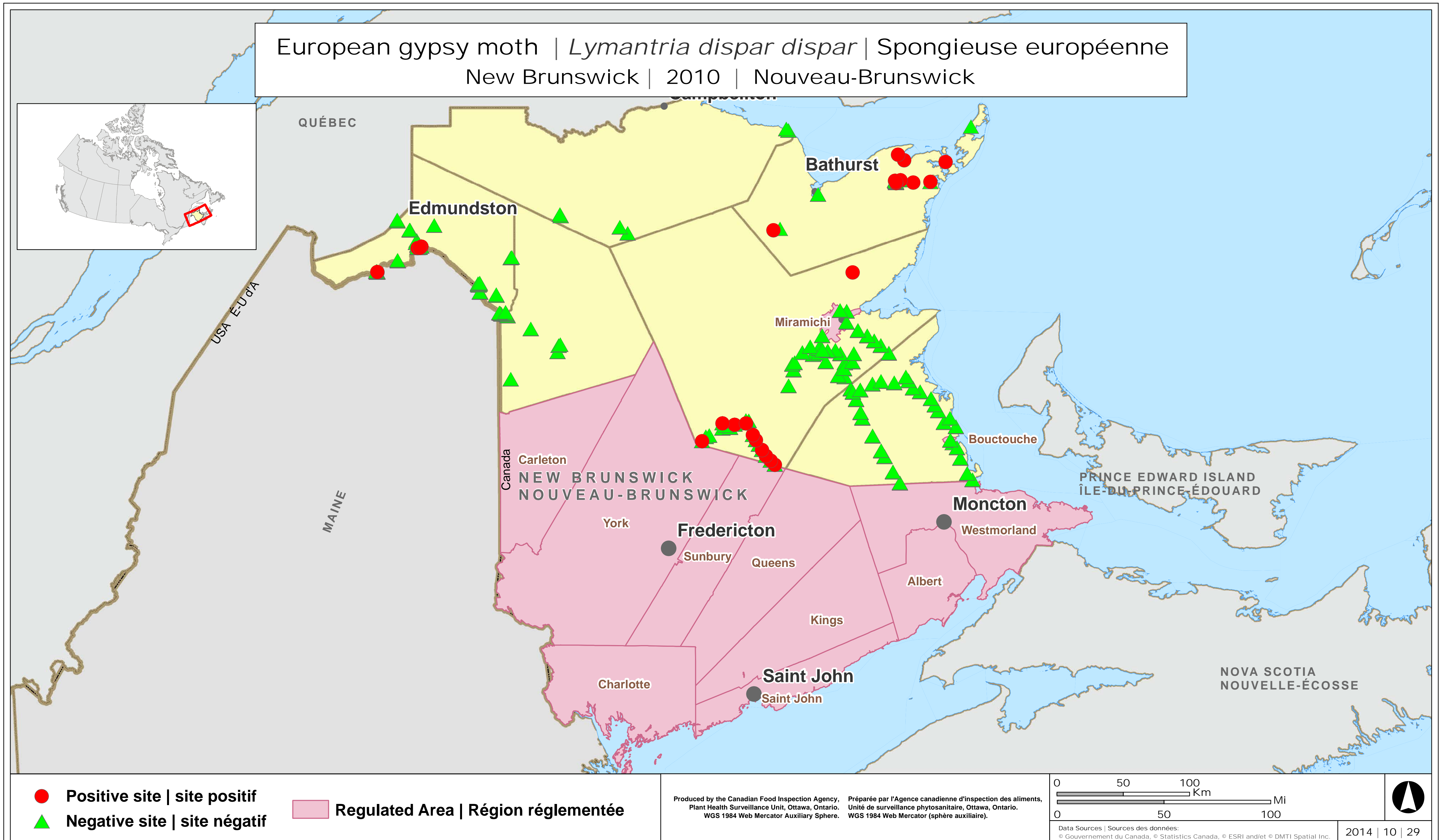


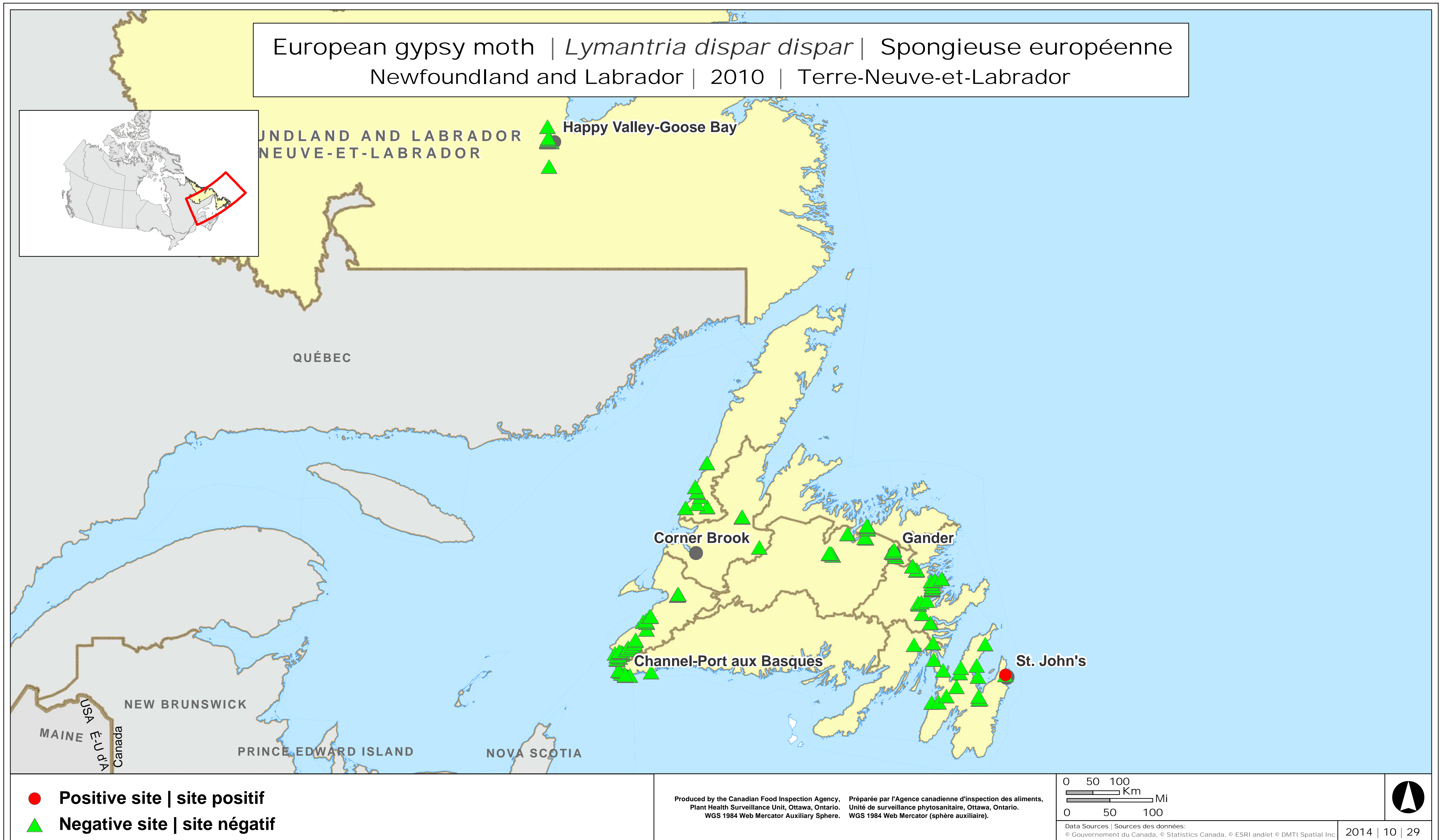
- Positive site | site positif
- ▲ Negative site | site négatif

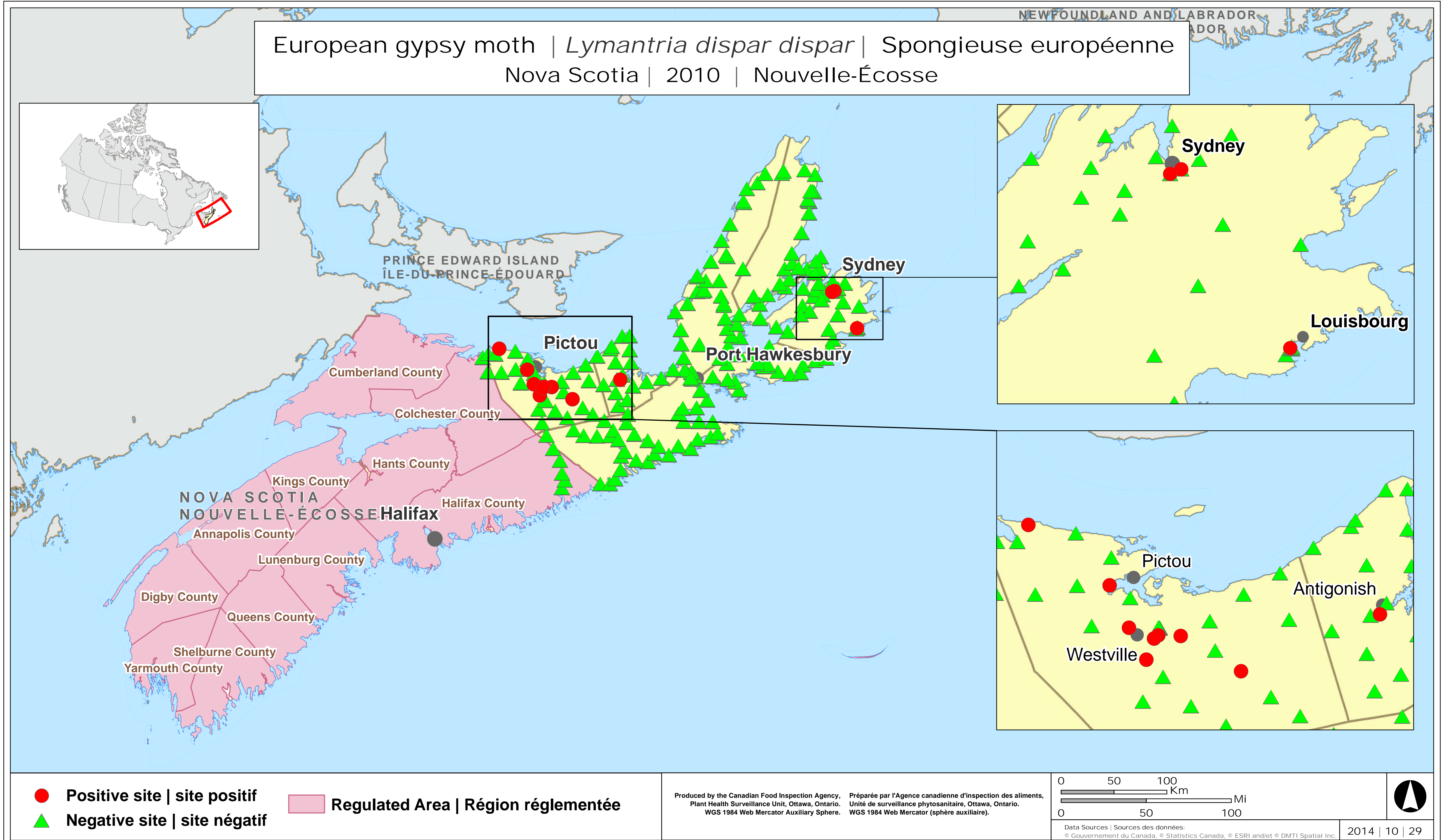
Produced by the Canadian Food Inspection Agency. Préparée par l'Agence canadienne d'inspection des aliments.
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100 Km
0 50 100 Mi
Data Sources | Sources des données:
© Gouvernement du Canada, © Statistics Canada,
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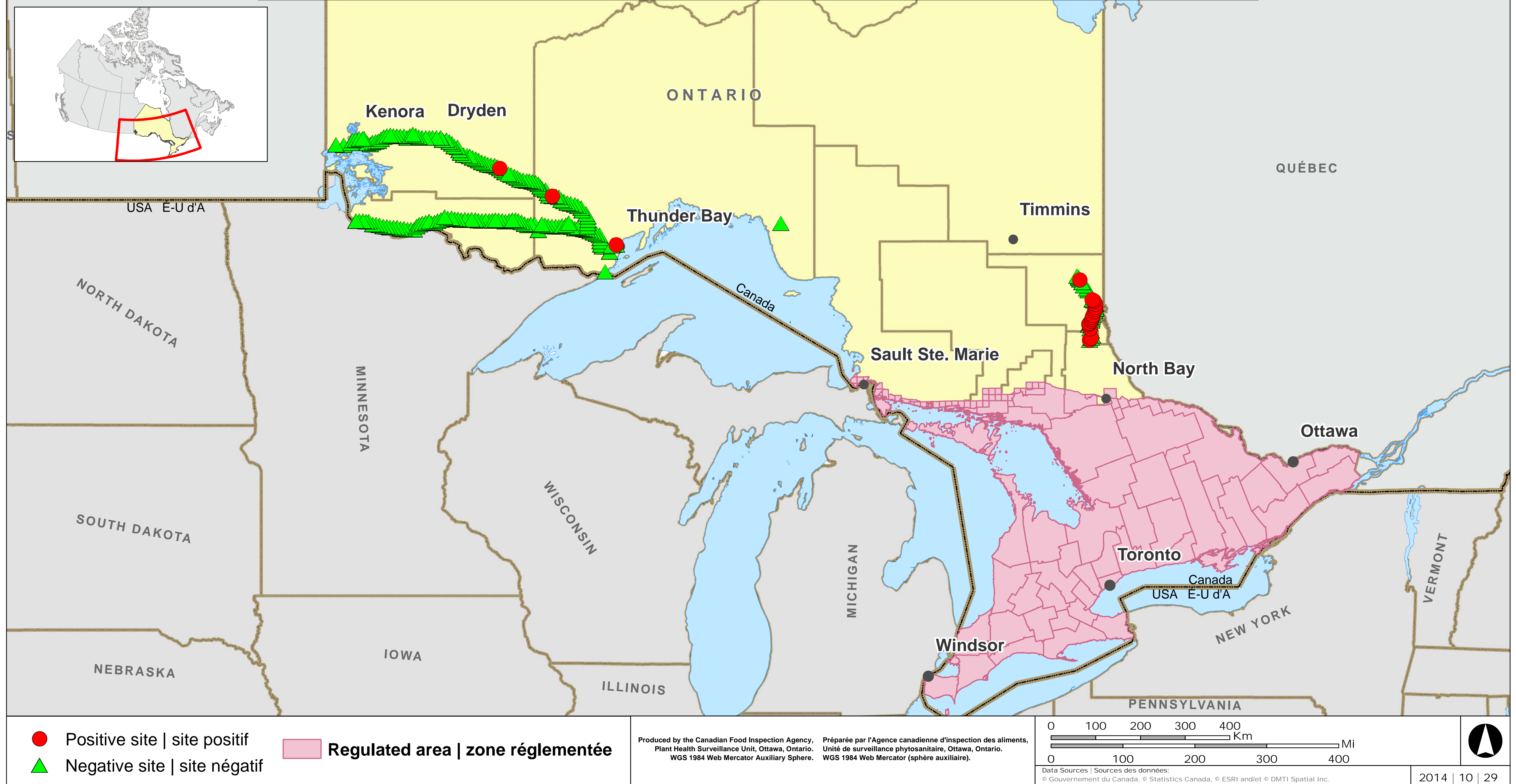






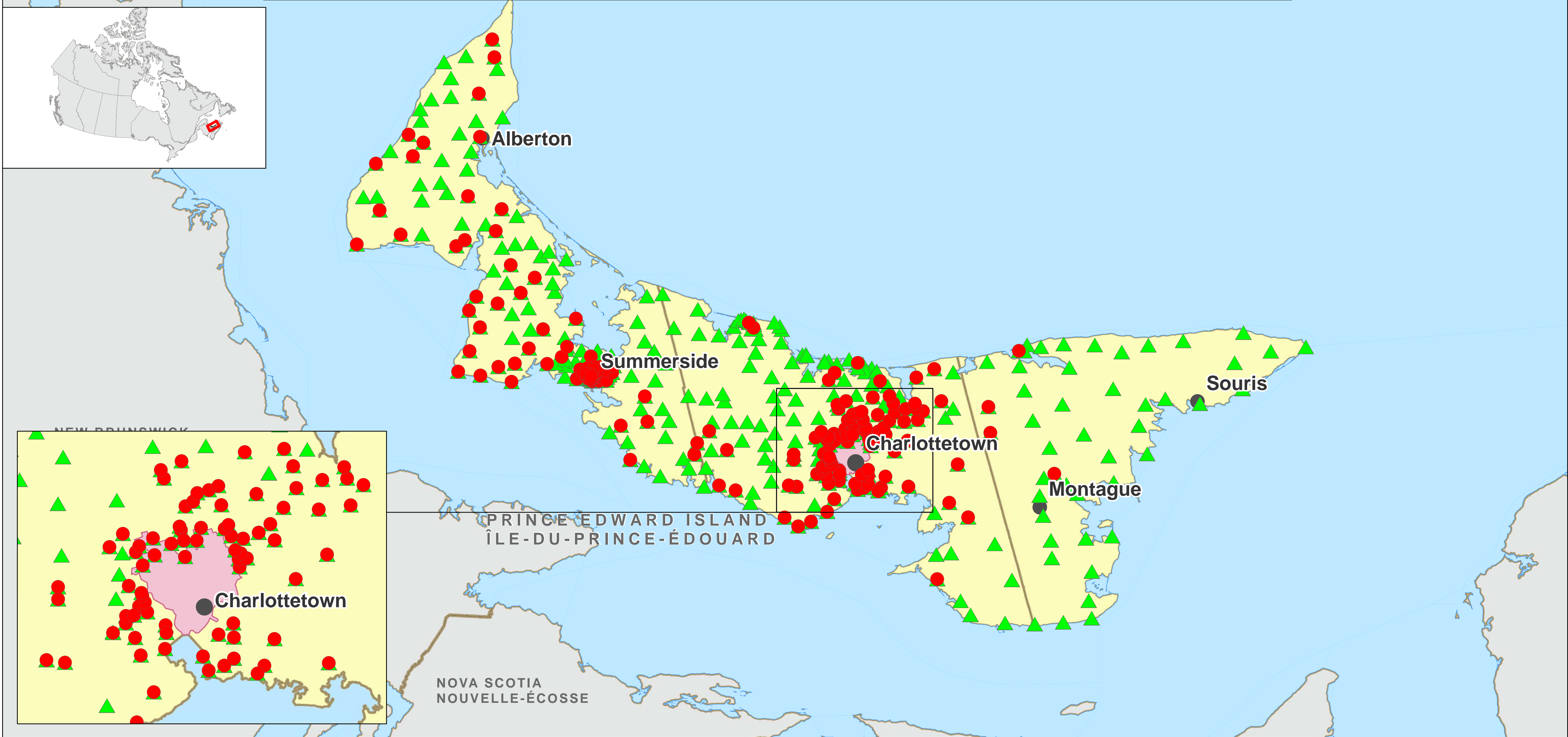


European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne
Ontario | 2010



European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne

Prince Edward Island | 2010 | Île-du-Prince-Édouard



- Positive site | site positif
- ▲

 Negative site | site négatif
- Regulated Area | Région réglementée

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.


Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

0 25 50
Km

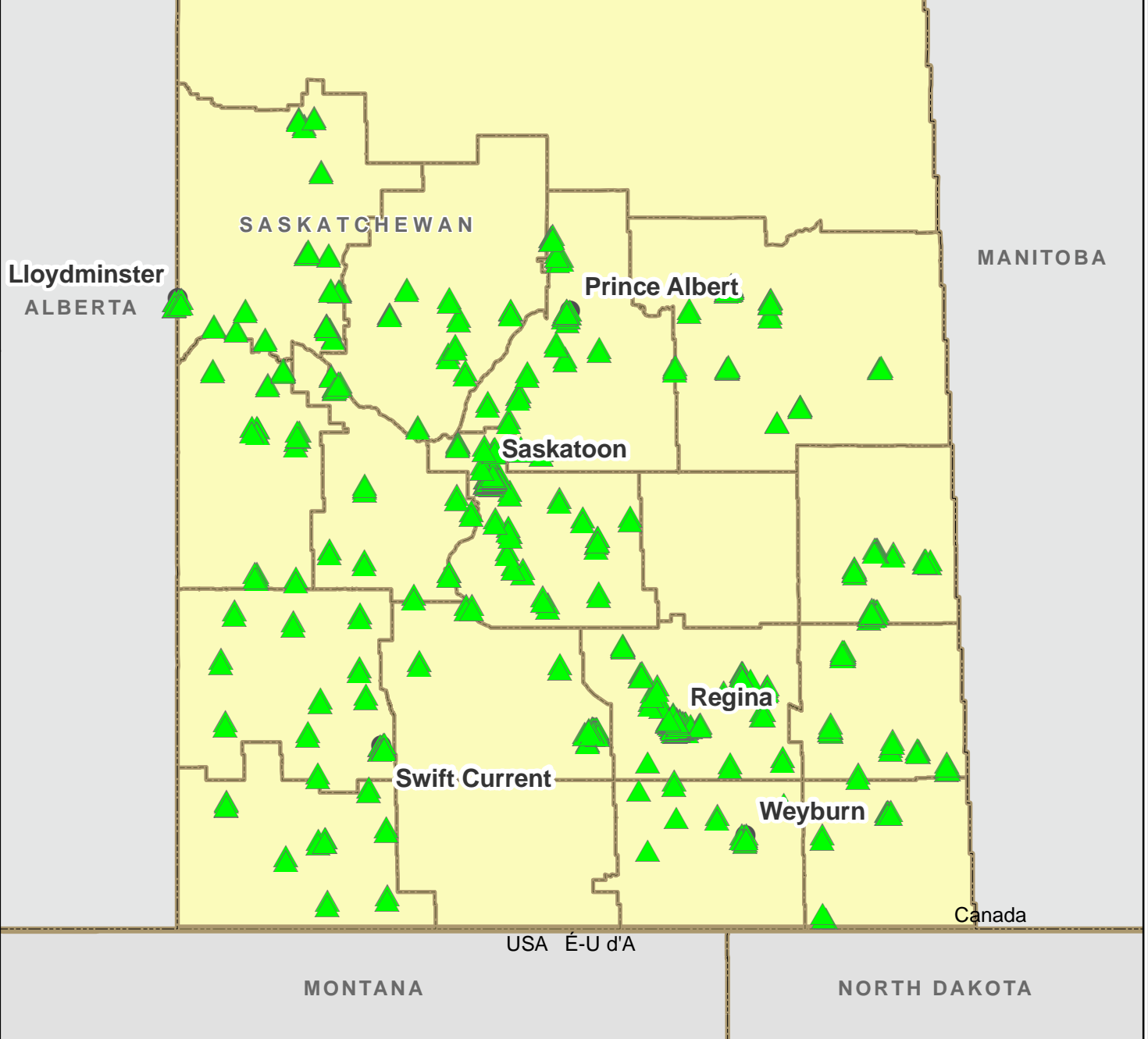
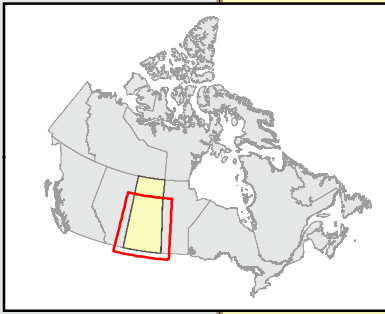
0 25 50
Mi

Data Sources | Sources des données:
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2014 | 10 | 29



European gypsy moth | *Lymantria dispar dispar* | Spongieuse européenne
Saskatchewan | 2010



