



Canadian Food
Inspection Agency

Agence canadienne
d'inspection des aliments

Canadian Food Inspection Agency



Our vision:

To excel as a science-based regulator, trusted and respected by Canadians and the international community.

Our mission:

Dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada's people, environment and economy.

Emergency Management Research In Action: Plant Health

***OMAFRA-University of Guelph Emergency Management
Research Expo***

Erin Bullas-Appleton, Plant Health Survey Biologist, CFIA

Canada

Overview

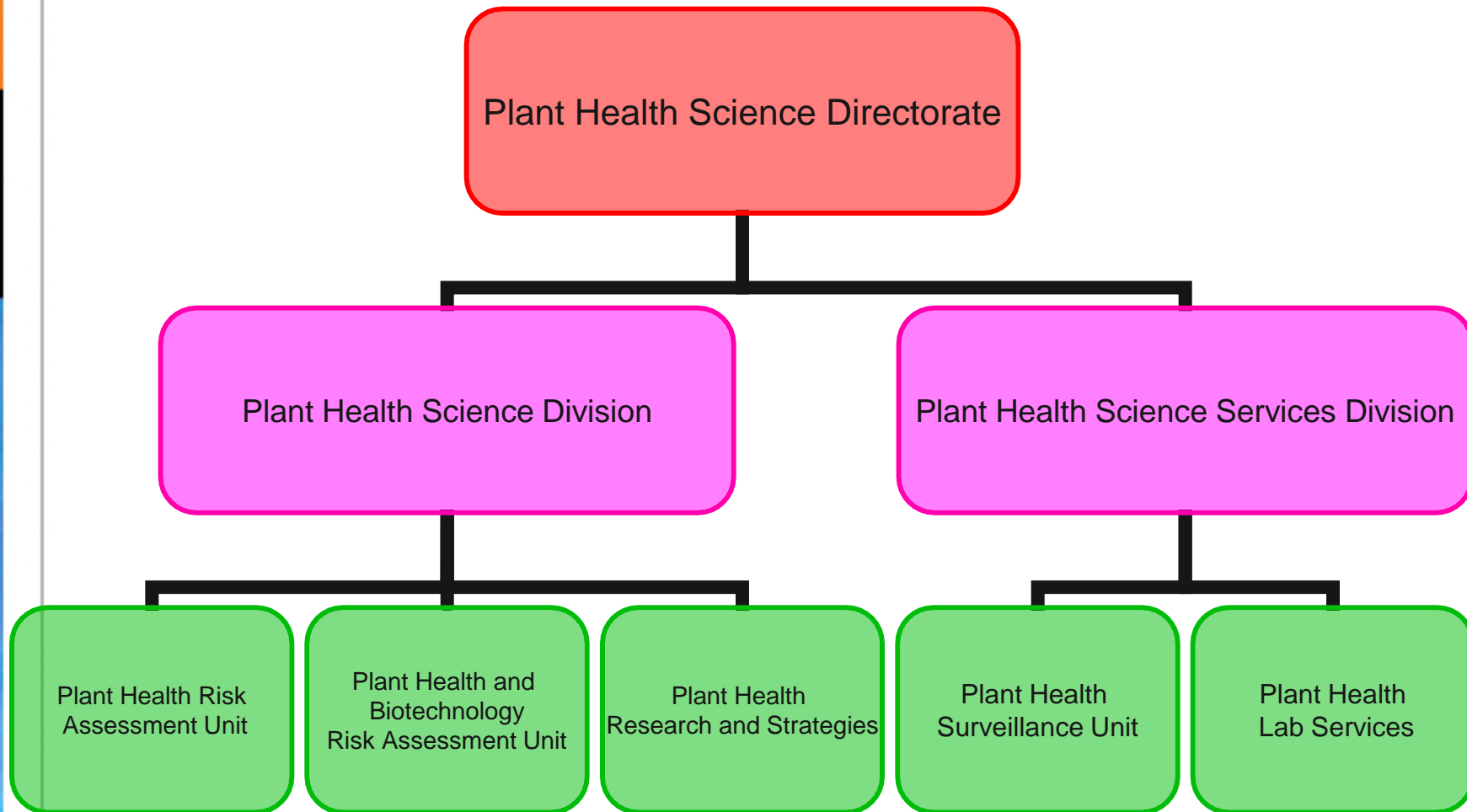
- CFIA's Plant Health Science Directorate
 - Plant Health Risk Assessment
 - Plant Health Surveillance
- Plant Health: Science to Policy
 - Plum Pox Virus
 - Asian Longhorned beetle
- Emergency management

CFIA's Plant Protection Program

To prevent the introduction and spread of plant pests of quarantine significance, to detect and control or eradicate designated plant pests in Canada.



