

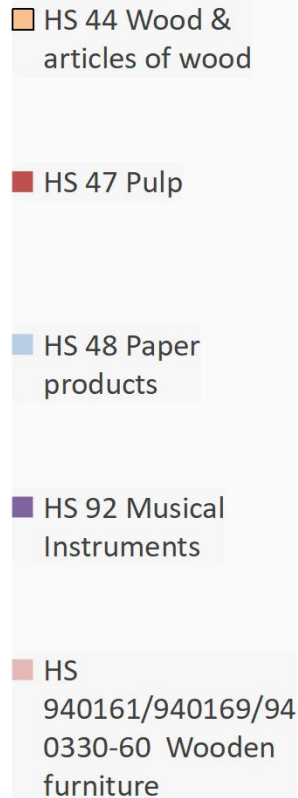
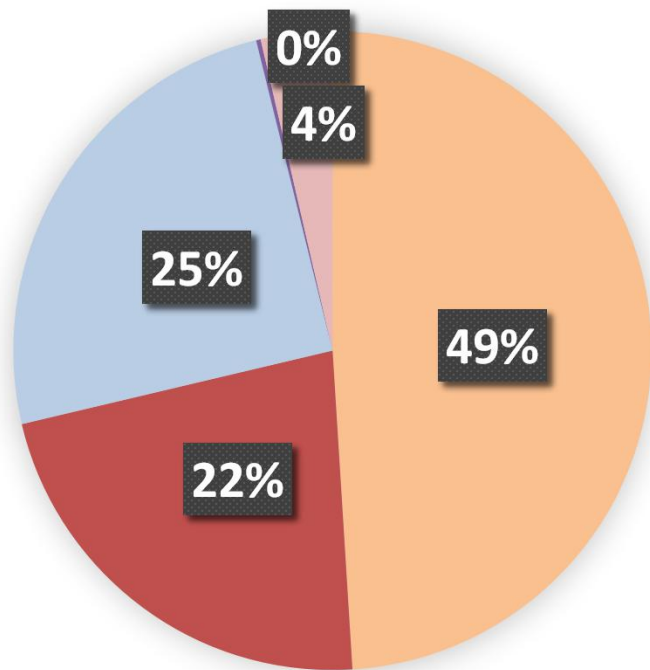
# A science-based approach to supporting legal wood product imports in Canada

February 24, 2019

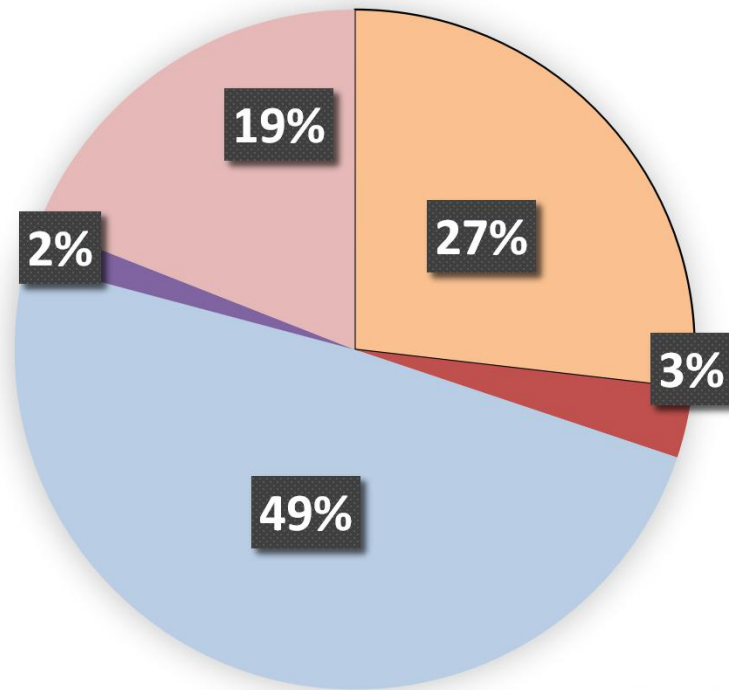


# Canada's exports and imports

Exports of Forest Products 2017  
Total CAD \$38 B



Imports of Forest Products 2017  
Total CAD \$17.4 B



Source: Statistics Canada

# Canadian Legislation

*Wild Animal and Plant Protection and Regulation of  
International and Interprovincial Trade Act (WAPPRIITA)*

WAPPRIITA regulates:

Import and Export of Wildlife

Wildlife = Animals **and** Plants

Applies to CITES **and** non-CITES species

# Wildlife Enforcement Directorate (WED)

- Environment and Climate Change Canada
- 68 operational field officers + 30 in training
- 18 offices across Canada
- 5 acts to enforce
- WAPPRIITA = 35% of WED's workload
- *CITES-listed wood is among priorities for 2019-2020*