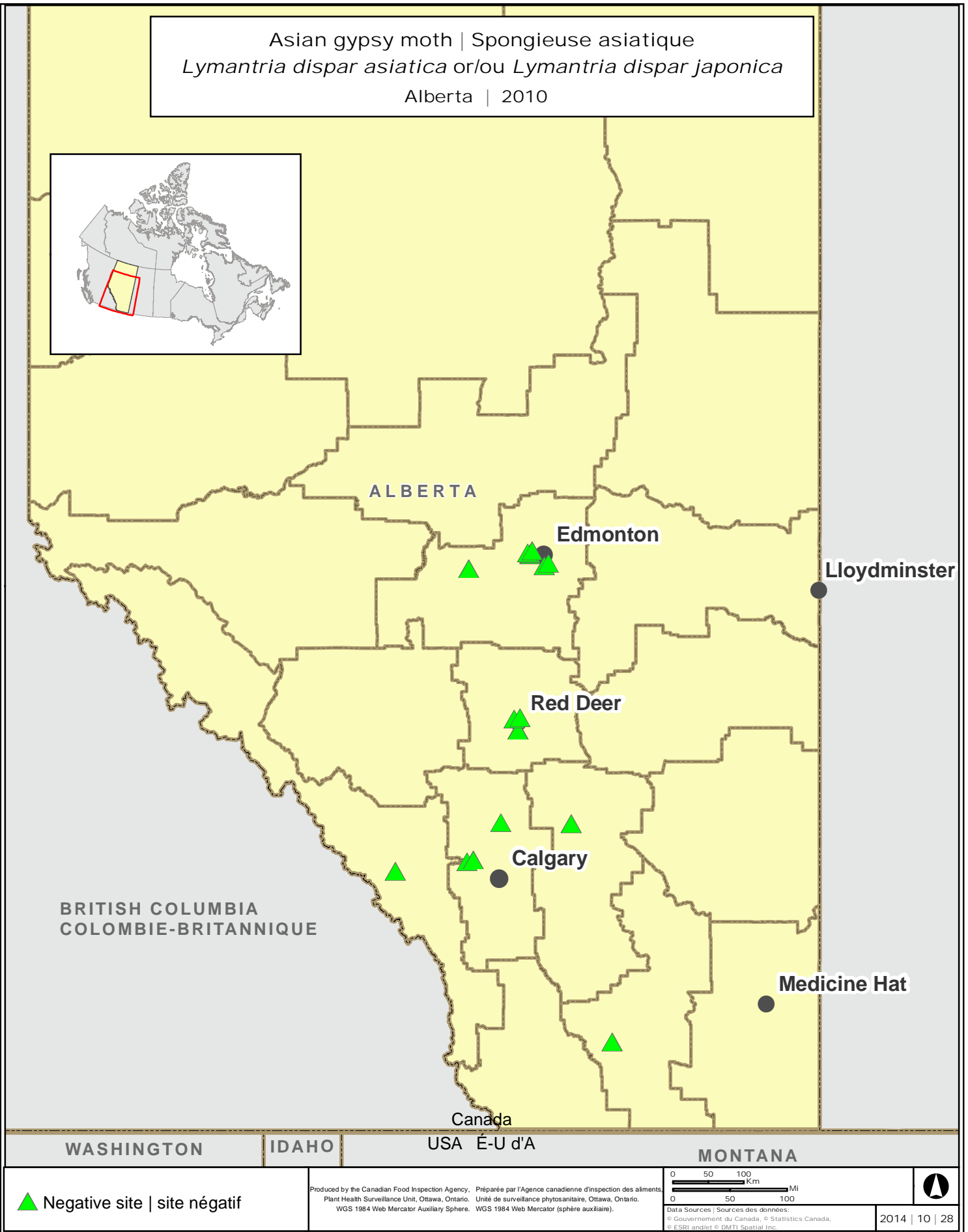
▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments.
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100
Km
0 50 100
Mi
Data Sources | Sources des données:
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Asian gypsy moth | Spongieuse asiatique
Lymantria dispar asiatica or/ou *Lymantria dispar japonica*
 Alberta | 2010



Asian gypsy moth | Spongieuse asiatique
Lymantria dispar asiatica orlou *Lymantria dispar japonica*
 British Columbia | 2010 | Colombie-Britannique



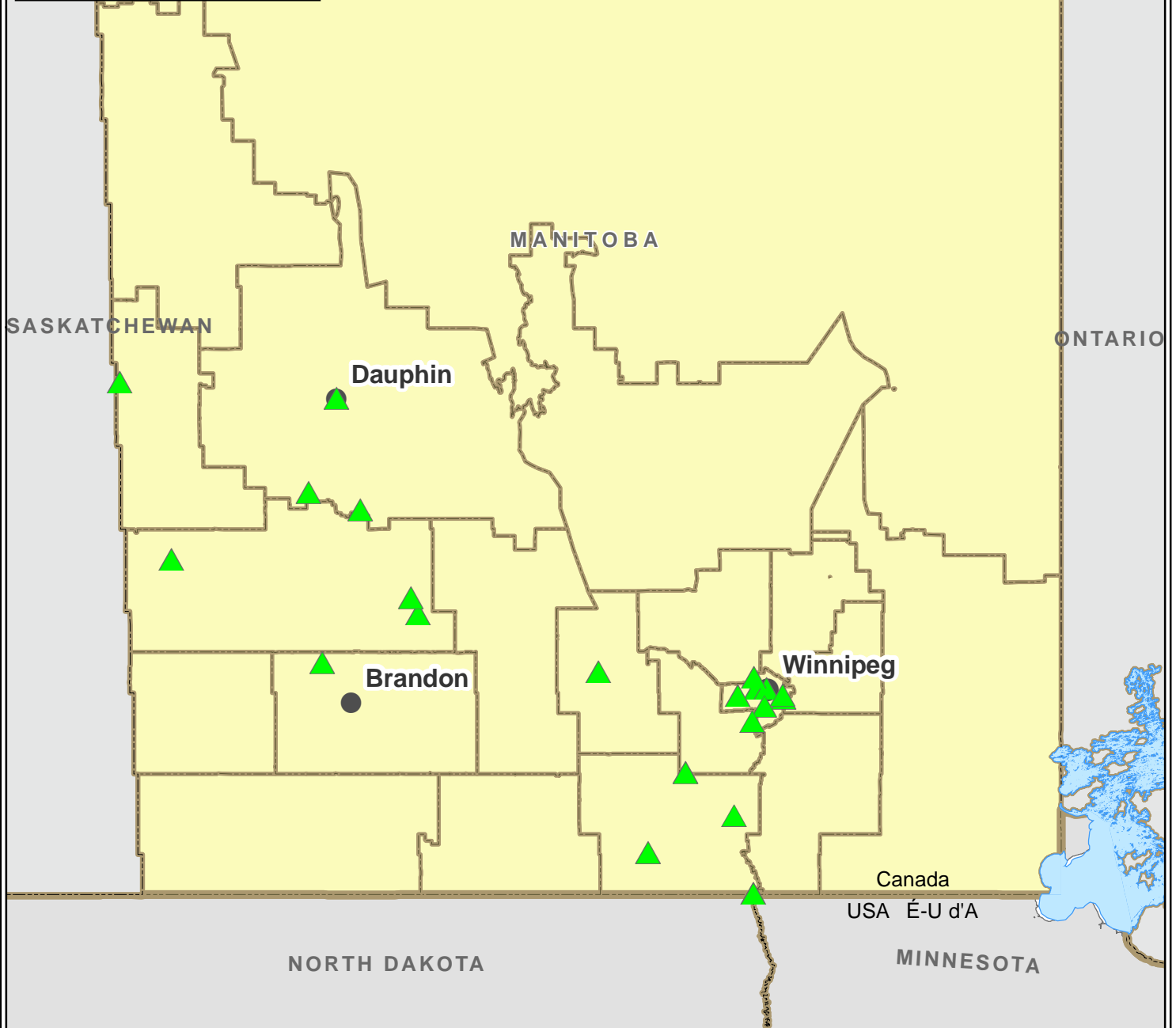
▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
 Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
 WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100
 Km
 0 50 100
 Mi
 Data Sources | Sources des données:
 © Gouvernement du Canada, © Statistics Canada,
 © ESRI and/or © DMTI Spatial Inc.

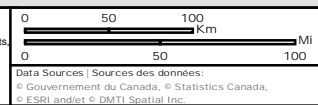


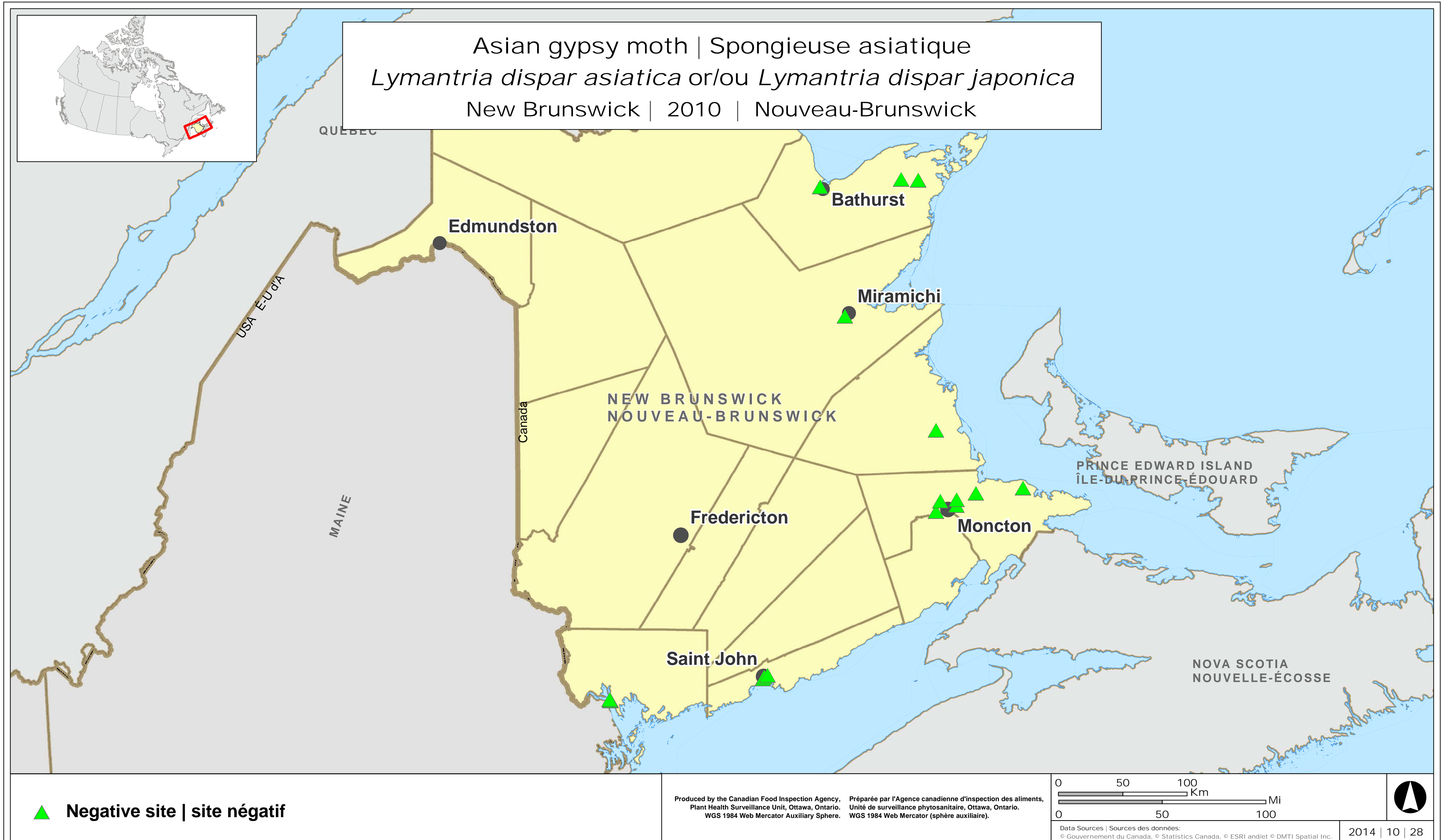
Asian gypsy moth | Spongieuse asiatique
Lymantria dispar asiatica orlou Lymantria dispar japonica
 Manitoba | 2010



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
 Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
 WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).





Asian gypsy moth | Spongieuse asiatique

Lymantria dispar asiatica or/ou *Lymantria dispar japonica*

Newfoundland and Labrador | 2010 | Terre-Neuve-et-Labrador



 Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).


050100
Km

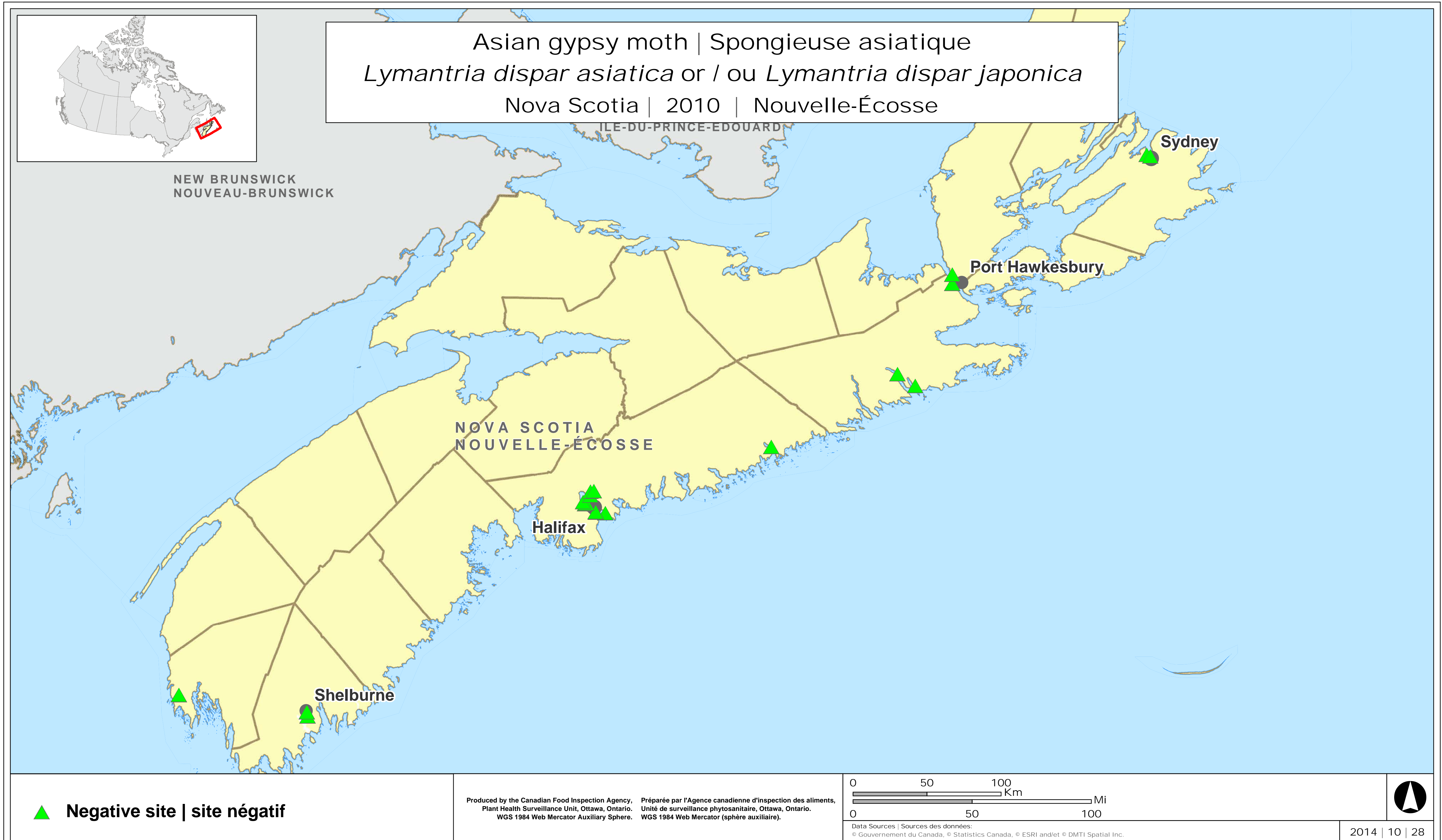
050100
Mi

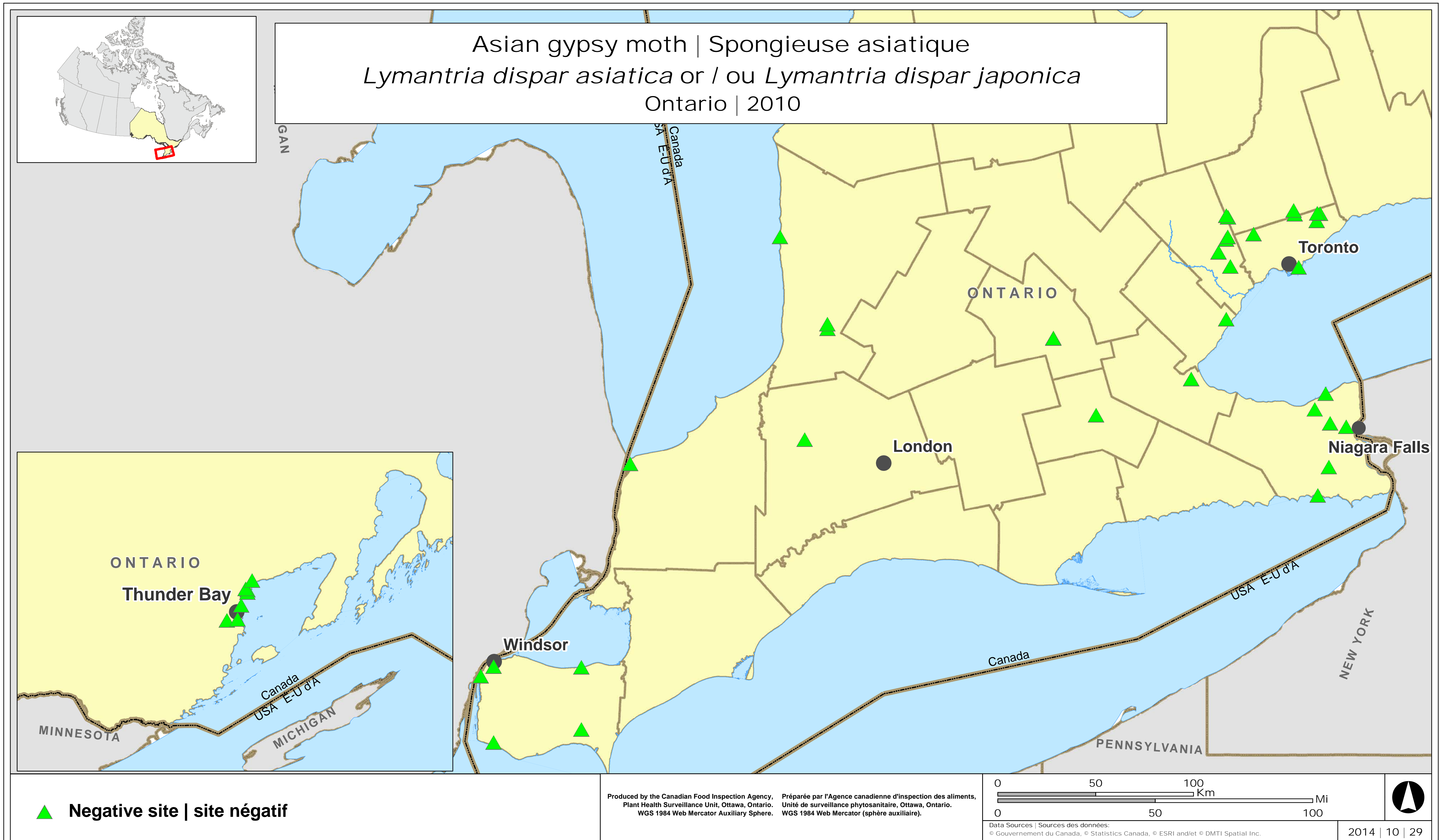
Data Sources | Sources des données:

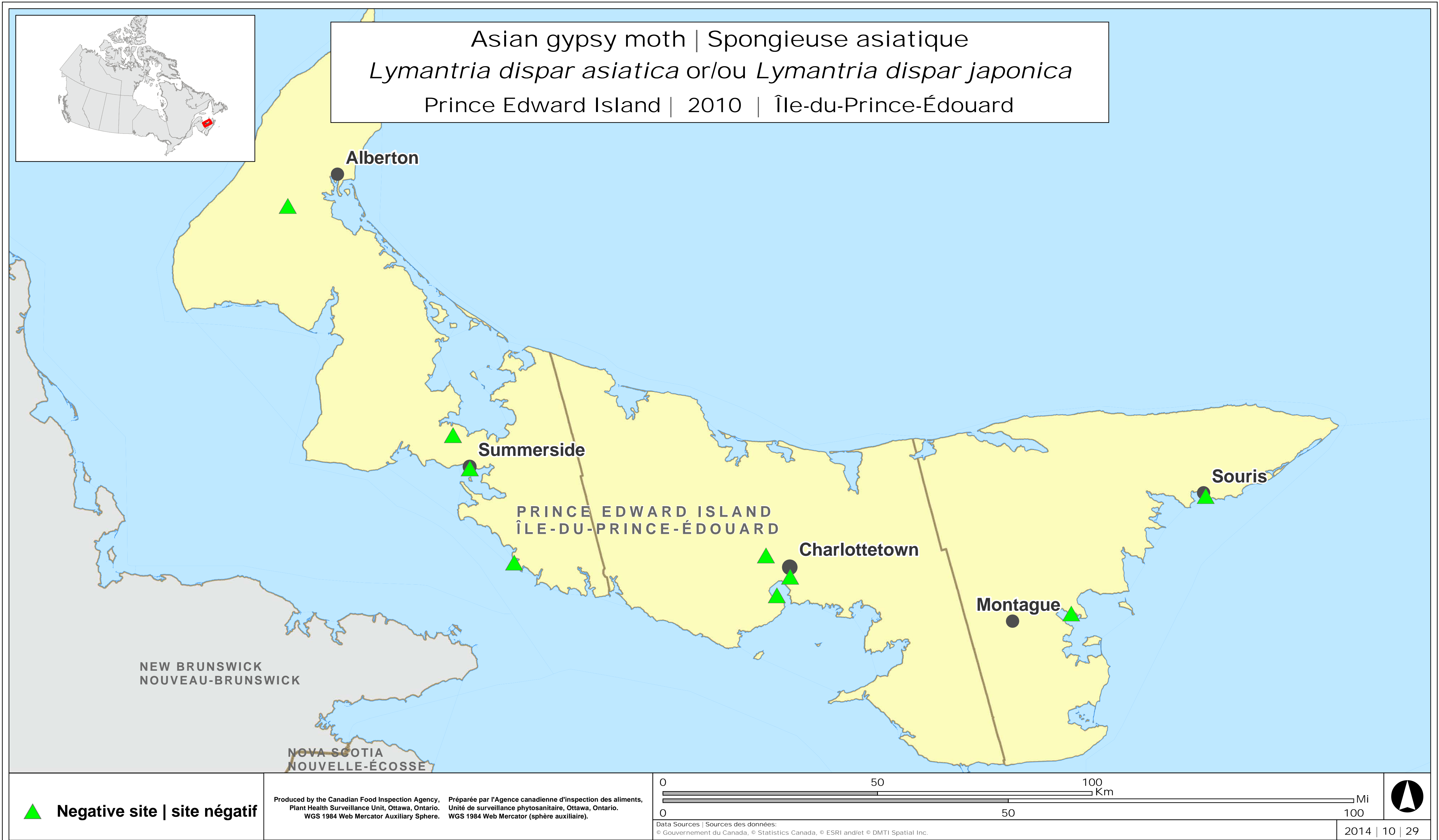
© Gouvernement du Canada, © Statistics Canada, © ESRI and/et © DMTI Spatial Inc.

2014 | 10 | 28







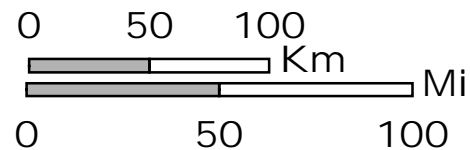


Asian gypsy moth | Spongieuse asiatique
Lymantria dispar asiatica or / ou *Lymantria dispar japonica*
Québec | 2010



▲ Negative site | site négatif

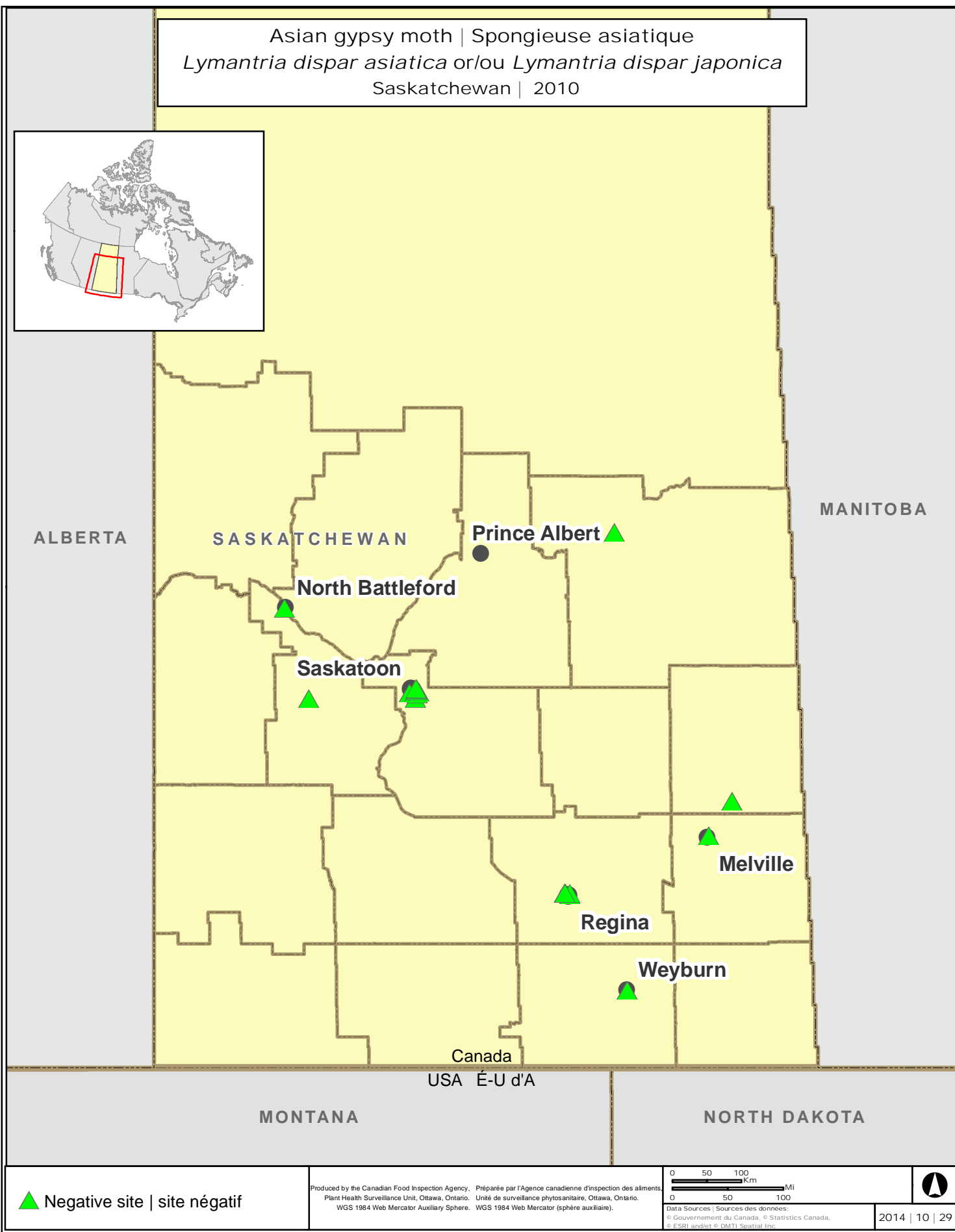
Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.