Science within the CFIA



Plant Health Risk Assessment Unit

Risk Assessments

Commodity-based

- To identify potential pests of concern for imports
- Aid in establishment of plant quarantine import requirements

Pest-based

- To guide agency in determining appropriate course of action when a specific pest is found
- Critical in stakeholder, partner and international negotiations

Review of Applications for permits to import living organisms

- Provide recommendations to Import Permit Office for issuance of import permits

Plant Health Risk Assessment Unit

Science Advice

1. Responding to new pest interceptions or infested products or pathways;
2. Explaining CFIA's reasons for import, export or domestic requirements for plants or plant products;
3. Certifying plant products for export from Canada;
4. Developing or supporting Canadian position during international or bilateral negotiations over plant quarantine import requirements;
5. Recommending pest treatments or disposal methods when infested commodities are detected;
6. Environmental scanning for identification of new information of potential significance to the CFIA.



Plant Health Risk Assessment Unit

Science Information

- Technical documents and facts sheets

- Communicate plant pest information to stakeholders, trading partners and general public
- Plant Health Early Warning System
- Science Intelligence Report
- Science Scan

- Compilation of pest information to be posted to the NAPPO and/or IPPC websites



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November 6, 2008

Science Scan 06-2008

**Canadian Food Inspection Agency
SCIENCE SCAN**



Published by the Science Strategies Directorate, CFIA

BACKGROUND: CFIA Science Strategies Directorate staff routinely scan external publications or any new information available from external sources to identify information that might be of possible regulatory significance or interest to Canada's national animal or plant health staff. The Science Scan was developed by the CFIA as a mechanism to highlight, raise awareness and share significant new information related to animal and plant health, such as information on new, emerging or re-emerging pathogens or pests.

CONTENTS

PLANT HEALTH ARTICLES:	ANIMAL HEALTH ARTICLES:
<ol style="list-style-type: none"> 1) First Report of Tobacco Rattle Virus Causing Corky Ringspot in Potatoes Grown in Minnesota and Wisconsin 2) Detecting Nonculturable <i>Ralstonia solanacearum</i> in Asymptomatic <i>Pelargonium</i> spp. 3) First Report of Ash Dieback in Norway 4) Beetle-fungus Infestation Threatens Black Walnut (<i>Juglans nigra</i>) Trees 5) Multiple Strategies for Cold Weather Survival by the Pine Sawyer Beetle (Coleoptera: Cerambycidae) 6) Range Expansion of the Lesser Yellow Underwing, <i>Noctua comes</i> Hübner, [1813] in Canada. New incursion into Ontario from Western North America or a New Introduction from the Palearctic? 7) The Ability of Asian Longhorned Beetle to Attack Healthy Living Trees Explained 	<ol style="list-style-type: none"> 8) Prion Infected Meat-and-Bone Meal is Still Infectious after Biodiesel Production 9) Excretion of Transmissible Spongiform Encephalopathy Infectivity in Urine 10) Identification of Disease-Induced Biomarkers in the Urine of BSE-Infected Cattle 11) Improved Diagnosis for Nine Viral Diseases Considered Notifiable by the OIE 12) Small Hive Beetle Infestation (<i>Aethina tumida</i>), Canada 13) The Deadly Dozen: Wildlife Diseases in the Age of Climate Change 14) Over-wintering Mechanisms of Bluetongue Virus 15) Seroprevalence of <i>Trichinella</i>, <i>Toxoplasma</i>, and <i>Salmonella</i> in Antimicrobial-Free and Conventional Swine Production Systems 16) Toxinotype V <i>Clostridium difficile</i> in Humans and Food Animals




