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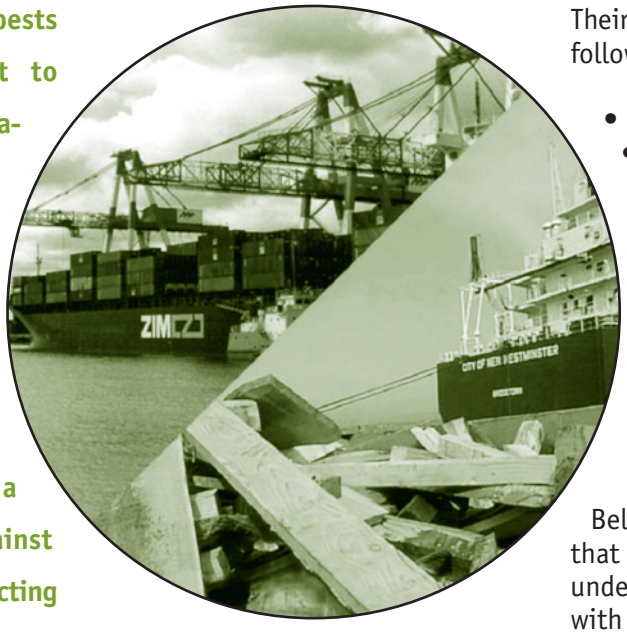
Branching out

from the Canadian Forest Service
Laurentian Forestry Centre

KEEPING AN EYE OUT
FOR EXOTIC FOREST PESTS

The spread of exotic forest pests represents a growing threat to Canada's forests and its international trade. Between 1981 and 1995, insects and diseases, both native and exotic[1], damaged approximately one billion cubic metres of timber in Canada. Detecting and identifying exotic pests is a crucial part of guarding against the dangers they pose and protecting forest resources.

In Canada, a number of federal agencies have joined forces to protect the health of our forests[2]. As part of this group, the Laurentian Forestry Centre of the Canadian Forest Service (CFS–LFC) collaborates with the Canadian Food Inspection Agency (CFIA) to prevent the introduction of new pest species and to halt the spread of those that are already present.



Wood dunnage and wood packaging arriving by boats are two of the main means of introduction of exotic pests.
Photo: ACIA

Their collaborative efforts include the following:

- evaluating research needs;
- conducting studies to learn more about the biology of pest species;
- developing tools for detecting, identifying and monitoring pests;
- giving advice and participating actively on expert panels;
- training CFIA inspectors.

Below are some examples of projects that the CFS–LFC has carried out under its collaborative agreement with the CFIA.

Identifying new exotic pests

Wooden dunnage and packing materials used to import goods represent a primary route of entry for exotic fungi. When CFIA inspectors find signs pointing to the presence of a fungus, they call on CFS–LFC researchers to help in identifying it. Another aim of this project is to

1 Canada does not compile separate data on exotic pests. Losses due to exotic forest pests in the United States are estimated to be about $4 billion per year.
2 They include the Canadian Food Inspection Agency, the Canadian Forest Service, Agriculture and Agri-Food Canada and the Pest Management Regulatory Agency.

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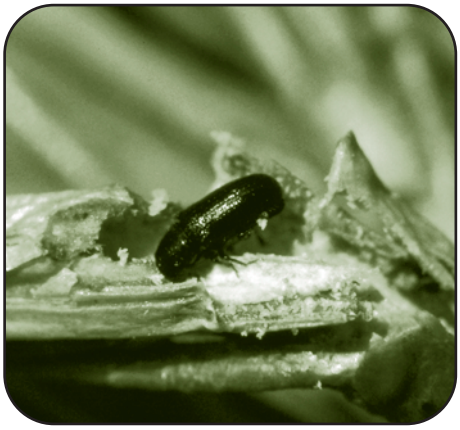
establish a collection of potentially harmful exotic fungi that can serve as a reference tool for dealing with future introductions.



Pine shoot beetle (adult).
Photo: S. Passoa, USDA

Detecting invisible pests

Diagnostic laboratories are making ever-greater use of molecular diagnostics. These methods permit the detection of pests that cannot be seen with the naked eye and provide information such as the strain of pathogen involved and its origin. A first diagnostic kit, SCLEROTEST™, was introduced in 2002 for use in detecting the fungus that causes scleroderris canker and determining whether the European (exotic) race or the American (indigenous) race is present. The CFIA has validated a second kit, which will be used to detect sudden oak death (*Phytophthora ramorum*). Work is currently under way to develop diagnostic tools for the brown spruce longhorn beetle and for rusts.

Checking the spread of pests

Once a pest has become established, research efforts must be directed at finding ways to halt its spread and identifying the associated impacts on forest resources. The pine shoot beetle, detected in Quebec in 1998, poses a threat to plantations and natural stands of pines across the province. A team of researchers tested an approach that involved spraying water on pine logs in sawmill yards in order to combat this insect pest. The tests showed that, while spraying water on logs does not keep the adult beetles from emerging, it guards against future colonization by pine shoot beetles and so helps to maintain wood quality.

Over the long term, continued research will help us learn more about the biology of exotic forest pests and further the development of effective control methods. A knowledge-based approach is essential for supporting CFIA regulations that protect forests.

CFIA

The CFIA's Plant Health Division is responsible for developing directives aimed at preventing the introduction and spread of regulated pests in Canada.

USEFUL LINKS:

Canadian Food Inspection Agency
www.inspection.gc.ca

Alien forest pests (Canadian Forest Service)
www.nrcan-rncan.gc.ca/cfs-scf/science/context_pests/index_e.html

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