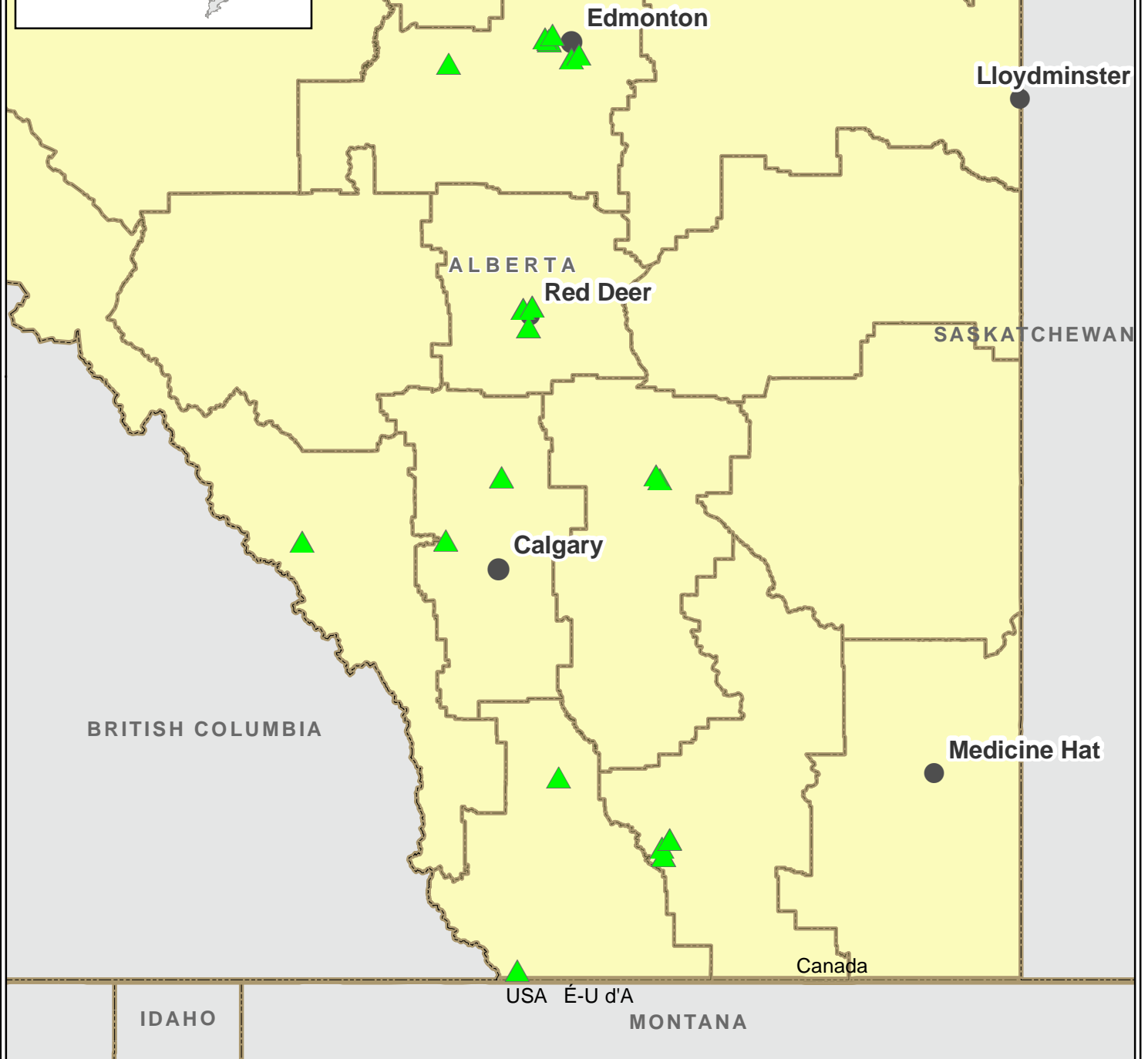
Data Sources | Sources des données: © Gouvernement du Canada, © Statistics Canada, © ESRI and/or © DMTI Spatial Inc.



Asian gypsy moth | Spongieuse asiatique
Lymantria dispar asiatica orlou Lymantria dispar japonica
 Saskatchewan | 2010



Pink gypsy moth | *Lymantria mathura* | Spongieuse rose
Alberta | 2010



▲ Negative site | site négatif

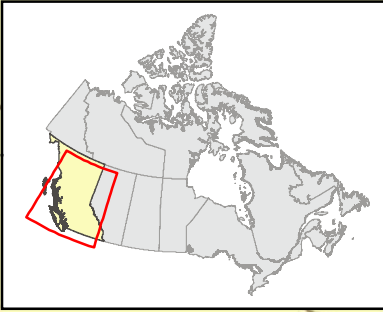
Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100 Km
0 50 100 Mi
Data Sources | Sources des données:
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2014 | 10 | 29

Pink gypsy moth | *Lymantria mathura* | Spongieuse rose
British Columbia | 2010 | Colombie-Britannique



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

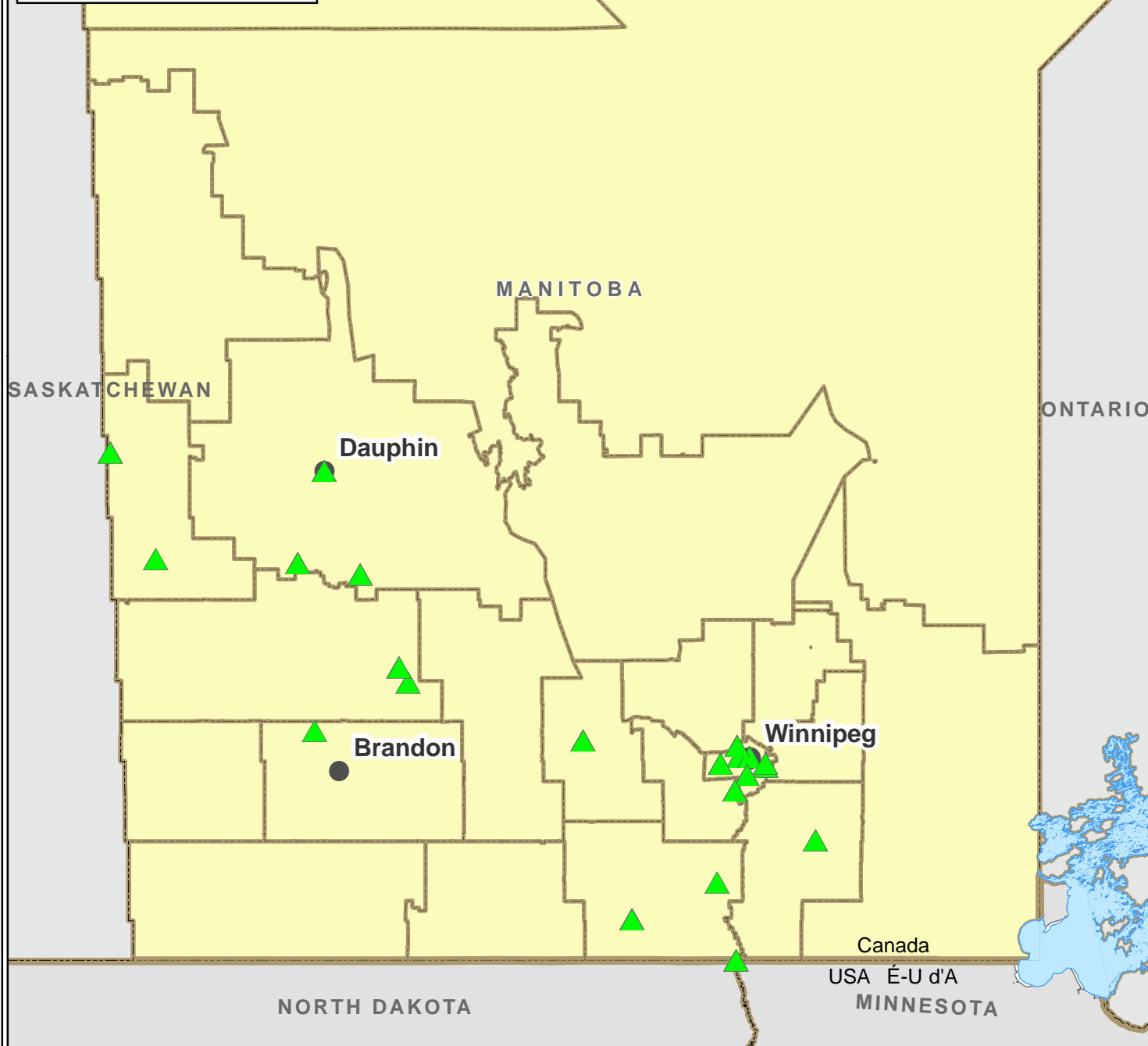
0 50 100
Km
0 50 100
Mi

Data Sources | Sources des données:
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2014 | 10 | 29

Pink gypsy moth | *Lymantria mathura* | Spongieuse rose
Manitoba | 2010



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments.
Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

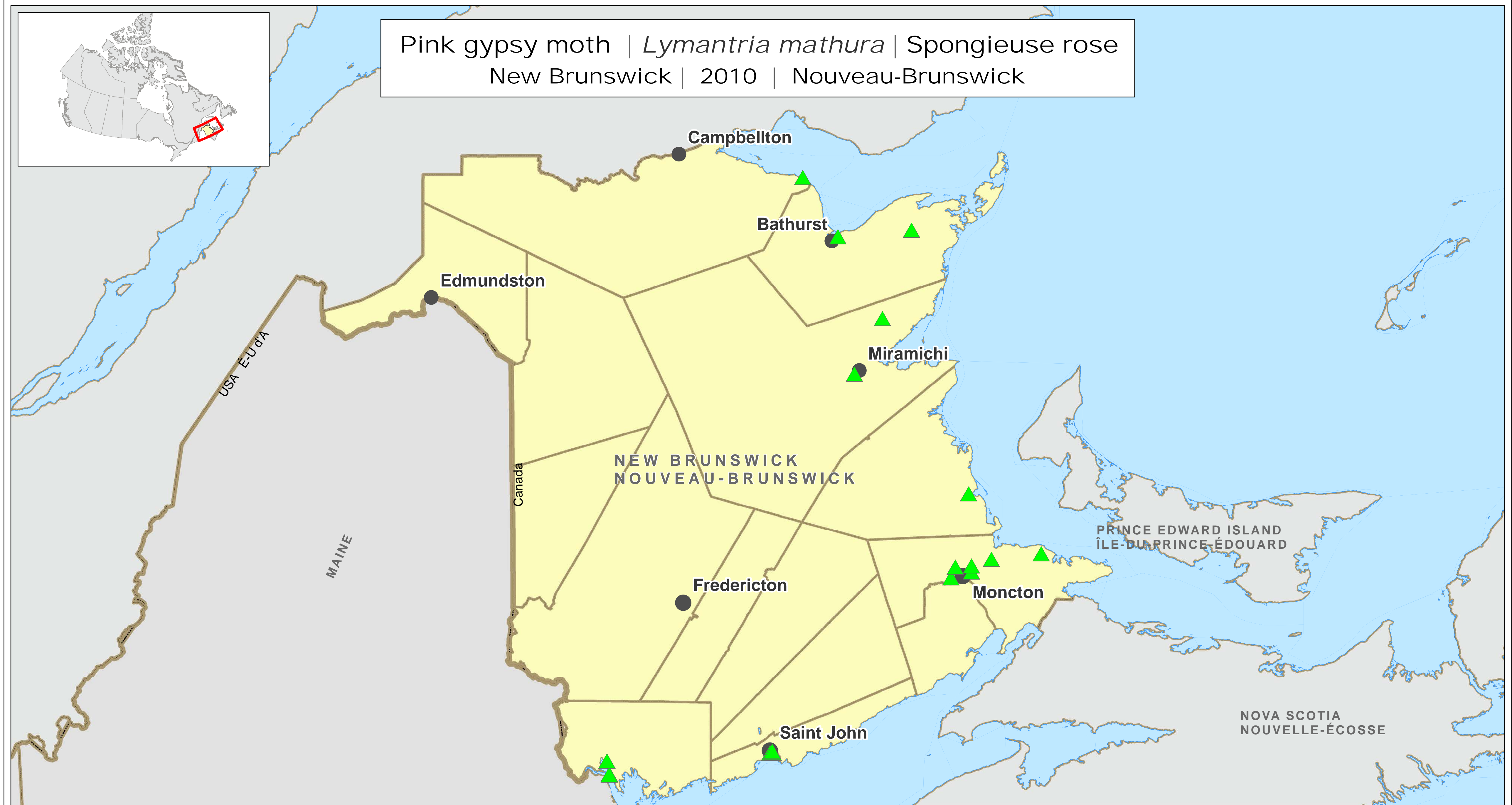
0 50 100 Km
0 50 100 Mi
Data Sources | Sources des données:
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2014 | 10 | 29



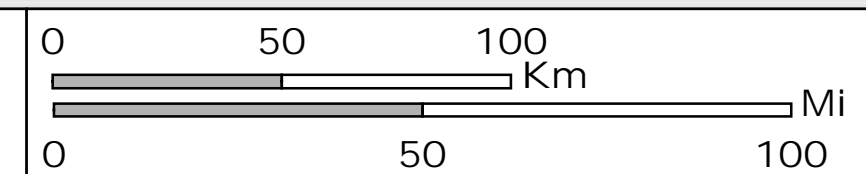
Pink gypsy moth | *Lymantria mathura* | Spongieuse rose
New Brunswick | 2010 | Nouveau-Brunswick



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

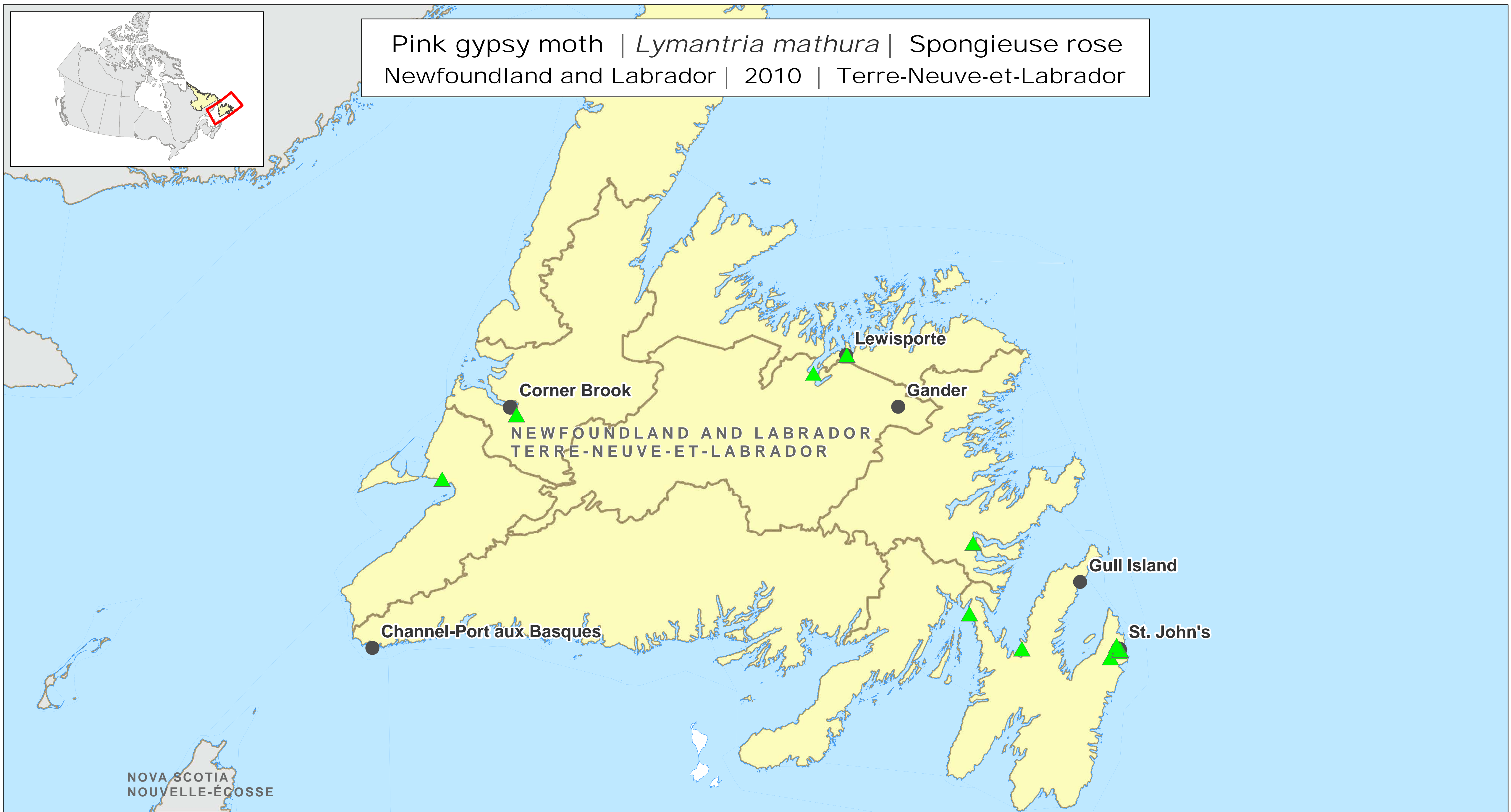
Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).



Data Sources | Sources des données:
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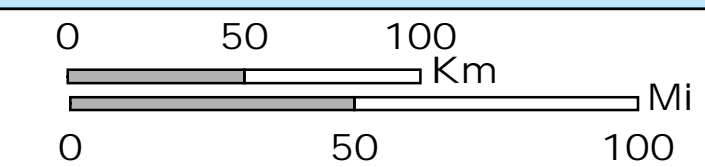




▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

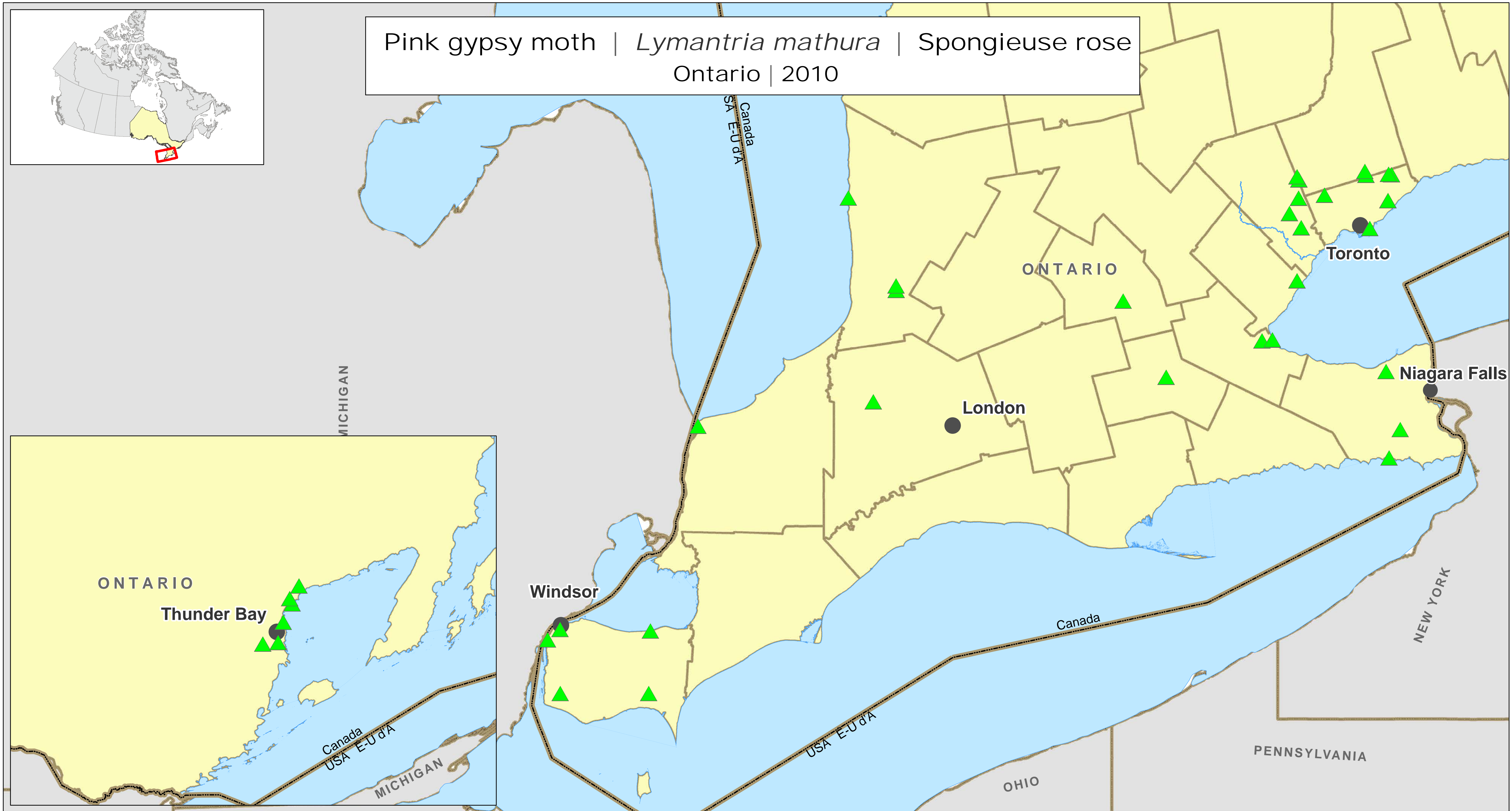


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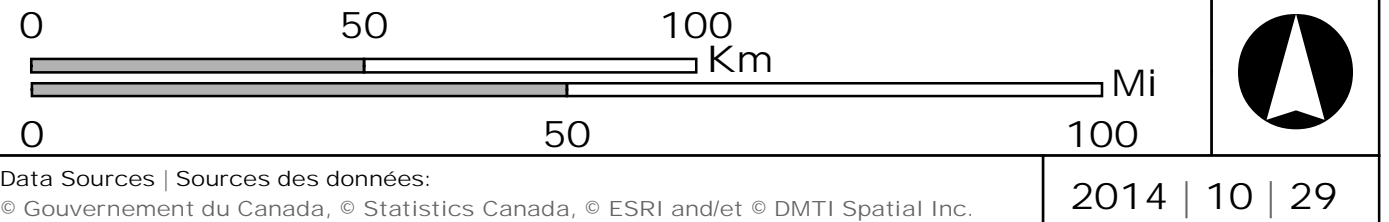