Plant Health Surveillance Unit

- Plans, coordinates and administers national survey program
- Designs new surveys and refines survey techniques and tools
- Provides training and technical support for operational staff
- Liaise with other departments, industry and external parties


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EMERALD ASH BORER



EXIT HOLE
ACTUAL SIZE

www.inspection.gc.ca/pests



EXIT HOLES
LARVAL GALLERIES
ASH DECLINE
Woodpecker Feeding

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Use without permission is prohibited Report NEW Sightings 1-866-463-6017



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ASIAN LONGHORNED BEETLE

Report ALL Sightings 1-800-442-2342



EXIT HOLE



EXIT HOLE
EGG LAYING SITE
FRASS

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Surveillance

- To maintain “pest-free” status of an area
- To detect new populations of quarantine pests
- To delimit populations of quarantine pests with limited distributions in Canada
- To provide information in support of regulatory programs i.e. import, export, domestic and emergencies
- To provide data for science-based regulatory decisions including new policies and inspection programs

CFIA Survey Prioritization Process

- Methodical approach implemented to reflect recommendations of the 2008 OAG Report
- Each commodity section evaluates and ranks proposed surveys
- Cross-commodity evaluation and ranking process identifies key priorities
- Final survey plan represents a systematic prioritization of survey needs between Science and Programs

Plum Pox Virus

- Serious plant disease that can drastically reduce yields in susceptible *Prunus*
- Transmitted from infected trees by aphids, grafting or budding
- PPV-D detected in Canada in 2000
 - Three year delimitation survey conducted to determine extent and feasibility of eradication
 - PPV eradication program initiated in 2004



Policy to Prohibit
Propagation

Treatment
Requirements

Movement
restrictions

Virus Titre

PPV in
Canada

Virus
Incidence

Targeted
Sampling

International Expert
Panel
AAFC
OMAFRA
CFIA
Scientific Literature

Host
Susceptibility

Aphid Dispersal &
Spread

PPV
Transmission

Aphid Control

Survey & Sampling
Protocols

Removal
Policies

Best Management
Practices

**D-08-04: Plant Protection Import Requirements
for Plants and Plant Parts for Planting:
Preventing the Entry and Spread of Regulated
Plant Pests Associated with the Plants for
Planting Pathway**

Plum Pox Virus Infested Places Order, 2008

**D- 99-07: Policy for Importation from the United
States and Domestic Movement of Plum Pox Virus
(PPV) susceptible *Prunus* Propagative Plant
Material**

**Plum Pox Virus Monitoring and Management
Program**



Asian Longhorned Beetle

- Exotic wood boring beetle that attacks and kills a wide range of deciduous hosts
- Emergency Management:
 - Pest risk assessment
 - Emergency response plan
 - Simulation exercise
 - Information exchange with partners
 - National surveillance
- First detected in Canada in 2003: Toronto-Vaughan
- Consultative sub-committees (Operations, Science and Communications) of leading experts were established to:
 1. Provide co-operative guidance
 2. Direct the eradication activities
 3. Provide management recommendations



D-11-01: Phytosanitary Requirements for Plants for Planting and Fresh Branches to Prevent the Entry and Spread of *Anoplophora* spp.

D-11-05: Phytosanitary Requirements for Non-Manufactured and Non-Propagative Wood Products to Prevent the Introduction from the Continental United States and Spread Within Canada of the Asian Long-horned Beetle, *Anoplophora glabripennis* (Motschulsky)

D- 98-08: Entry Requirements for Wood Packaging Material into Canada

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

D-01-12: Phytosanitary Requirements for the Importation and Domestic Movement of Firewood

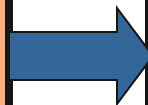
Asian Long-horned Beetle Infested Place Order

Science Subcommittee

Canadian Forest Service
Ontario Ministry of Natural
Resources

Canadian Academia
City of Toronto Forest
Health

USDA Agricultural
Research Service
USDA Forest Service



Scientific recommendations
Survey methodology
Survey intensity
Sampling procedures
Host suitability and removal
guidelines
Detection efficacy data
Rate and direction of spread
Novel detection tools
Current scientific information
Identify and coordinate
scientific research projects
Knowledge gaps
Treatment options



Science Improving Surveillance...

