

Invasive insects to watch out for: A Canadian Plant Health Council initiative.



Canada



Meghan Vankosky¹, Jaimie Schnell², John Gavloski³, David Holden², James Tansey⁴, Tracey Baute⁵.

1. Agriculture and Agri-Food Canada, Saskatoon, 2. Canadian Food Inspection Agency, 3. Manitoba Agriculture, 4. Saskatchewan Ministry of Agriculture, 5. Ontario Ministry of Agriculture, Food and Rural Affairs; meghan.vankosky@agr.gc.ca

Introduction: Invasive insects, weeds, and plant pathogens put Canadian agriculture and forestry at risk. Early detection is necessary for eradication to have a chance at being successful. The Insect Surveillance Community of Practice has members across Canada who participate in insect monitoring and surveillance, but community scientists can also play a primary role in early detection, assuming people know what to look for.







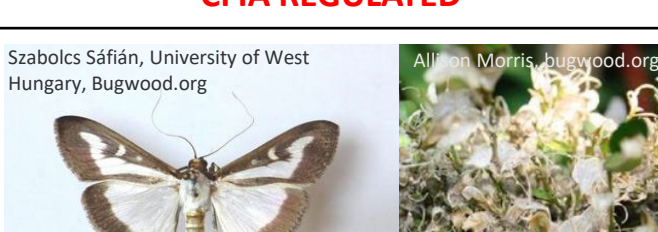

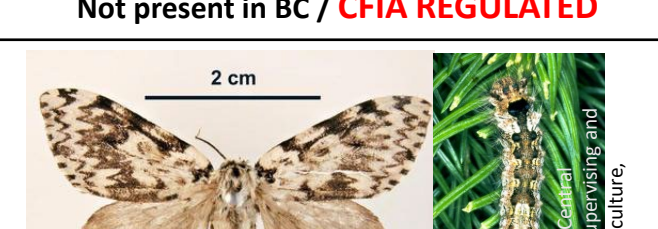
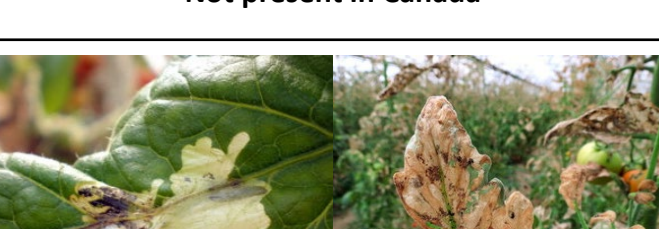


Objective: To curate a list of easily identifiable (by morphology or plant damage symptoms) insects that could be invasive in or expand their range in British Columbia, the Prairie Region, Ontario & Quebec, and Atlantic Canada.

Methods: The expert group in the Insect Surveillance Community of Practice listed invasive insects of concern by region. From this list, easily identifiable insects or insects with distinctive plant damage symptoms were selected. Pictures for the posters were sourced and used with permission from Community of Practice members, entomological colleagues across Canada, from bugwood.org, and Manaaki Whenua – Landcare Research in New Zealand. Information about the insects was largely sourced from CFIA online resources (<https://inspection.canada.ca/plant-health/invasive-species/regulated-pests/eng/1363317115207/1363317187811>).

Results: Posters for the four regions of Canada, in English and French were created in spring 2023. The posters were distributed as PDFs to appropriate stakeholders across Canada in summer 2023 and are available online from the Prairie Pest Monitoring Network (<https://prairiepest.ca>). Observations can be reported using the QR code on each poster; regulated insects should also be reported to the CFIA and the link for reporting is available in the reporting tool.

Priority Invasive and Migratory Insects to Report BRITISH COLUMBIA













Insects to watch for and report by anyone interacting with insects. Use the QR CODE to report all observations, including species regulated by the Canadian Food Inspection Agency (CFIA).