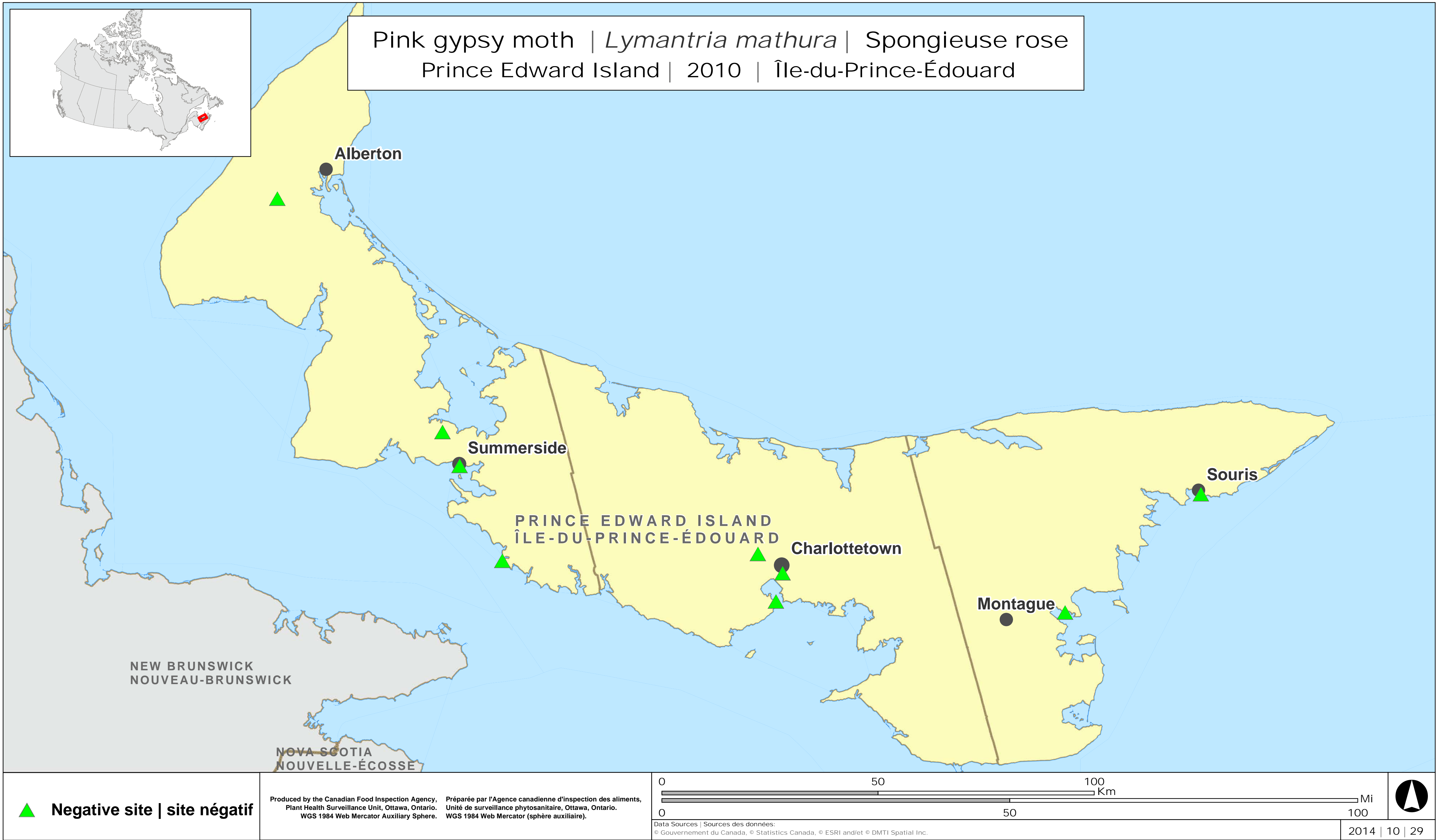


▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

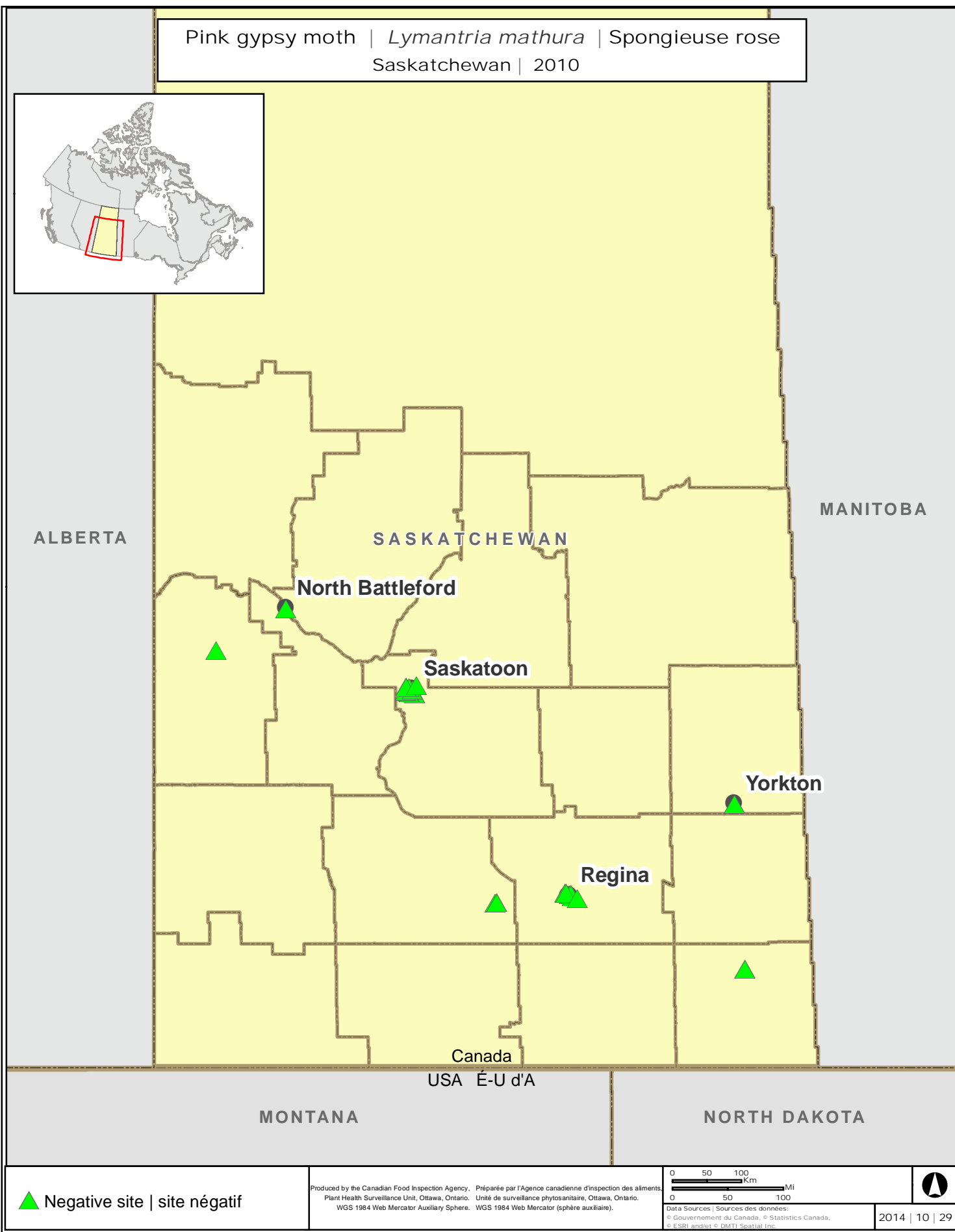
Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).



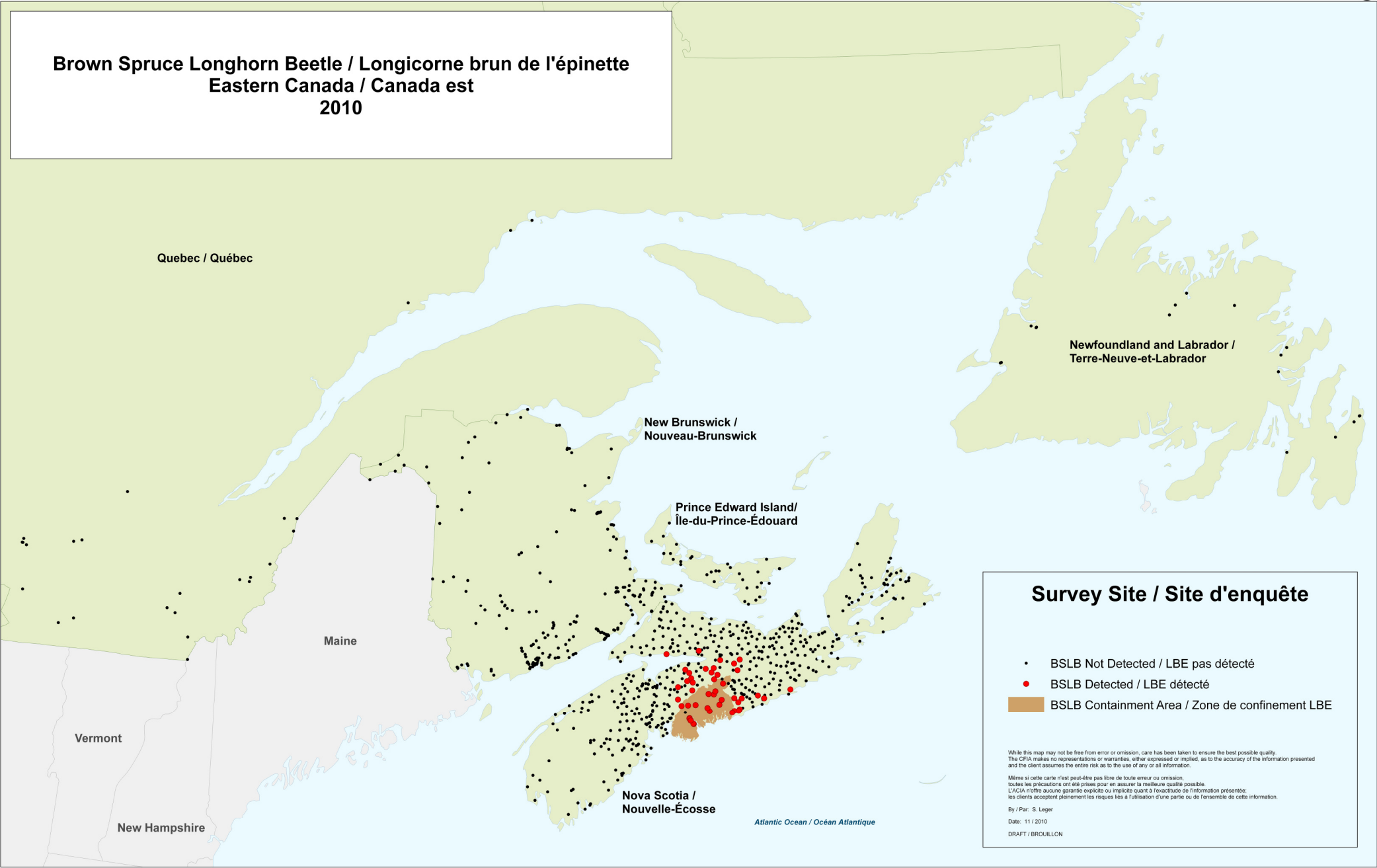




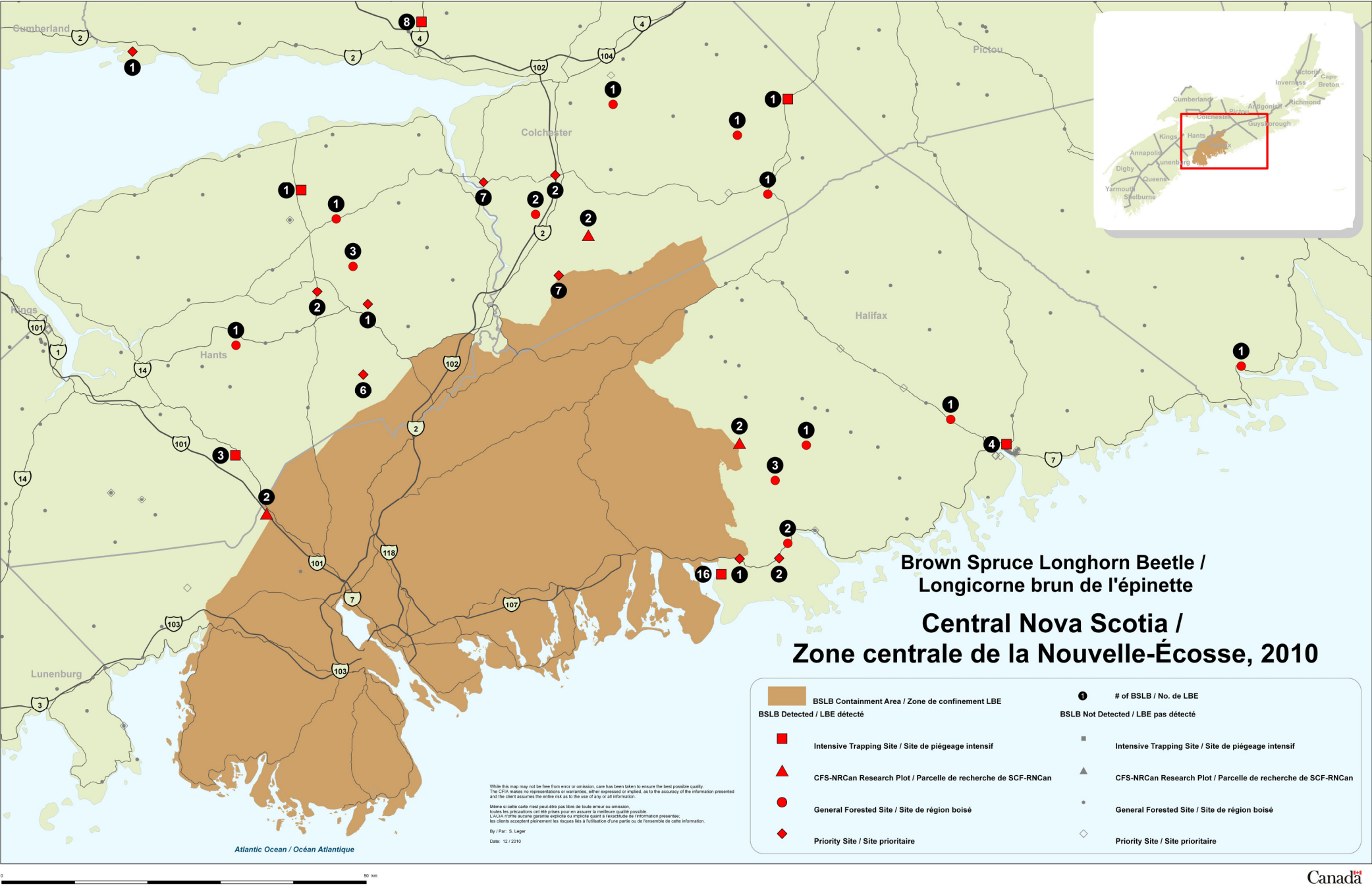
Pink gypsy moth | *Lymantria mathura* | Spongieuse rose
Saskatchewan | 2010



Brown Spruce Longhorn Beetle / Longicorne brun de l'épinette
Eastern Canada / Canada est
2010



0 500 km



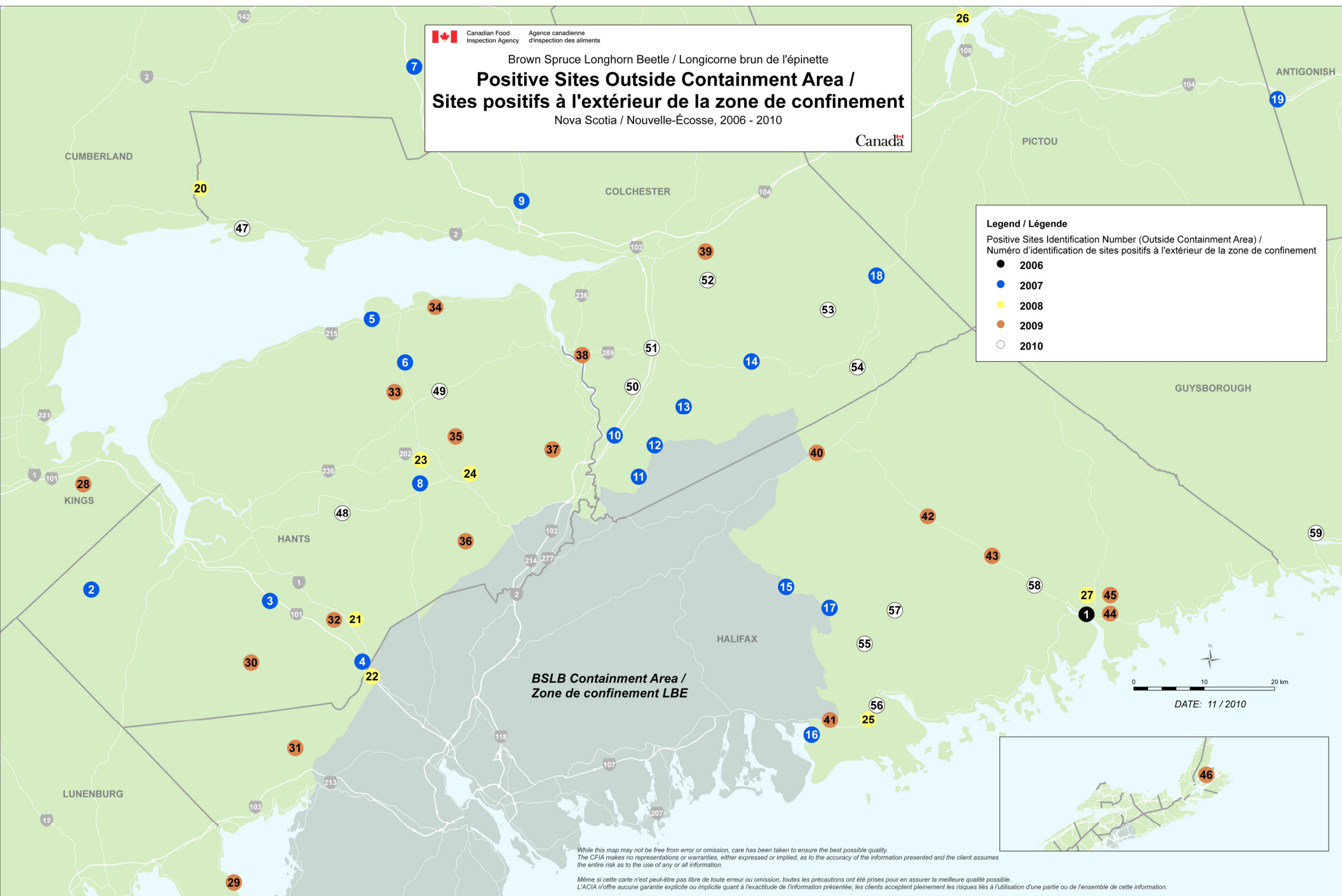
Brown Spruce Longhorn Beetle / Longicorne brun de l'épinette
Positive Sites Outside Containment Area /
Sites positifs à l'extérieur de la zone de confinement
Nova Scotia / Nouvelle-Écosse, 2006 - 2010



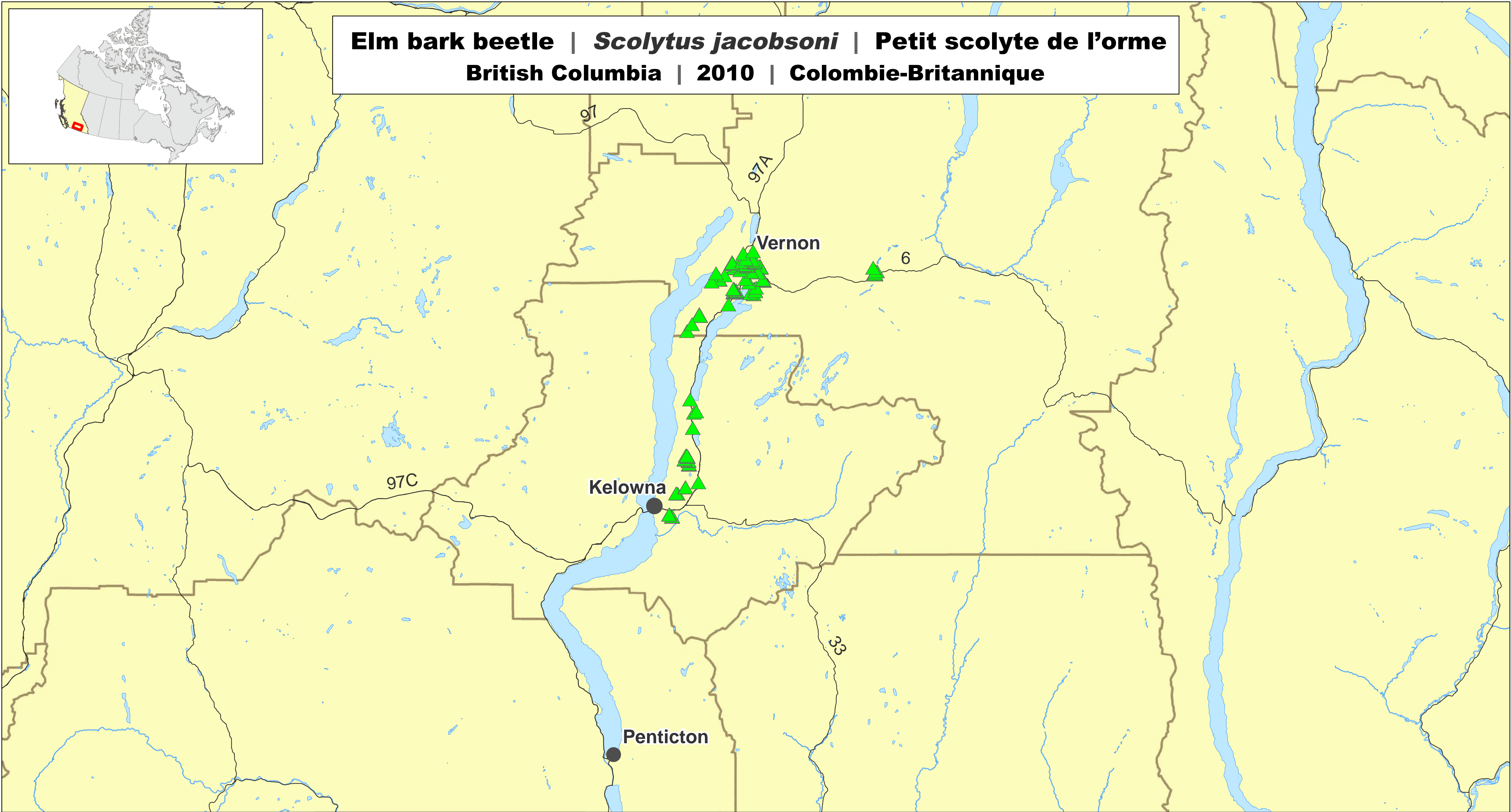
Legend / Légende

Positive Sites Identification Number (Outside Containment Area) /
Numéro d'identification de sites positifs à l'extérieur de la zone de confinement

- 2006
- 2007
- 2008
- 2009
- 2010



Elm bark beetle | *Scolytus jacobsoni* | Petit scolyte de l'orme
British Columbia | 2010 | Colombie-Britannique



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.