Density and location of simulated signs of injury affect efficacy of ground surveys for Asian longhorned beetle

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Michael T. Smith

United States Department of Agriculture, Agricultural Research Service, Beneficial Insects Introduction Research Laboratory, 501 South Chapel Street, Newark, Delaware 19713, United States of America

Chuck Jones

Great Lakes Forestry Centre, Canadian Forest Service, Natural Resources Canada, 1219 Queen Street East, Sault Ste. Marie, Ontario, Canada P6A 2E5

Mary Orr, Ben Gasman

Canadian Food Inspection Agency, 1124 Finch Avenue West, Unit 2, Toronto, Ontario, Canada M3J 2E2

Abstract—Surveys for Asian longhorned beetles, *Anoplophora glabripennis* (Motschulsky)

(Coleoptera: Cerambycidae) currently rely upon visual examination of trees to detect signs



Recent Plant Health Emergencies



2003

CFIA Emergency Plans:

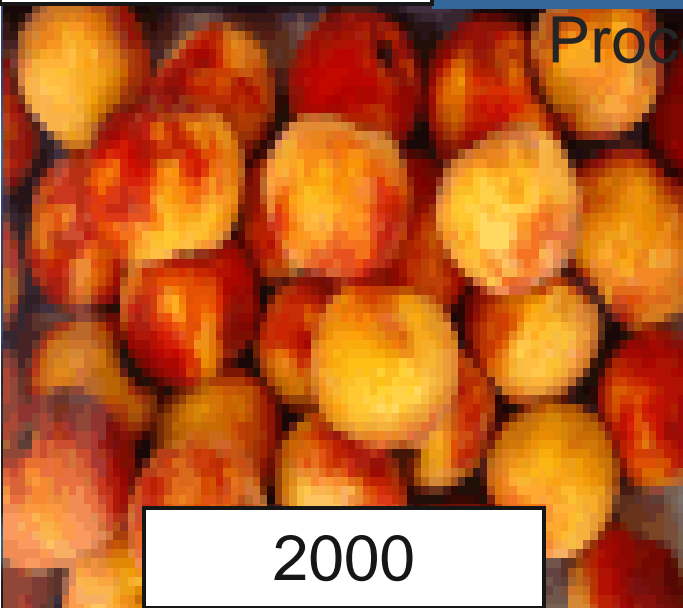
CFIA Emergency Response Plan

Functional Plans

Hazard-specific Plans

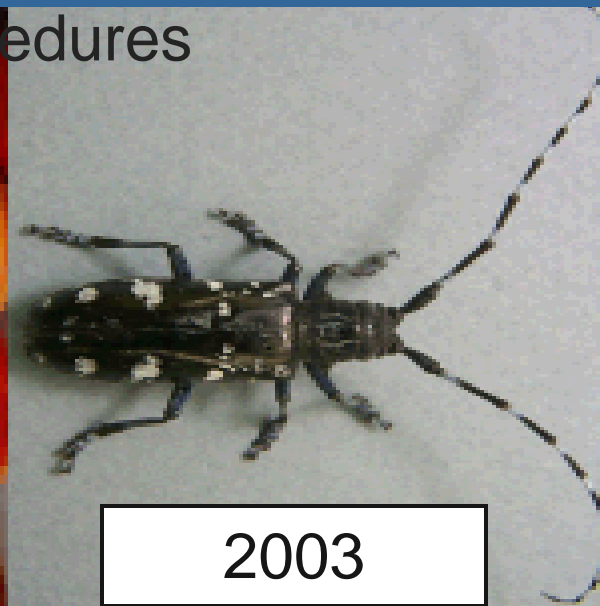


2006 & 2007



2000

Procedures



2003



2002

Emergency Management within the Plant Health Program

Prevention

- Risk analysis
- Environmental scanning
- Import restrictions
- Policies

Management

- Plant health emergency simulations
- Incident command structure training initiatives
- Early detection/pathway surveys
- Research on novel detection tools

Mitigation

- Control/containment zones
- Eradication policies
- Enact incident command structure
- Research and collaboration

Response

- Science advisory panels
- Surveillance
- Regulated areas

Recovery and restoration

- Monitoring
- Review and update policies
- Best management practices

Canada