 Spotted lanternfly, <i>Lycorma delicatula</i> Hosts: Tree of heaven, grapevine, various (fruit) trees and shrubs Not present in Canada / CFIA REGULATED	 Asian longhorned beetle, <i>Anoplophora glabripennis</i> Hosts: Deciduous trees Not present in Canada / CFIA REGULATED
 Northern giant hornet, <i>Vespa mandarinia</i> Threat to native bees and honeybee hives Aggressive with painful sting Not present in Canada	 Yellow-spotted stink bug, <i>Erthesina fullo</i> Hosts: Fruits, vegetables, and ornamental plants Not present in Canada
 Spongy moth, <i>Lymantria dispar</i> Hosts: Oak, maple, beech, willow, apple, plum Not established in BC CFIA REGULATED	 Japanese beetle, <i>Popillia japonica</i> Hosts: Turf, fruits, vegetables, ornamentals Limited distribution in B.C.: Lower Mainland only CFIA REGULATED
 Box tree moth, <i>Cydalima perspectalis</i> Hosts: Boxwood shrubs (<i>Buxus</i> spp.) Not present in BC / CFIA REGULATED	 Siberian silk moth, <i>Dendrolimus sibiricus</i> Hosts: Coniferous trees Not present in Canada
 Nun moth, <i>Lymantria monacha</i> Hosts: Mainly coniferous trees Not present in Canada / CFIA REGULATED	 Tomato leafminer, <i>Phthorimaea absoluta</i> Hosts: Tomato, other Solanaceae Not present in Canada / CFIA REGULATED
 Rosy tussock moth, <i>Lymantria mathura</i> Hosts: Oak, beech, fruit trees Not present in Canada CFIA REGULATED	 European cherry fruit fly, <i>Rhagoletis cerasi</i> Hosts: Cherry varieties and wild honeysuckle Not present in BC CFIA REGULATED

Canada Alberta Saskatchewan Manitoba
BRITISH COLUMBIA Ministry of Agriculture and Food
V1 2023

Priority Invasive and Migratory Insects to Report PRAIRIE REGION




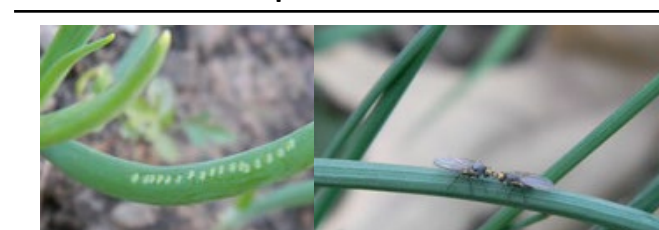
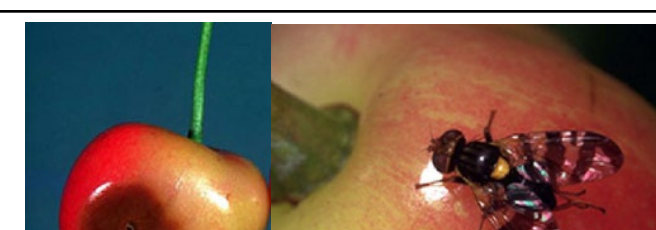





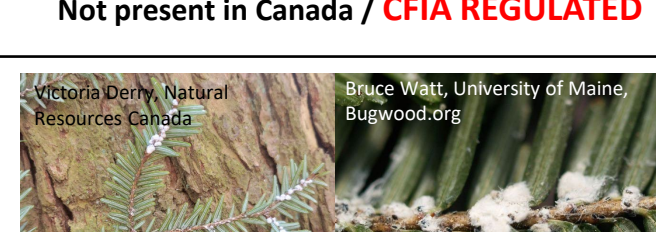
Insects to watch for and report by anyone interacting with insects. Use the QR CODE to report all observations, including species regulated by the Canadian Food Inspection Agency (CFIA).