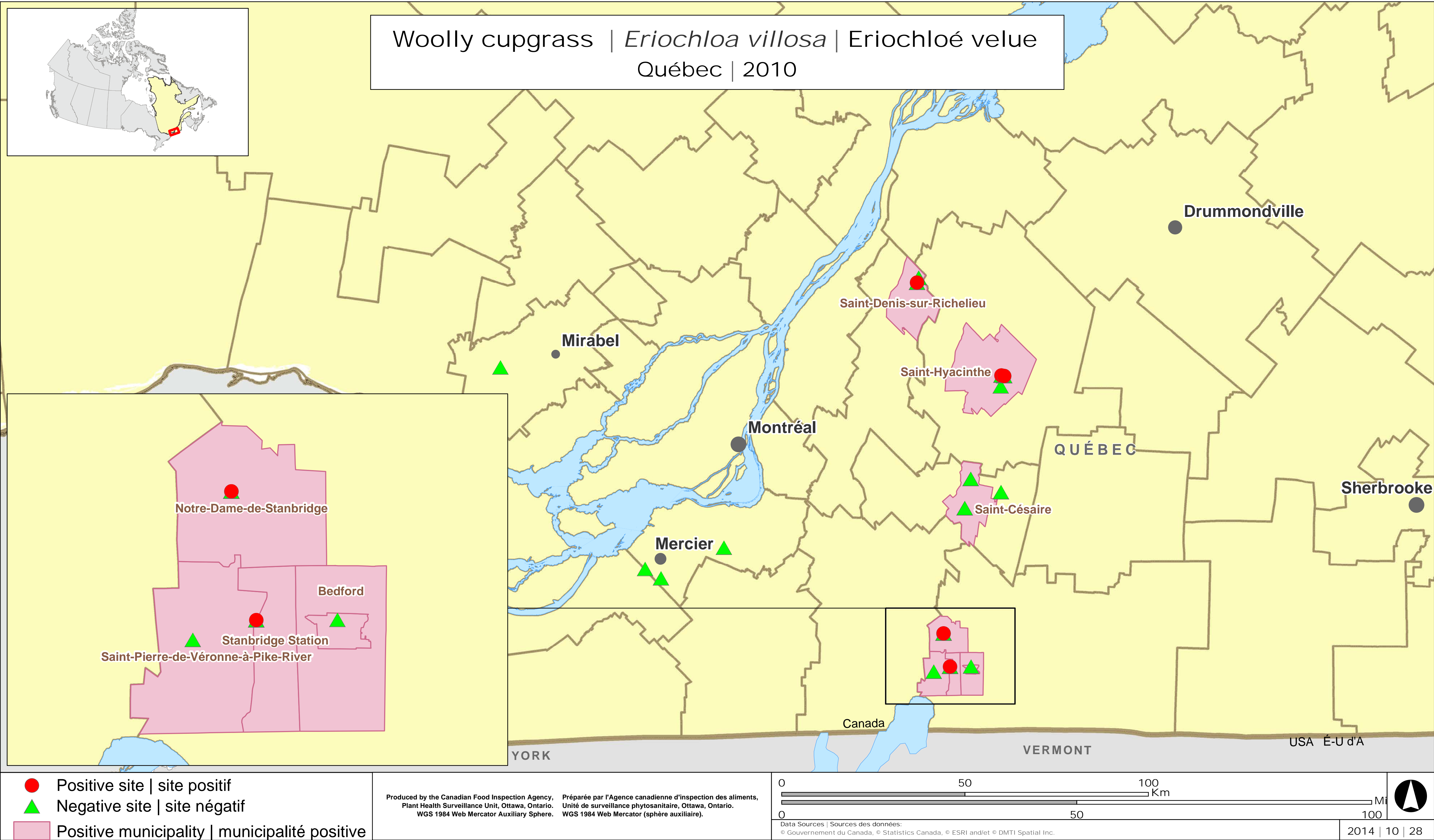
050100Km

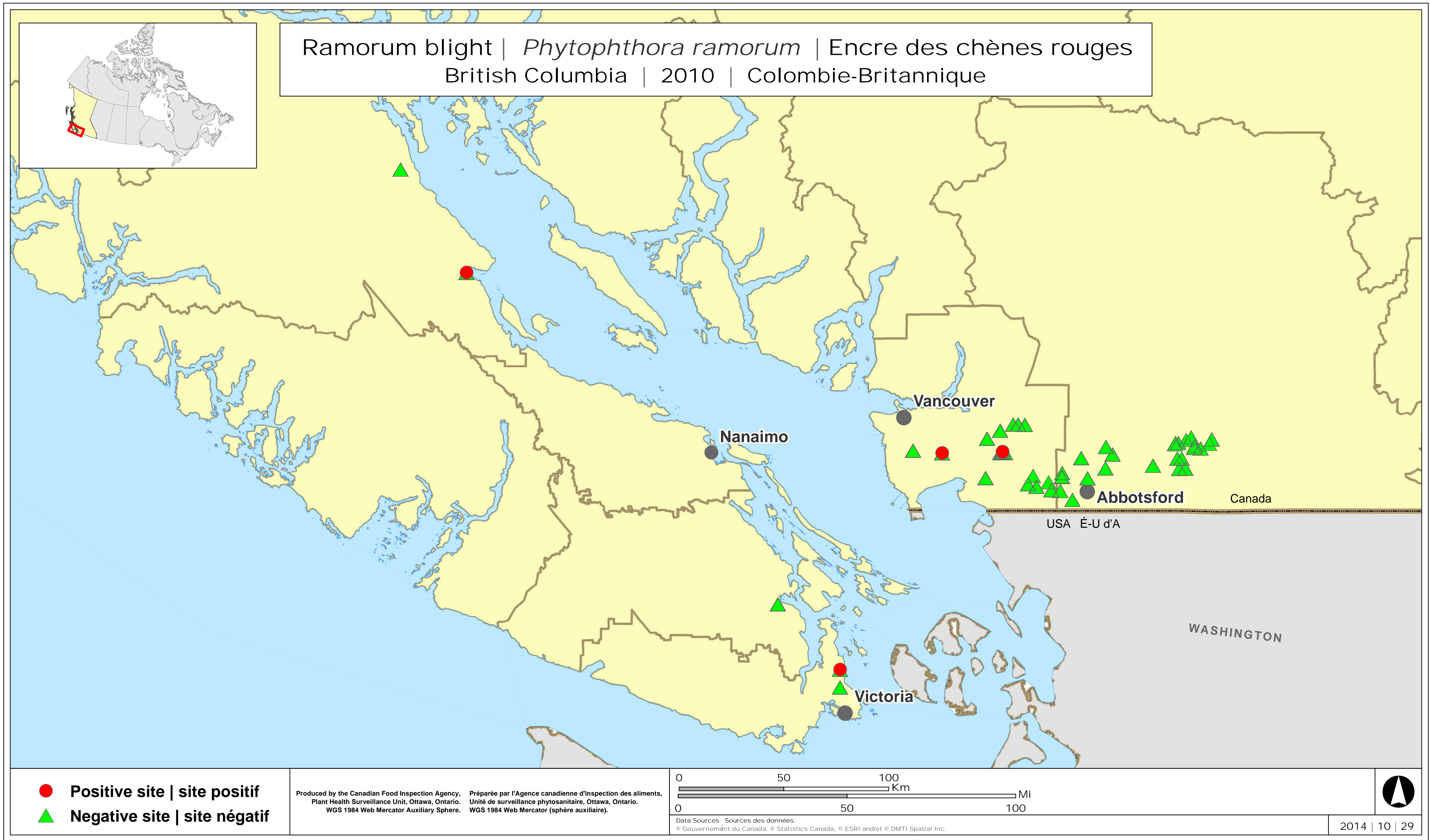
050100Mi

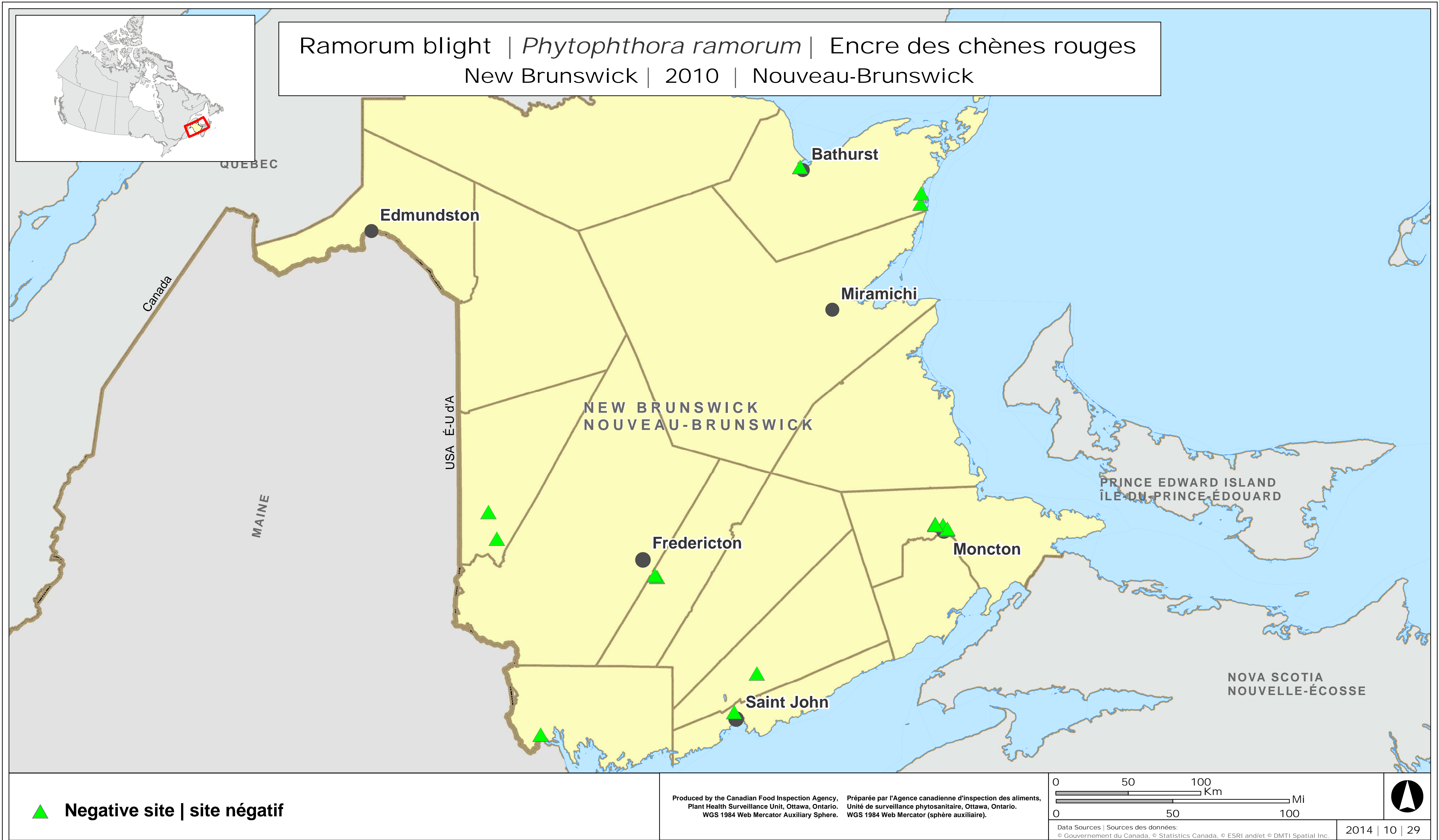
Data Sources | Sources des données:

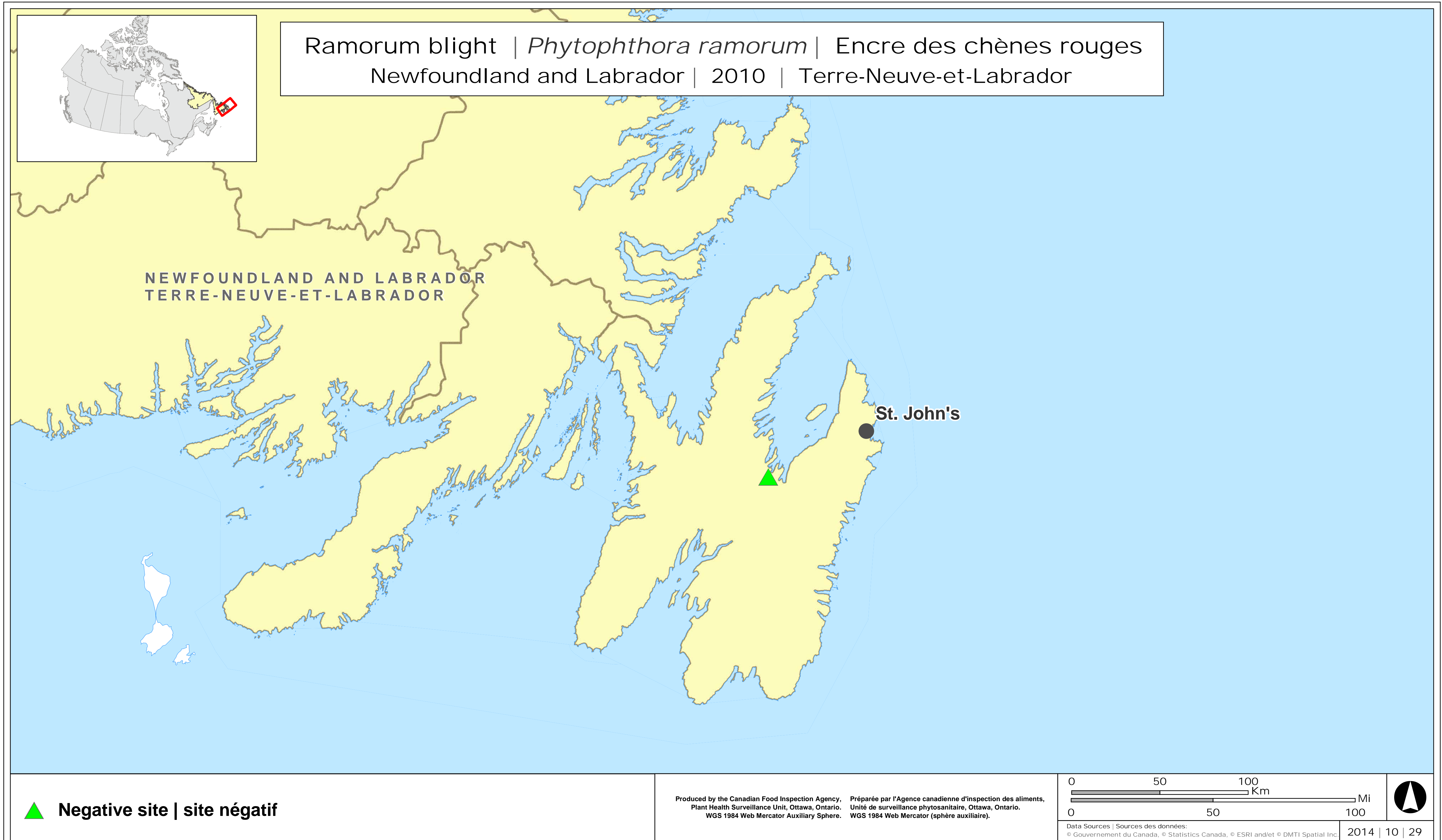
© Gouvernement du Canada, © Statistics Canada, © ESRI and/et © DMTI Spatial Inc.

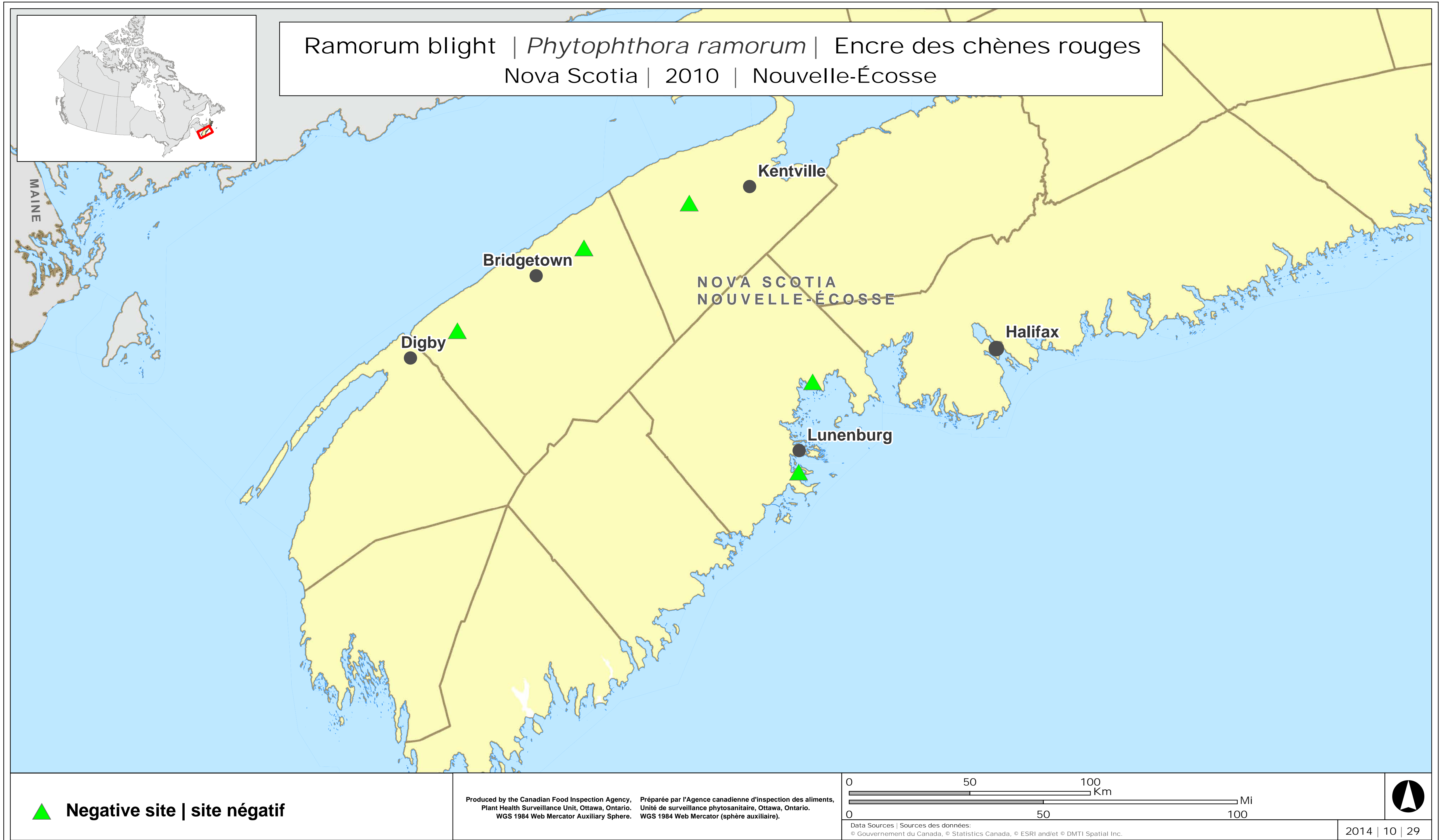
2014 | 10 | 29



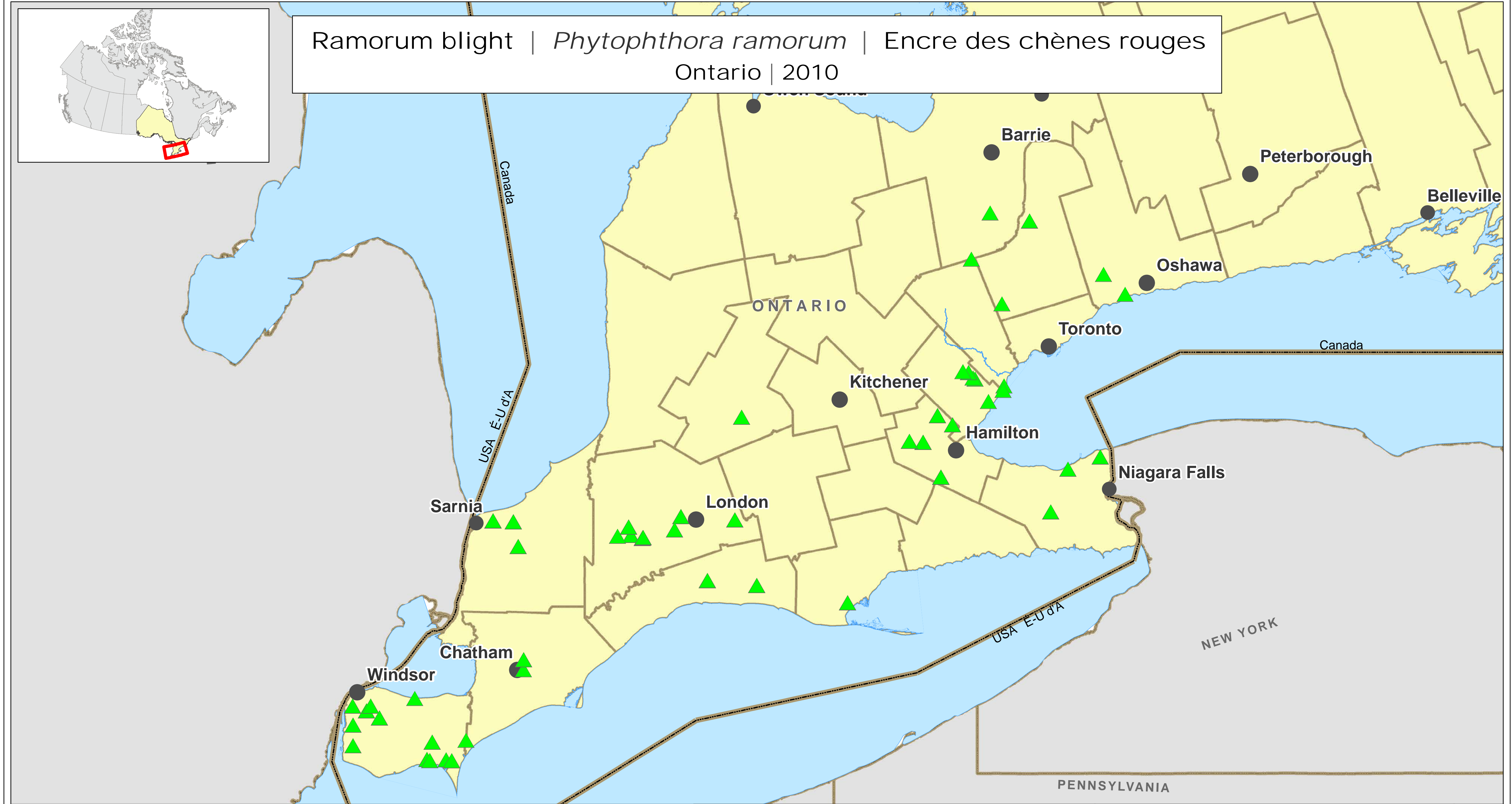








Ramorum blight | *Phytophthora ramorum* | Encre des chènes rouges
Ontario | 2010



▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.

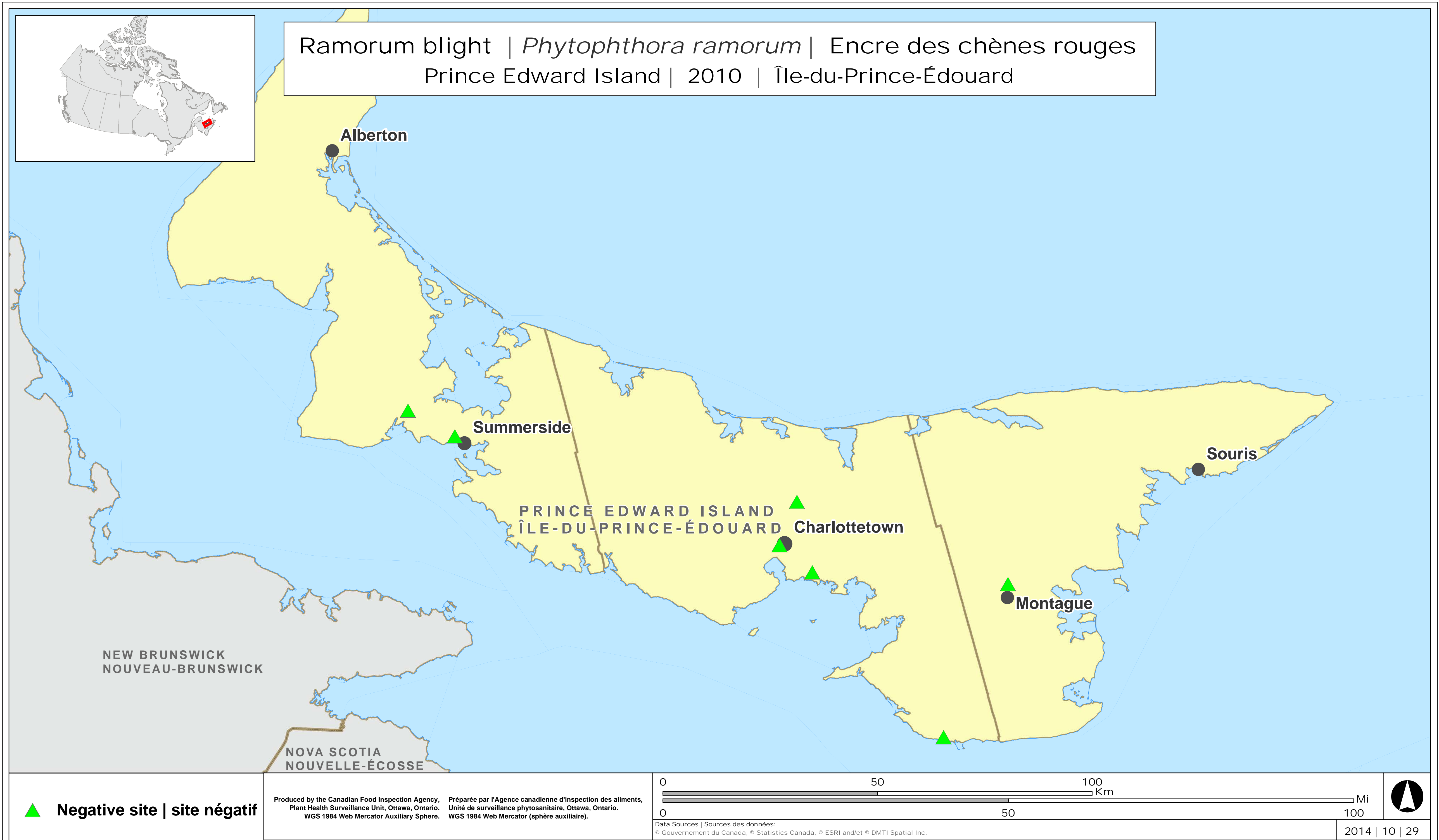
050100Km

050100Mi

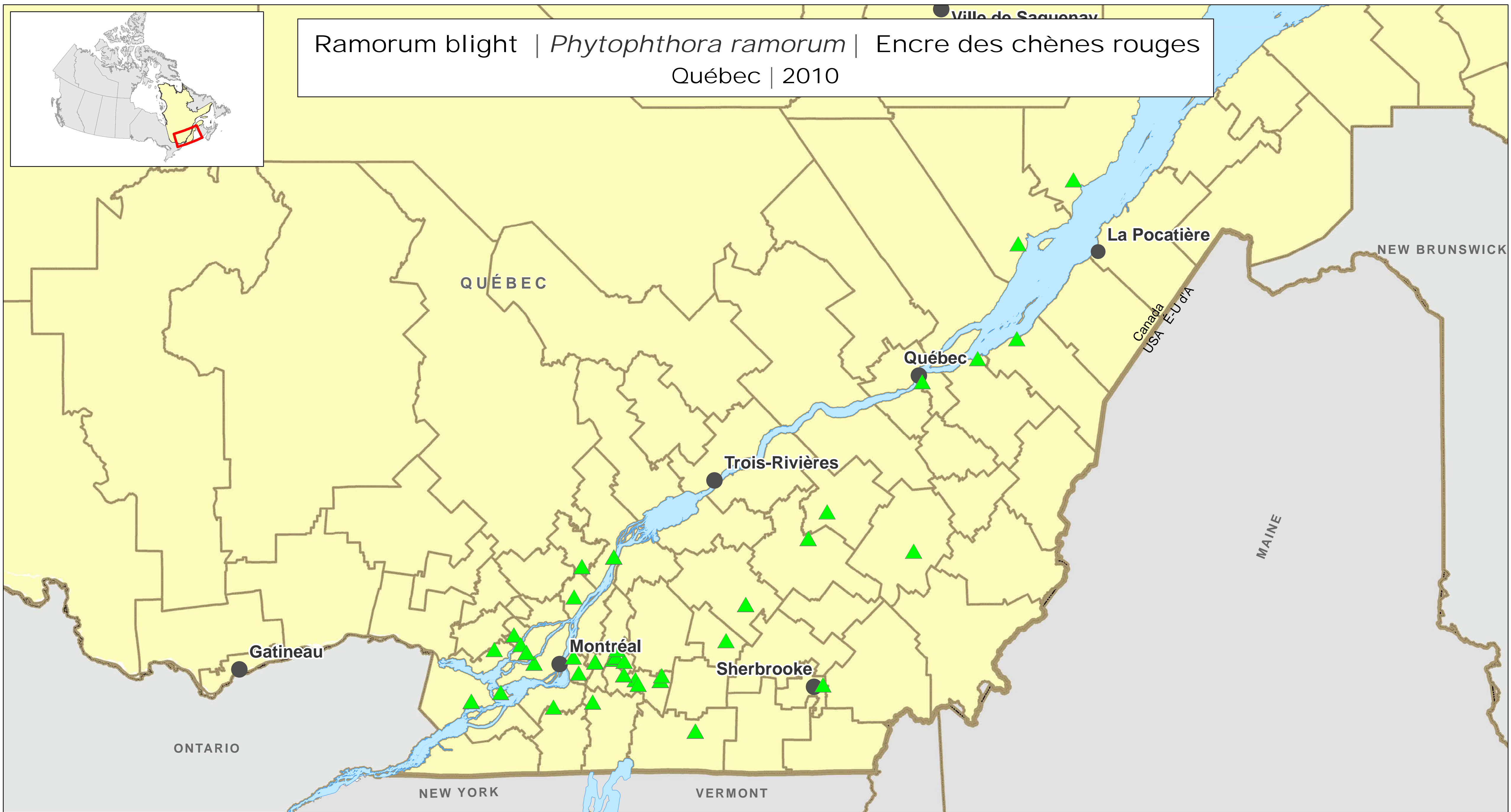
Data Sources | Sources des données:

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2014 | 10 | 29

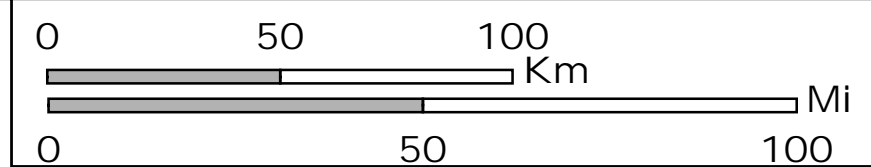


Ramorum blight | *Phytophthora ramorum* | Encre des chênes rouges
Québec | 2010



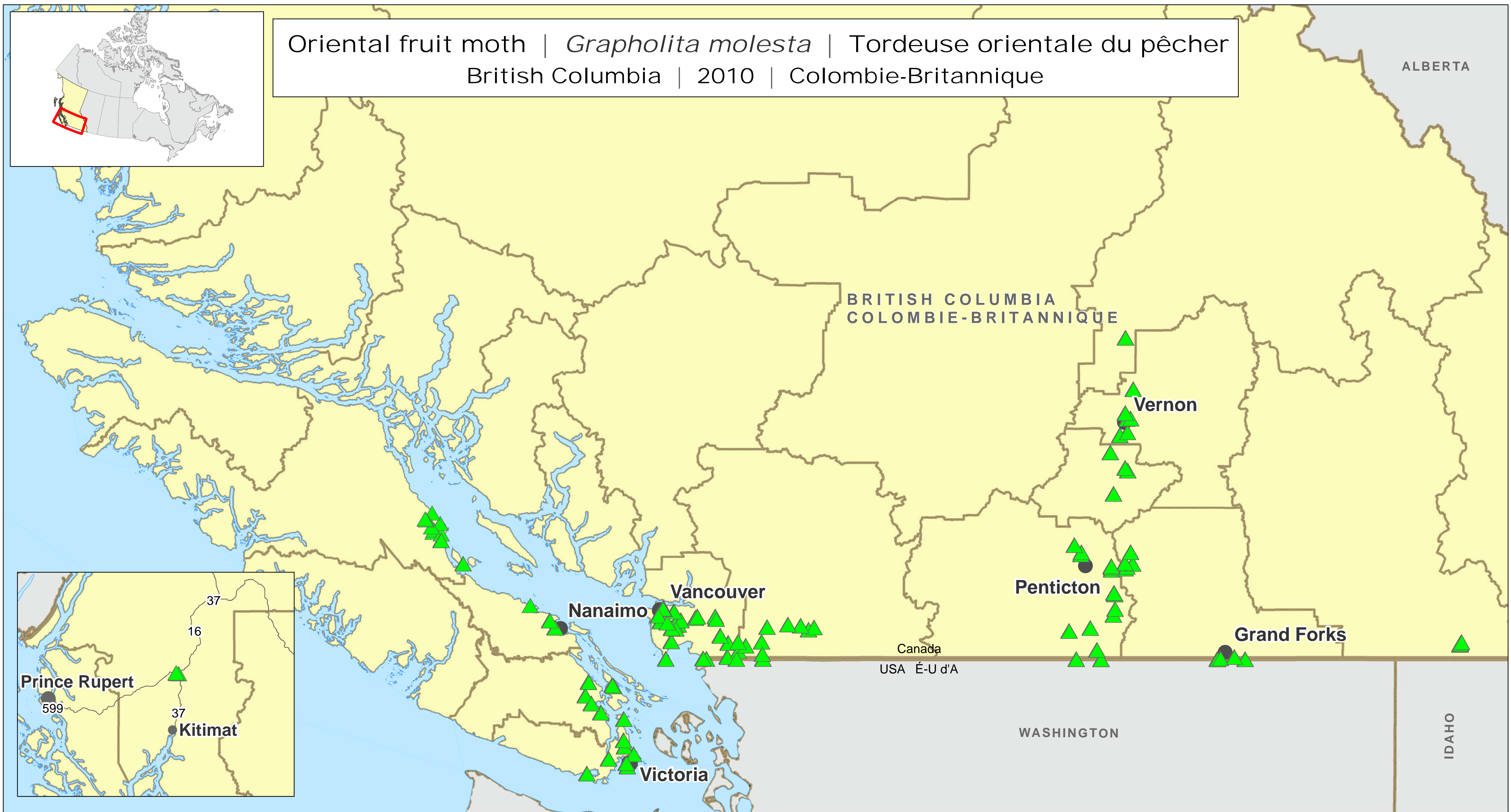
▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. / WGS 1984 Web Mercator (sphère auxiliaire).



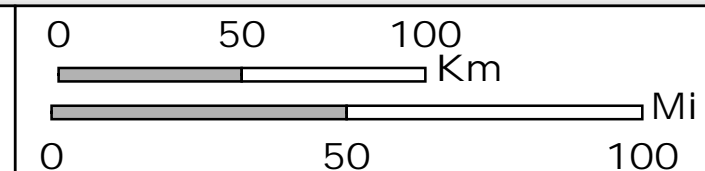
Data Sources | Sources des données:
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Oriental fruit moth | *Grapholita molesta* | Tordeuse orientale du pêcher
British Columbia | 2010 | Colombie-Britannique



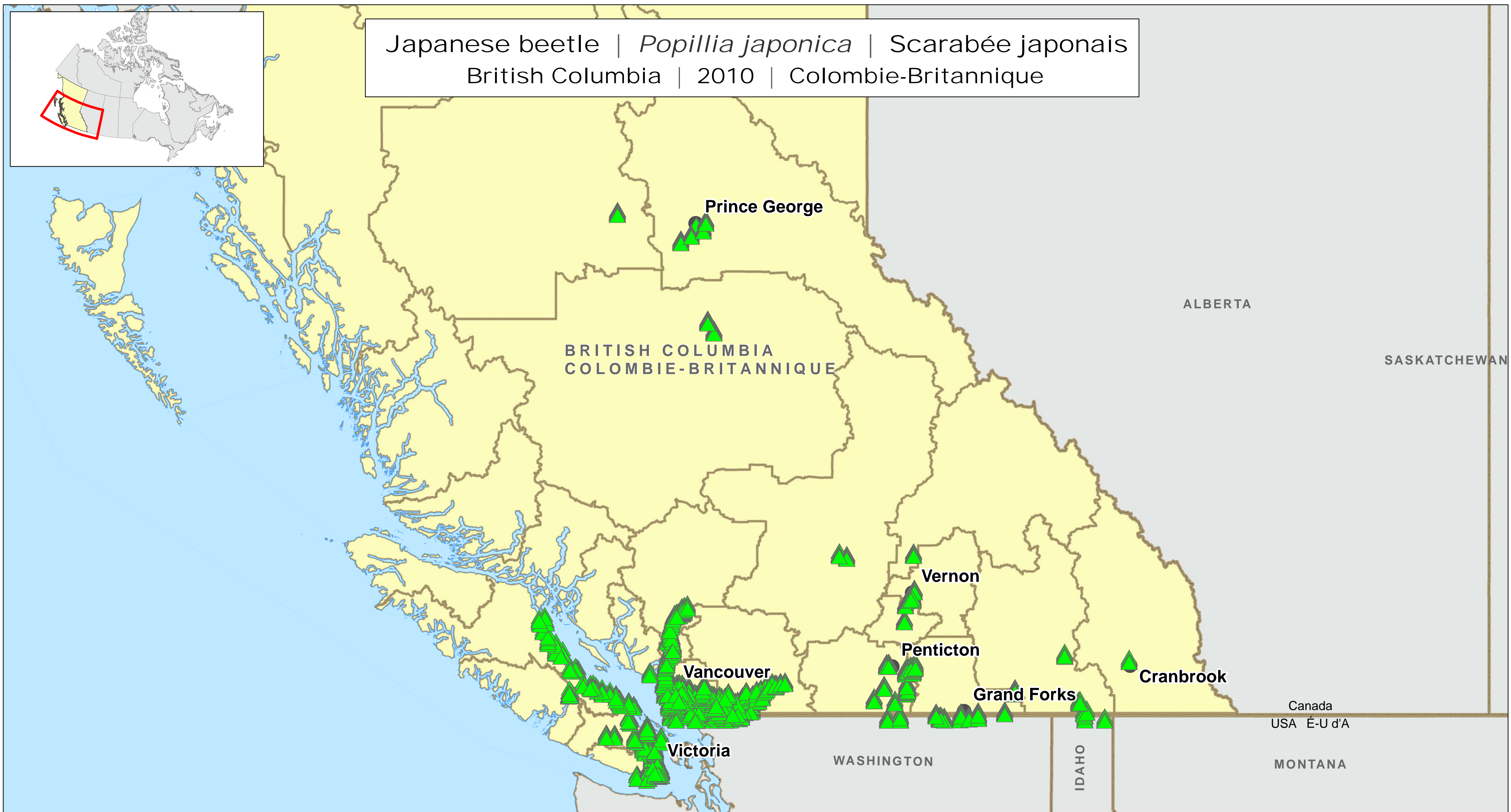
▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. / Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.



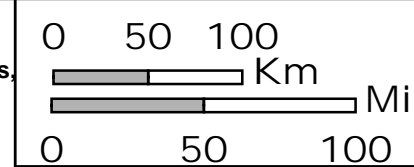
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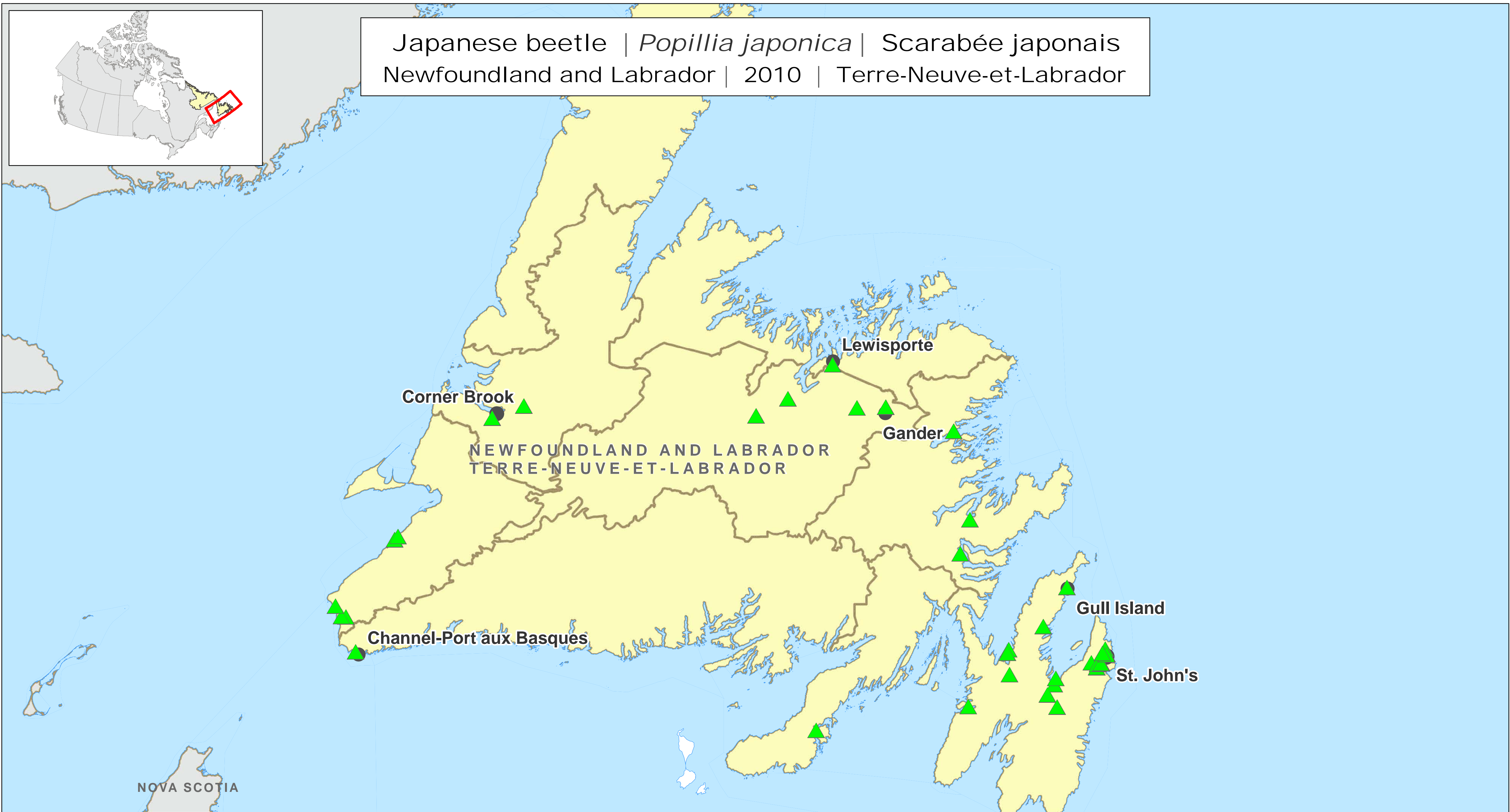
▲ Negative site | site négatif

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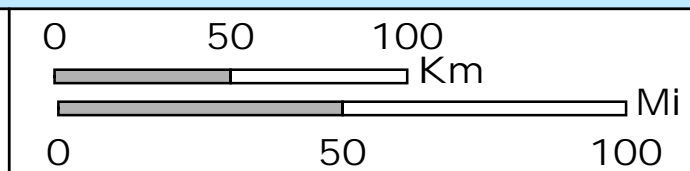




▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

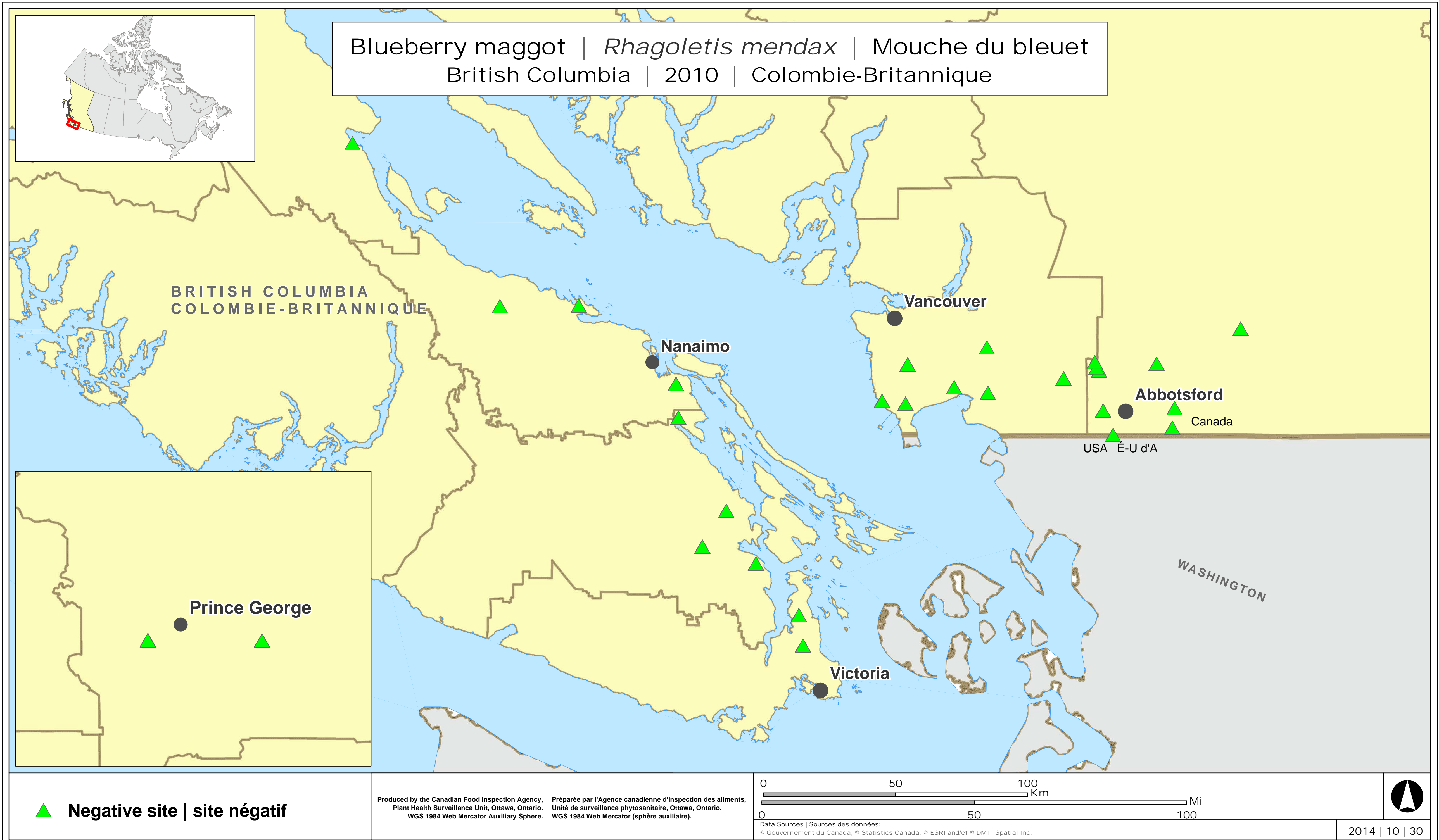
Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

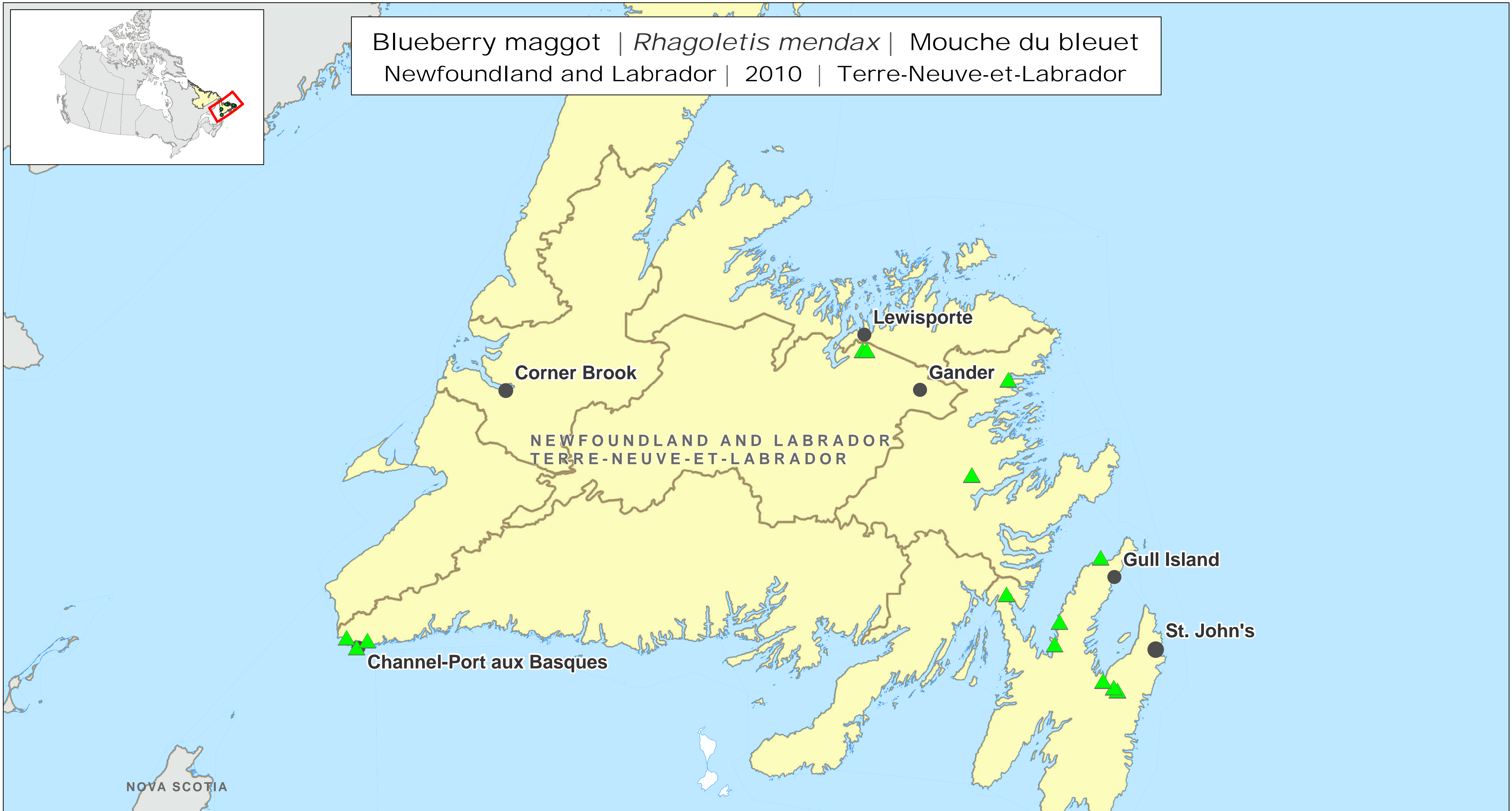


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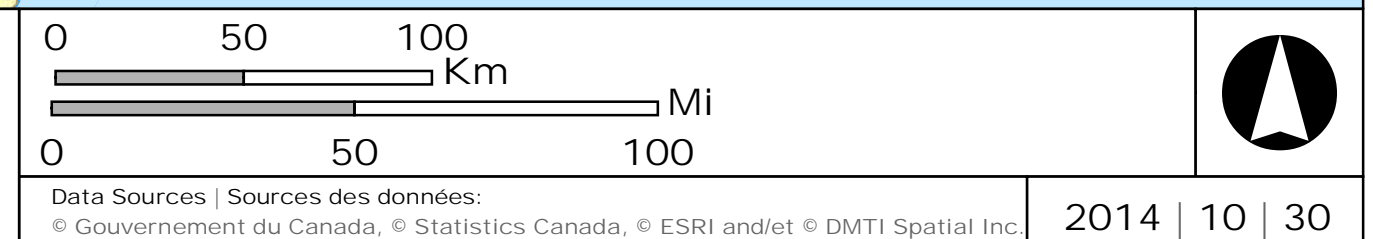