 Spotted lanternfly, <i>Lycorma delicatula</i> Hosts: Tree of heaven, grapevine, various (fruit) trees and shrubs Not present in Canada CFIA REGULATED	 Yellow-spotted stink bug, <i>Erthesina fullo</i> Hosts: Fruits, vegetables, and ornamental plants Not present in Canada
 Brown marmorated stink bug, <i>Halyomorpha halys</i> Hosts: Fruits, vegetables, ornamental plants Not present in AB, SK, MB	 Western bean cutworm, <i>Striacosta albicosta</i> Hosts: Dry beans, corn, soybean (less preferred) Not present/established in AB, SK, MB
 Spongy moth, <i>Lymantria dispar</i> Hosts: Oak, maple, beech, willow, apple, plum Not present/established in AB, SK, MB CFIA REGULATED	 Fall armyworm, <i>Spodoptera frugiperda</i> Hosts: Corn, cereals, forages Migrant into western Canada
 Asian long-horned beetle, <i>Anoplophora glabripennis</i> Hosts: Coniferous trees Not present in Canada / CFIA REGULATED	 Japanese beetle, <i>Popillia japonica</i> Hosts: Turf, fruits, vegetables, ornamentals Not present in AB, SK, MB CFIA REGULATED
 Emerald ash borer, <i>Agrilus planipennis</i> Hosts: Ash species Not present in AB, SK, detected in MB CFIA REGULATED	 Pollen beetle, <i>Brassicogethes viridescens</i> Hosts: canola and related plants Not present in AB, SK, MB
 Northern giant hornet, <i>Vespa mandarinia</i> Threat to native bees and honeybee hives Aggressive with painful sting Not present in Canada	 European cherry fruit fly, <i>Rhagoletis cerasi</i> Hosts: Cherry varieties and wild honeysuckle Not present in AB, SK, MB / CFIA REGULATED

Canada Alberta Saskatchewan Manitoba
V1 2023

Priority Invasive and Migratory Insects to Report ONTARIO and QUEBEC



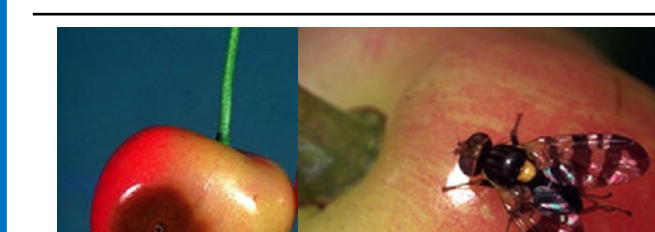






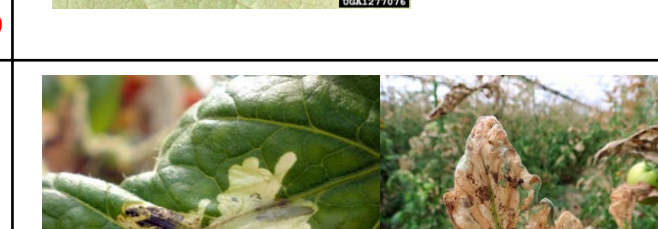

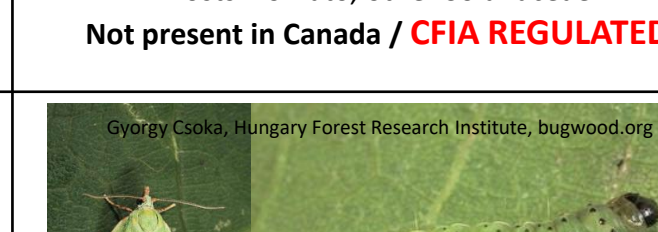
Insects to watch for and report by anyone interacting with insects. Use the QR CODE to report all observations, including species regulated by the Canadian Food Inspection Agency (CFIA).