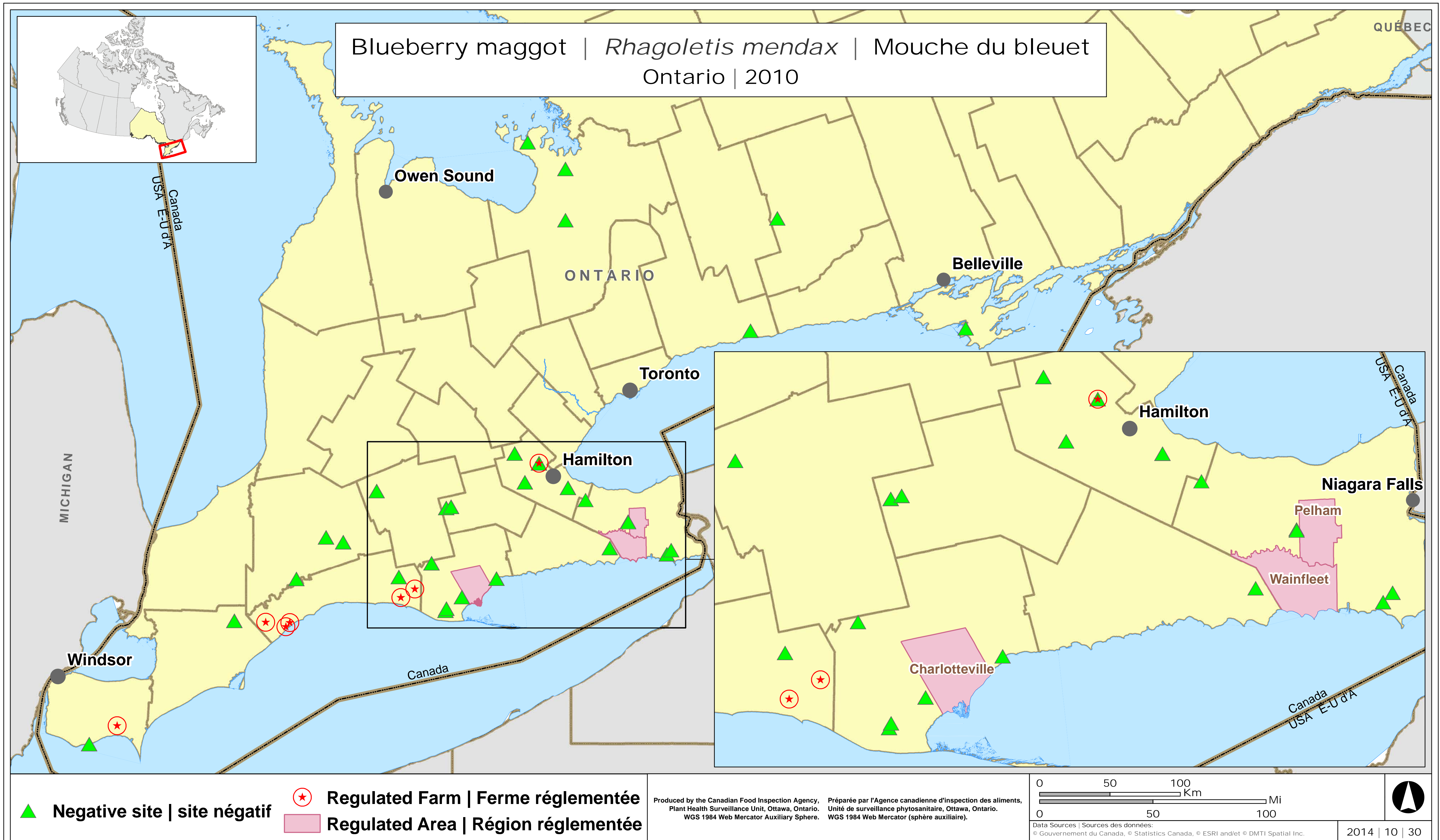


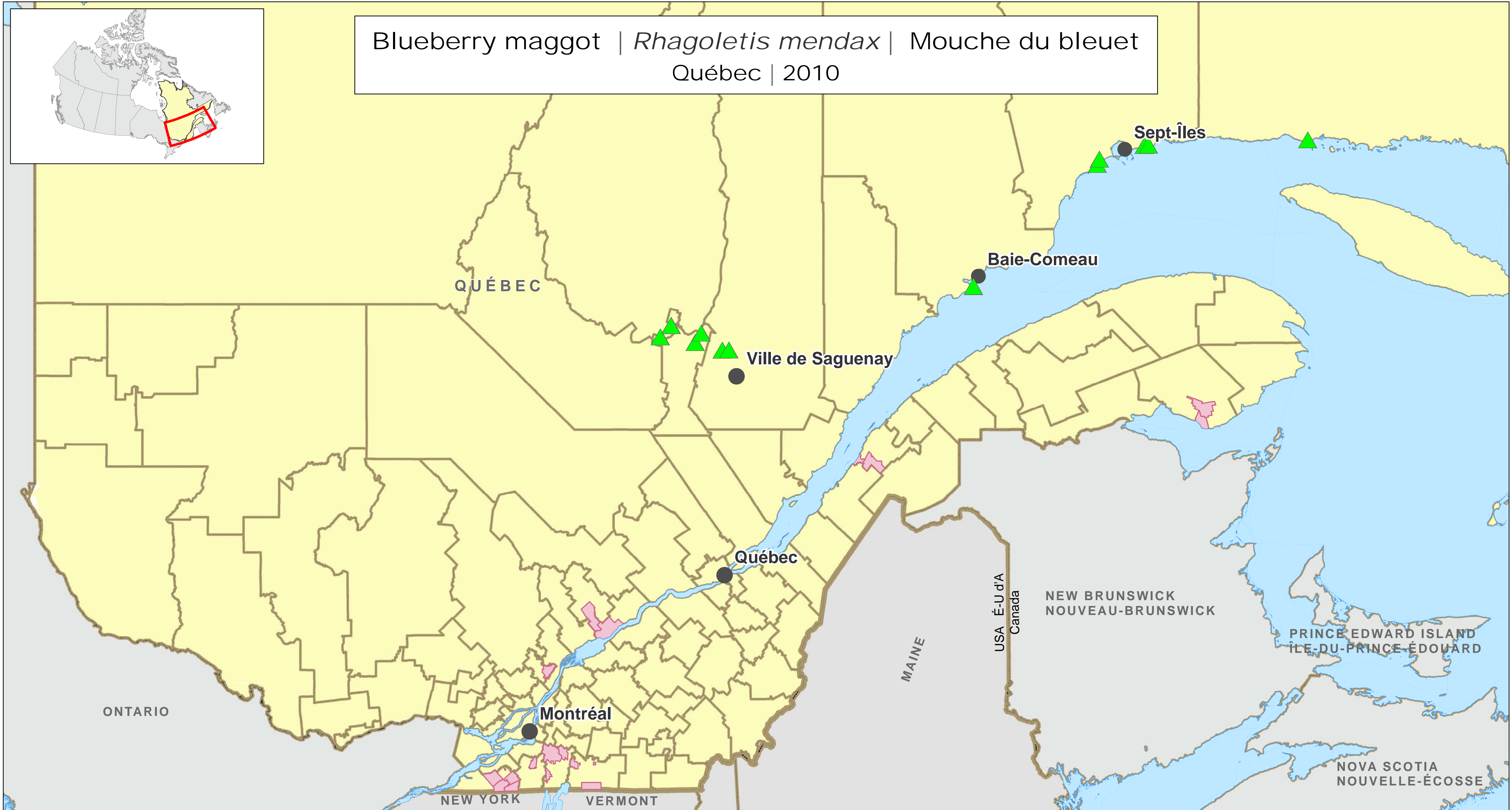
▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency,
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WGS 1984 Web Mercator Auxiliary Sphere.


Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).



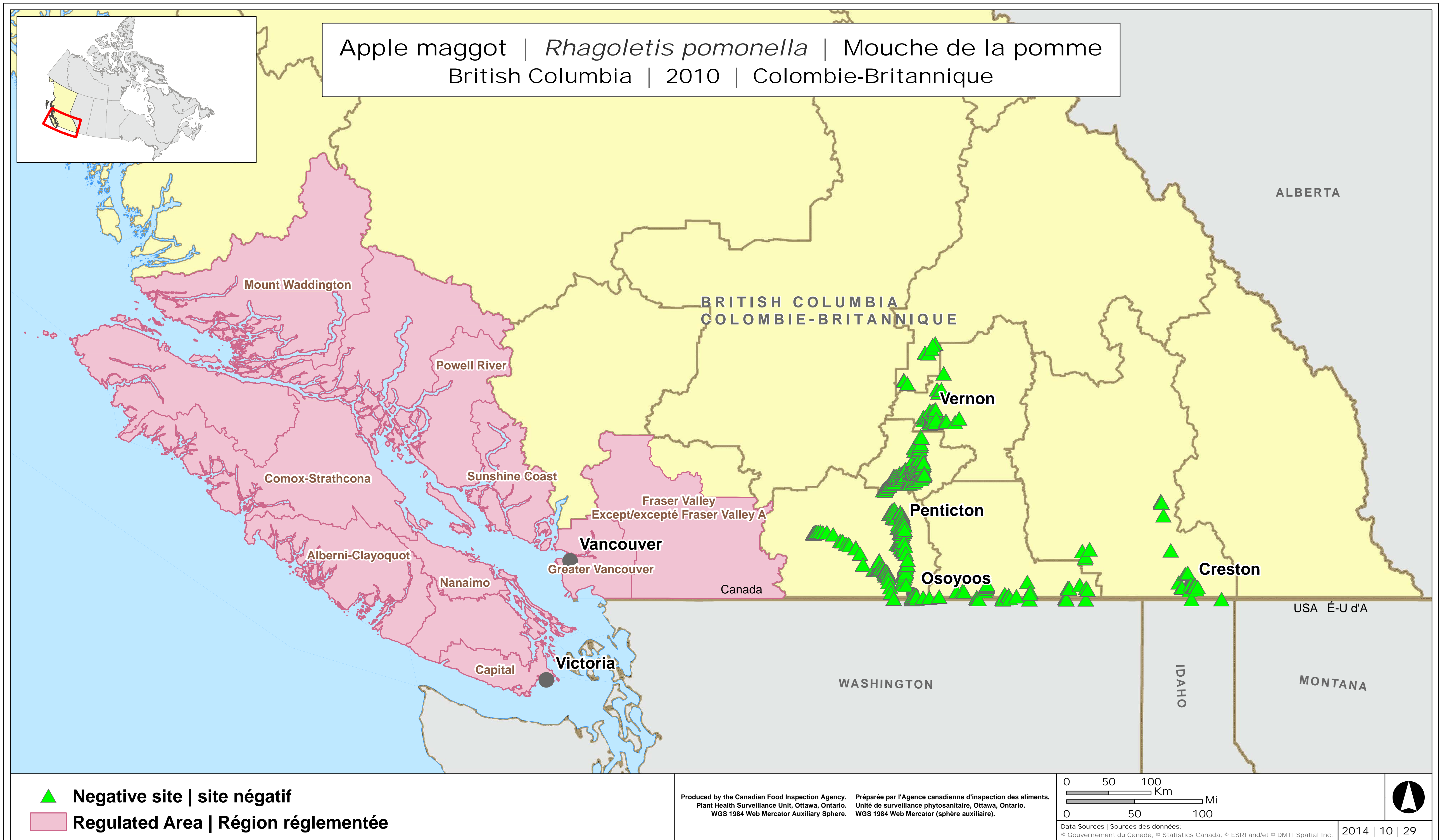




Blueberry maggot | *Rhagoletis mendax* | Mouche du bleuets
Québec | 2010

<p> Negative site site négatif</p> <p> Regulated Area Région réglementée</p>	<p>Produced by the Canadian Food Inspection Agency, Plant Health Surveillance Unit, Ottawa, Ontario. WGS 1984 Web Mercator Auxiliary Sphere.</p> <p>Préparée par l'Agence canadienne d'inspection des aliments, Unité de surveillance phytosanitaire, Ottawa, Ontario. WGS 1984 Web Mercator (sphère auxiliaire).</p>	<div data-bbox="2020 1743 2299 1834"> <p>0 50 100 Km</p> <p>0 50 100 Mi</p> </div> <div data-bbox="2020 1834 2595 1874"> <p>Data Sources Sources des données: © Gouvernement du Canada, © Statistics Canada, © ESRI and/et © DMTI Spatial Inc.</p> </div> <div data-bbox="2828 1743 3014 1874">  <p>2014 10 30</p> </div>
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Apple maggot | *Rhagoletis pomonella* | Mouche de la pomme
British Columbia | 2010 | Colombie-Britannique

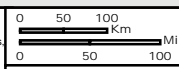


Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées
Alberta | 2010



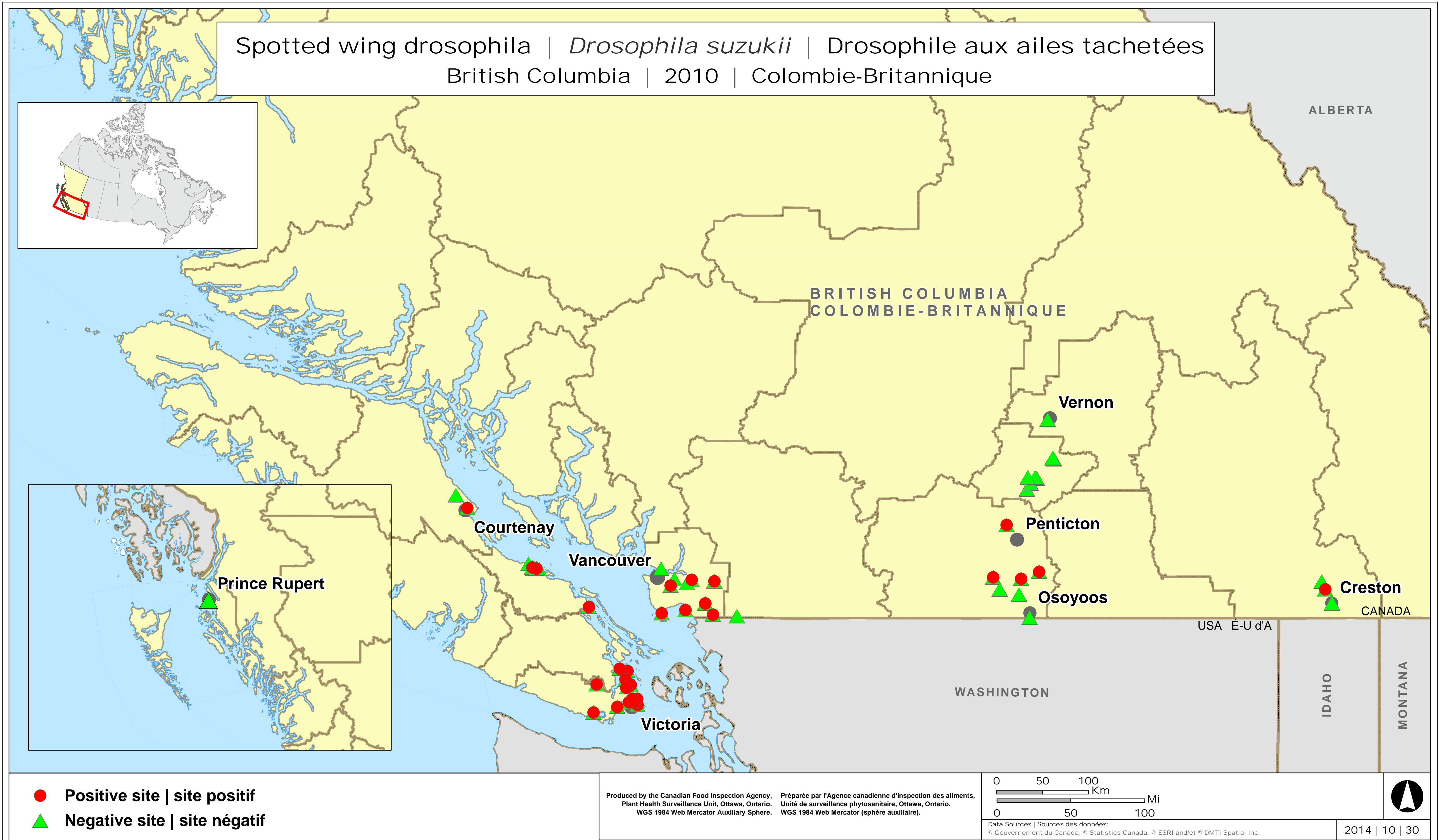
- Positive site | site positif
- ▲ Negative site | site négatif

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Plant Health Surveillance Unit, Ottawa, Ontario. Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

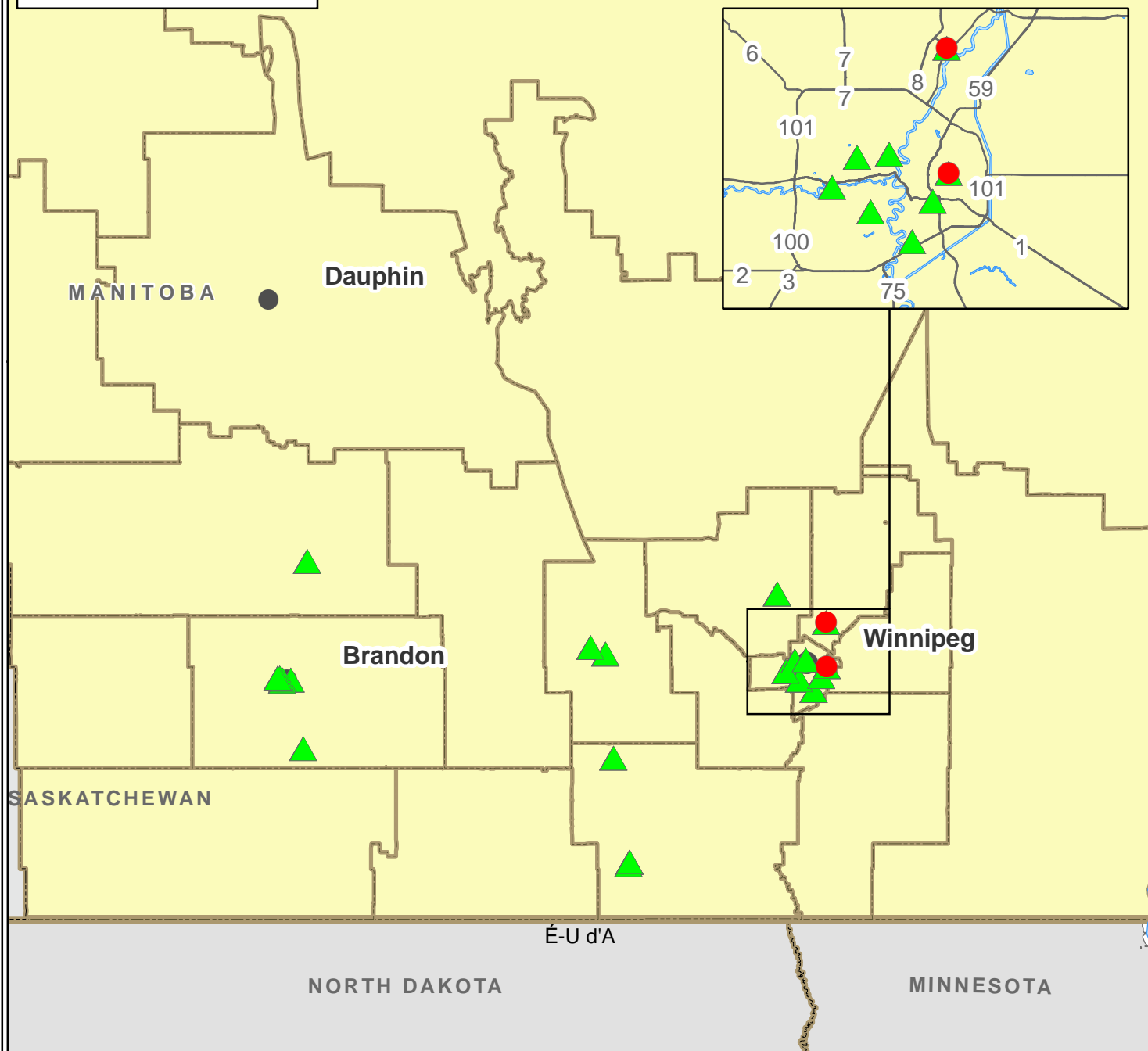


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Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées
Manitoba | 2010



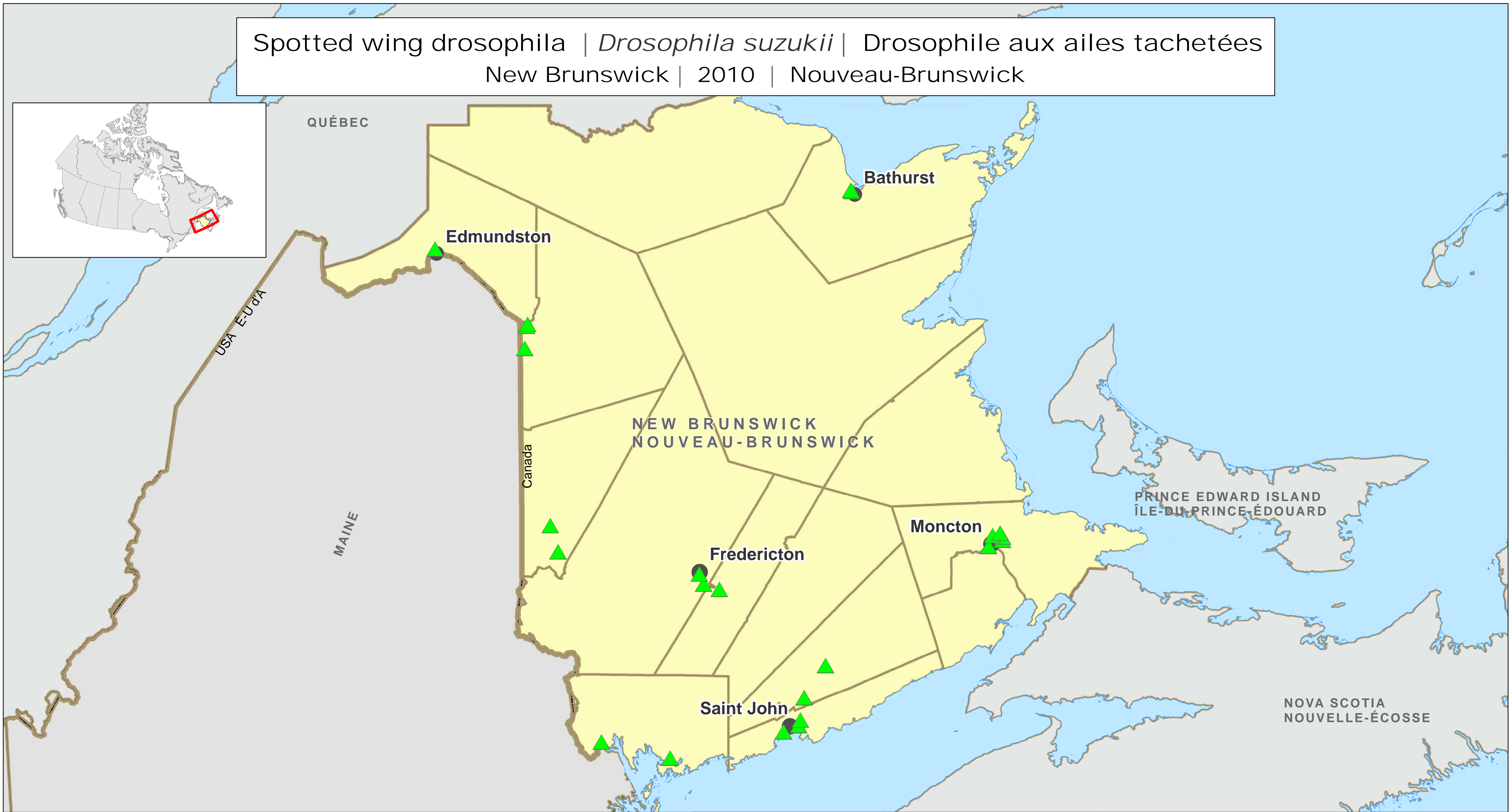
- Positive site | site positif
- ▲ Negative site | site négatif

Produced by the Canadian Food Inspection Agency, Préparée par l'Agence canadienne d'inspection des aliments,
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WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100 Km
0 50 100 Mi
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Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées

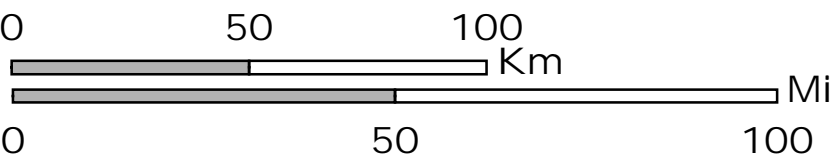
New Brunswick | 2010 | Nouveau-Brunswick



 Negative site | site négatif

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WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).

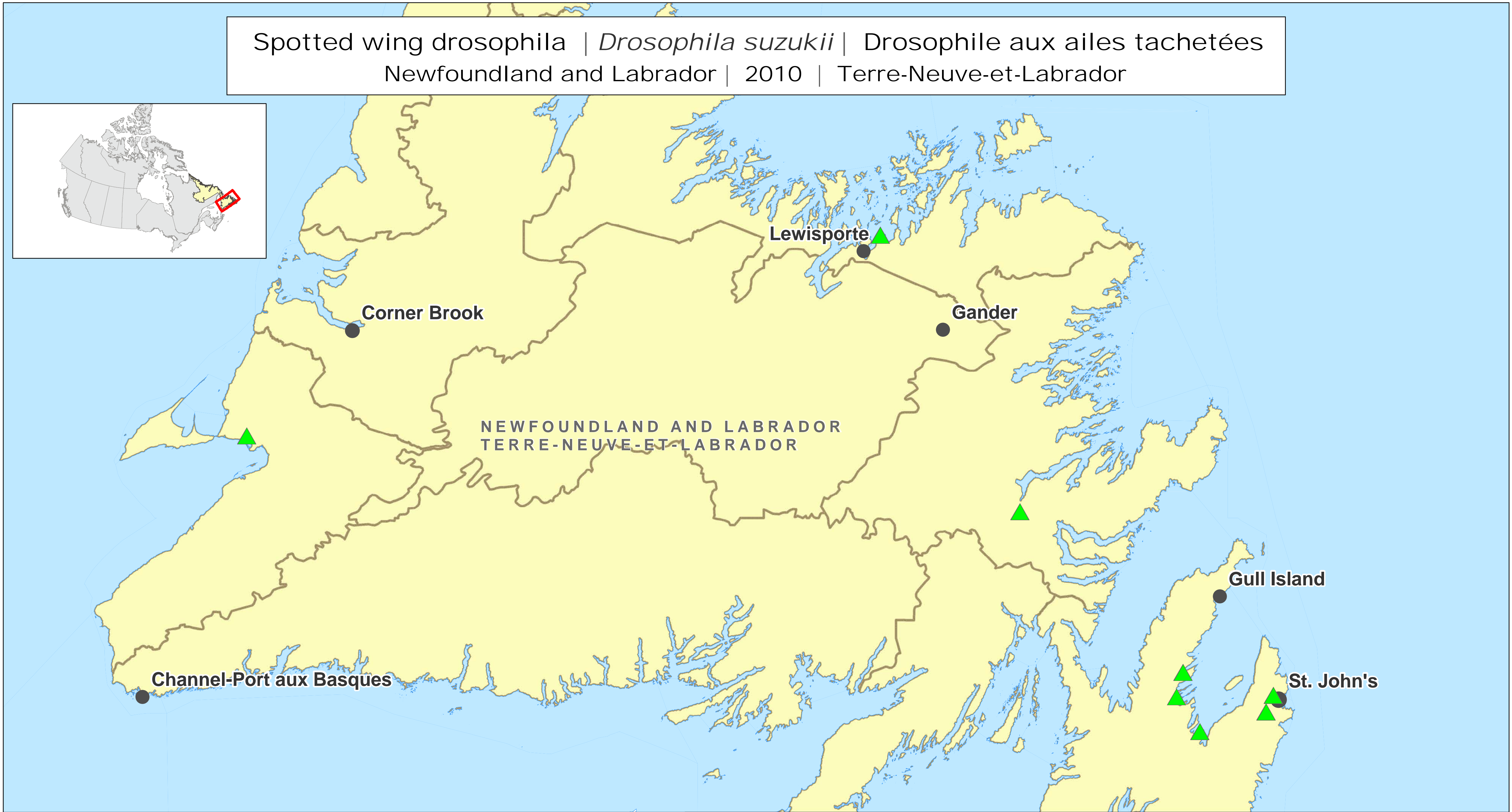


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Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées

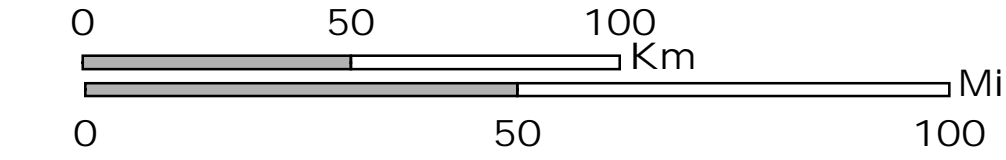
Newfoundland and Labrador | 2010 | Terre-Neuve-et-Labrador



 Negative site | site négatif

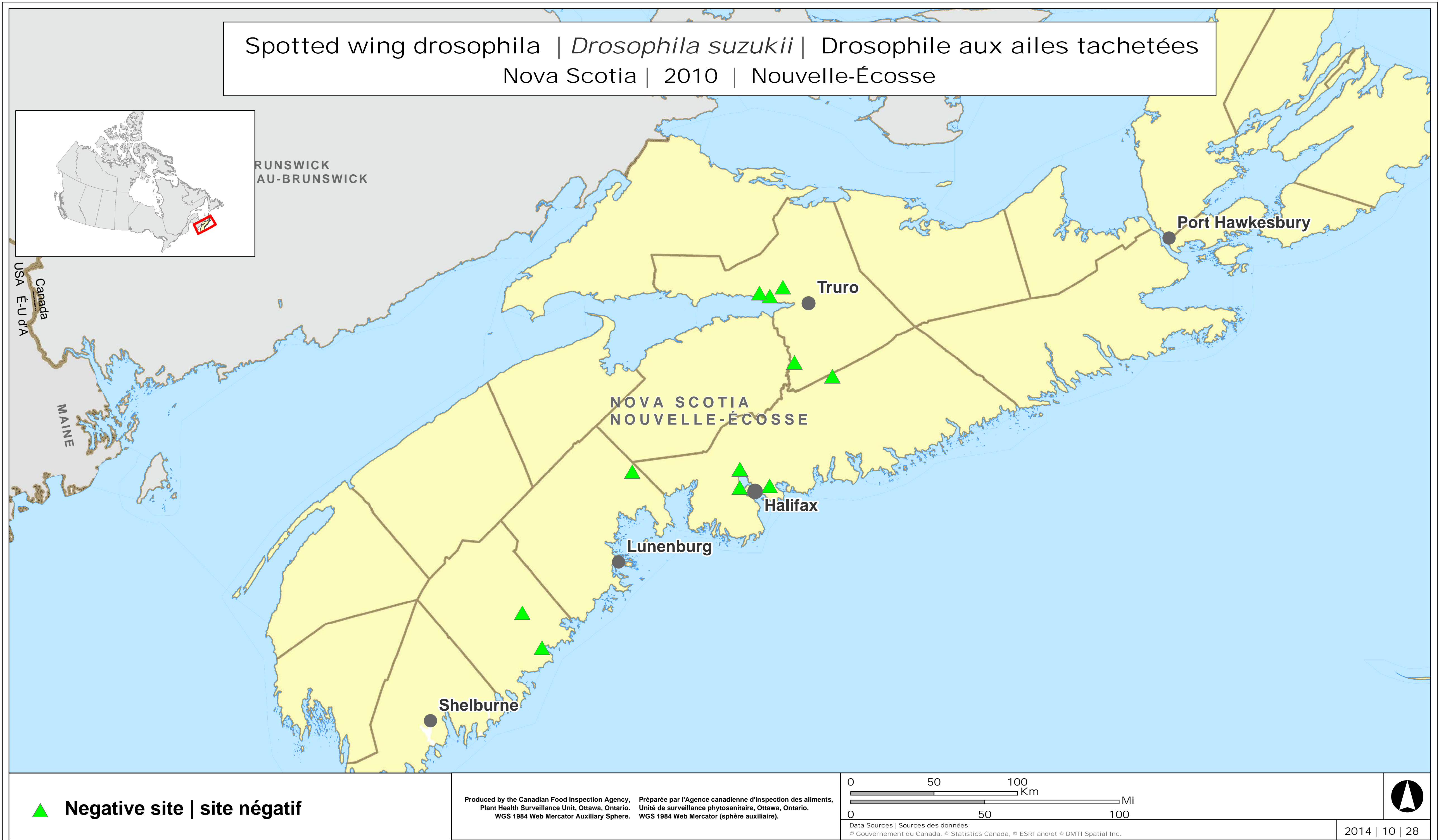
Produced by the Canadian Food Inspection Agency,
Plant Health Surveillance Unit, Ottawa, Ontario.
WGS 1984 Web Mercator Auxiliary Sphere.

Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
WGS 1984 Web Mercator (sphère auxiliaire).



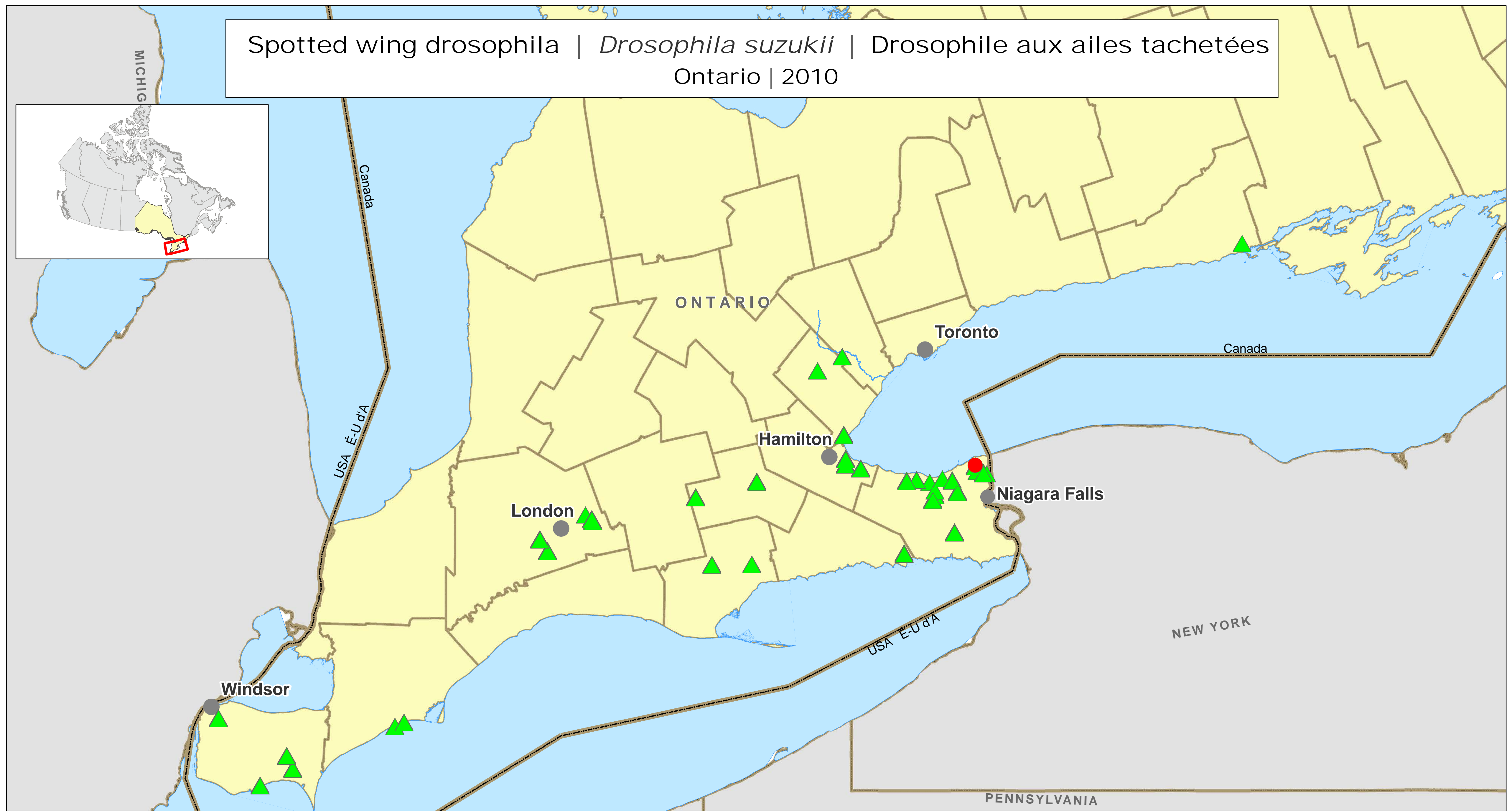
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Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées

Ontario | 2010



-  **Positive site | site positif**
-  **Negative site | site négatif**

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WGS 1984 Web Mercator Auxiliary Sphere.


Préparée par l'Agence canadienne d'inspection des aliments,
Unité de surveillance phytosanitaire, Ottawa, Ontario.
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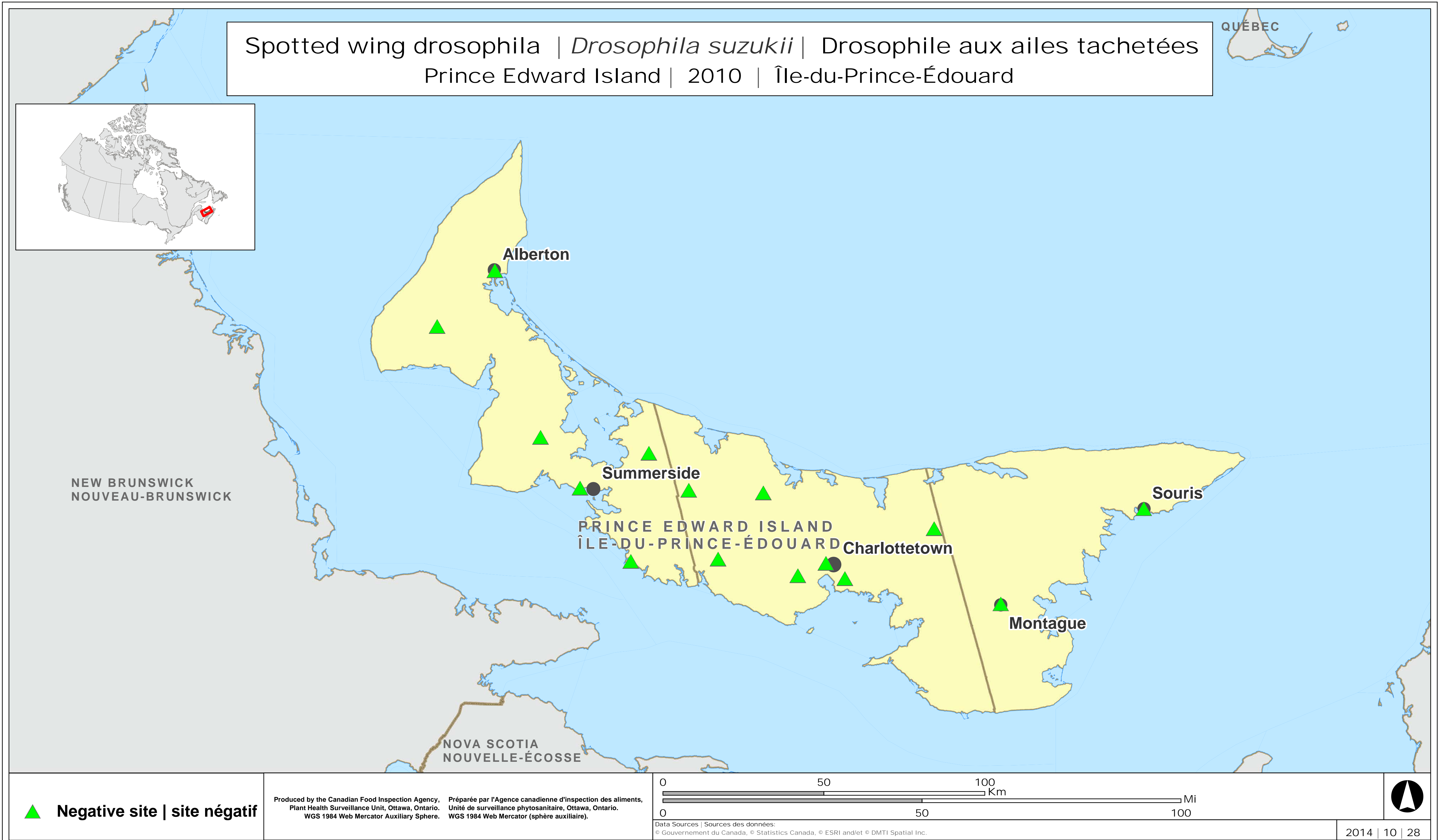
050100
Km

050100
Mi

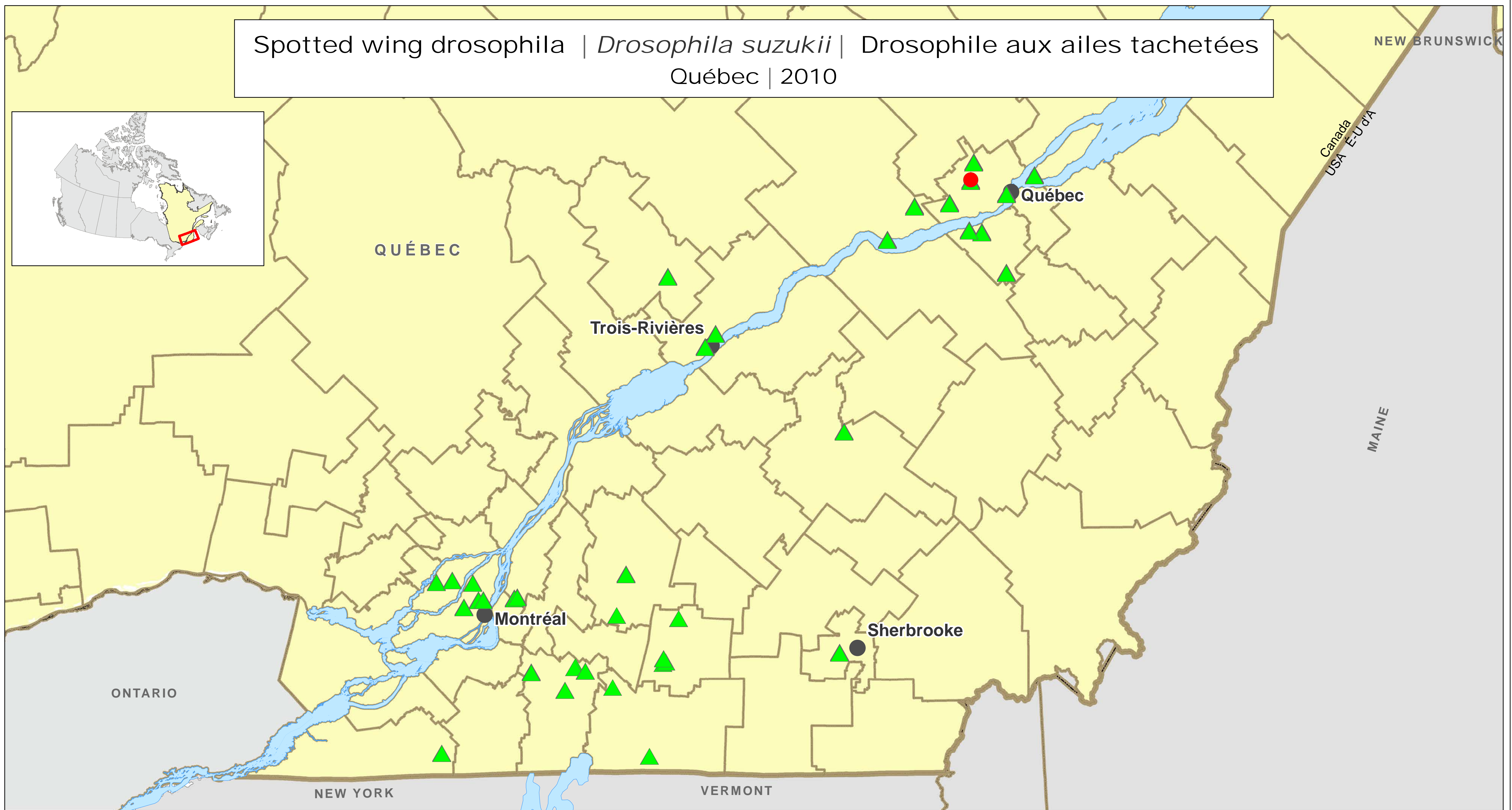
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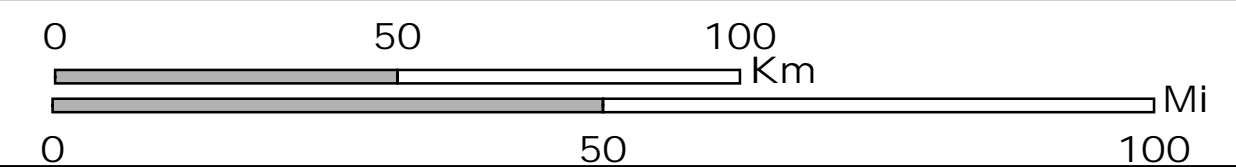


Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées
Québec | 2010



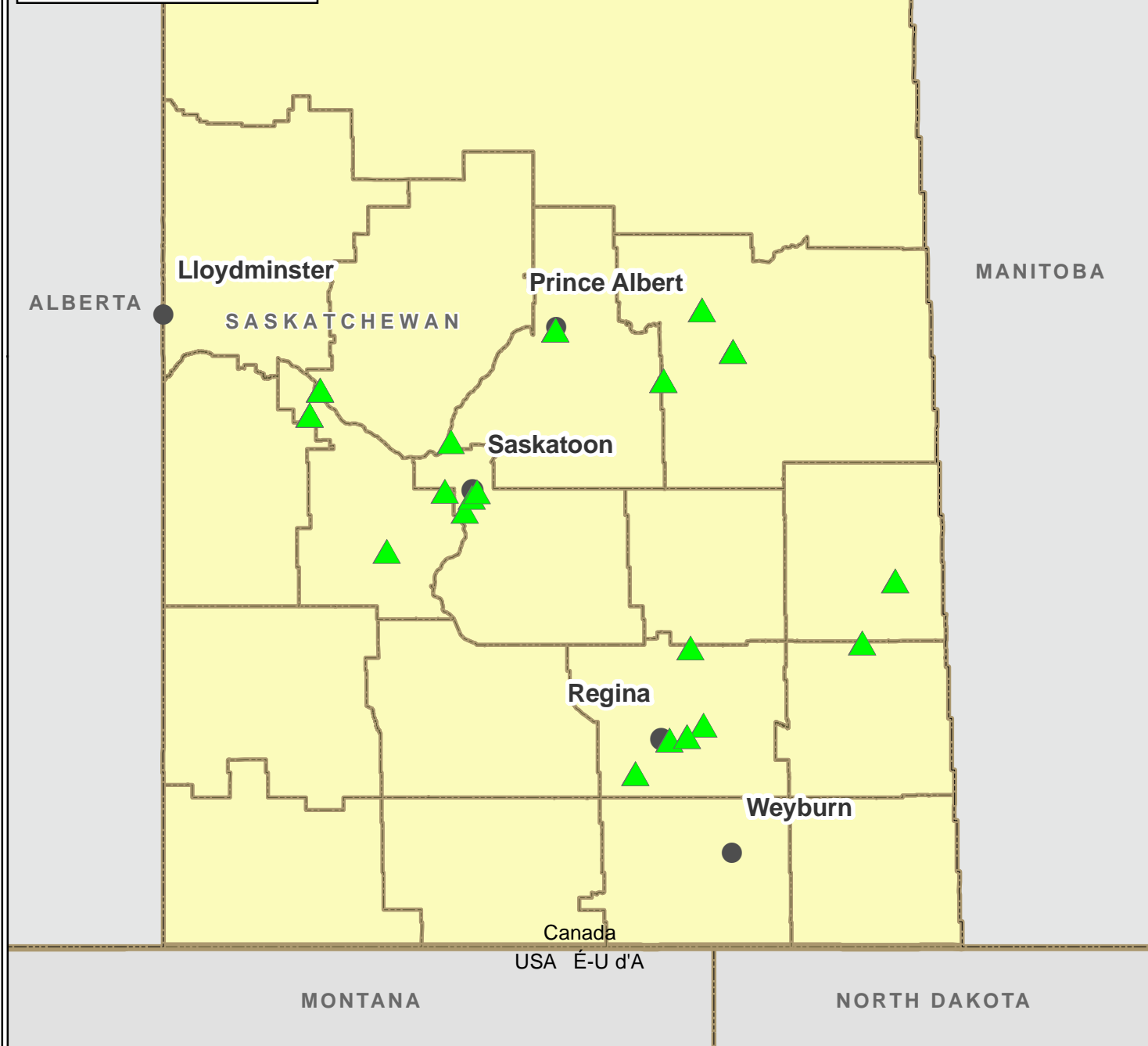
- Positive site | site positif
- ▲ Negative site | site négatif

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Spotted wing drosophila | *Drosophila suzukii* | Drosophile aux ailes tachetées
Saskatchewan | 2010



▲ Negative site | site négatif

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WGS 1984 Web Mercator Auxiliary Sphere. WGS 1984 Web Mercator (sphère auxiliaire).

0 50 100
Km

0 50 100
Mi

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