 Spotted lanternfly, <i>Lycorma delicatula</i> Hosts: Tree of heaven, grapevine, various (fruit) trees and shrubs Not present in Canada / CFIA REGULATED	 Yellow-spotted stink bug, <i>Erthesina fullo</i> Hosts: Fruits, vegetables, and ornamental plants Not present in Canada
 Northern giant hornet, <i>Vespa mandarinia</i> Threat to native bees and honeybee hives Aggressive with painful sting Not present in Canada	 Asian long-horned beetle, <i>Anoplophora glabripennis</i> Hosts: Deciduous trees Not present in Canada / CFIA REGULATED
 Allium leafminer, <i>Phytomyza gymnostoma</i> Hosts: Garlic, onion, leek, chives Not present in Canada CFIA REGULATED	 European cherry fruit fly, <i>Rhagoletis cerasi</i> Hosts: Cherry varieties and wild honeysuckle Limited distribution in ON and southern QC CFIA REGULATED
 Box tree moth, <i>Cydalima perspectalis</i> Hosts: Boxwood shrubs (<i>Buxus</i> spp.) Not present in Quebec / CFIA REGULATED	 Rosy tussock moth, <i>Lymantria mathura</i> Hosts: Oak, beech, fruit trees Not present in Canada CFIA REGULATED
 Nun moth, <i>Lymantria monacha</i> Hosts: Mainly coniferous trees Not present in Canada / CFIA REGULATED	 Tomato leafminer, <i>Tuta (Phthorimaea) absoluta</i> Hosts: Tomato, other Solanaceae Not present in Canada / CFIA REGULATED
 Oak Tortrix, <i>Tortrix viridana</i> Hosts: Hardwood trees and shrubs Not present in Canada	 Hemlock woolly adelgid, <i>Adelges tsugae</i> Hosts: Hemlock (<i>Tsuga</i> spp.) Limited distribution in ON; not present in QC CFIA REGULATED

Canada Ontario Québec
V1 2023

Priority Invasive and Migratory Insects to Report ATLANTIC CANADA

Insects to watch for and report by anyone interacting with insects. Use the QR CODE to report all observations, including species regulated by the Canadian Food Inspection Agency (CFIA).

 Spotted lanternfly, <i>Lycorma delicatula</i> Hosts: Tree of heaven, grapevine, various (fruit) trees and shrubs Not present in Canada / CFIA REGULATED	 Yellow-spotted stink bug, <i>Erthesina fullo</i> Hosts: Fruits, vegetables, and ornamental plants Not present in Canada
 European cherry fruit fly, <i>Rhagoletis cerasi</i> Hosts: Cherry varieties and wild honeysuckle Not present in Atlantic Canada CFIA REGULATED	 Asian long-horned beetle, <i>Anoplophora glabripennis</i> Hosts: Deciduous trees Not present in Canada / CFIA REGULATED
 Elm zigzag sawfly, <i>Aproceros leucopoda</i> Hosts: Elm trees Not present in Atlantic Canada	 Northern giant hornet, <i>Vespa mandarinia</i> Threat to native bees and honeybee hives Aggressive with painful sting Not present in Canada
 Box tree moth, <i>Cydalima perspectalis</i> Hosts: Boxwood shrubs (<i>Buxus</i> spp.) Not present in Atlantic Canada / CFIA REGULATED	 Rosy tussock moth, <i>Lymantria mathura</i> Hosts: Oak, beech, fruit trees Not present in Canada CFIA REGULATED
 Nun moth, <i>Lymantria monacha</i> Hosts: Defoliator of mainly coniferous trees Not present in Canada / CFIA REGULATED	 Tomato leafminer, <i>Tuta (Phthorimaea) absoluta</i> Hosts: Tomato, other Solanaceae Not present in Canada / CFIA REGULATED
 Siberian silk moth, <i>Dendrolimus sibiricus</i> Hosts: Coniferous trees Not present in Canada	 Oak Tortrix, <i>Tortrix viridana</i> Hosts: Hardwood trees and shrubs Not present in Canada

Canada NOVA SCOTIA New Brunswick Labrador perennia
V1 2023