# A shared responsibility

## Environment and Climate Change Canada

- Legislative and regulatory responsibility
- Enforcement, compliance checks and promotion
- Science to support enforcement
- Communications & outreach

## Natural Resources Canada Canadian Forest Service (CFS)

- Encouragement of voluntary compliance
- Science to support strategic research
- Support and outreach

*Compliance  
promotion*

*Communication*

*Outreach  
Science*

Canada Border  
Services Agency

Canadian Food  
Inspection  
Agency

Global  
Affairs  
Canada

# Four key priorities to move forward

1. Legislative/  
Regulatory  
Changes

2. Enhancing  
Compliance and  
Enforcement Efforts

3. Increasing and  
Developing Science

4. Engaging in  
Communications  
and Outreach

# Officers need tools for quick & easy decision-making

WED Intelligence  
analysis

Focus efforts through  
risk analysis



Tools for  
easier wood  
ID

# Officers need tools for quick & easy decision-making

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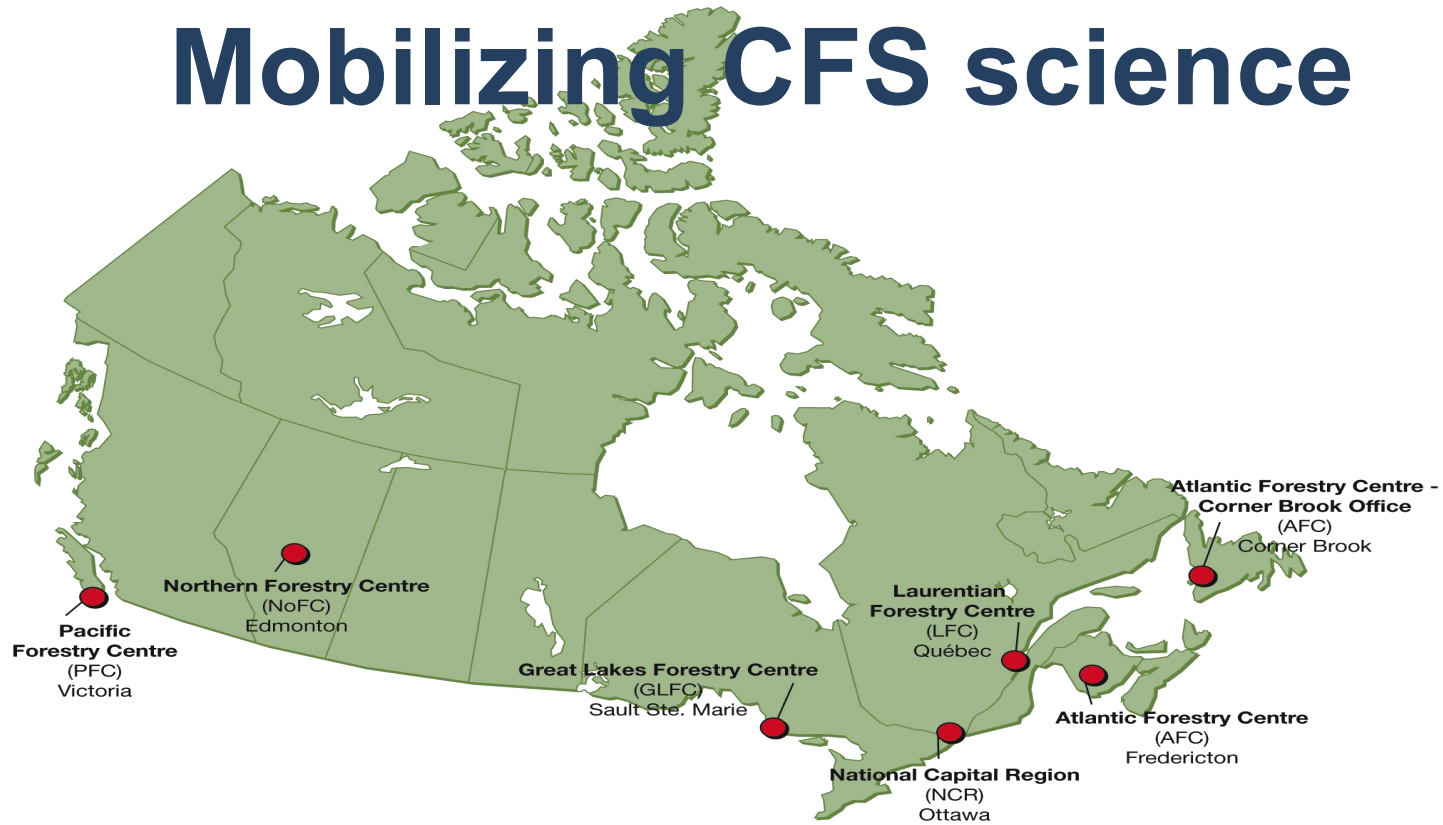


Tools for  
easier wood  
ID

Need to build up Canadian capacity in  
wood identification

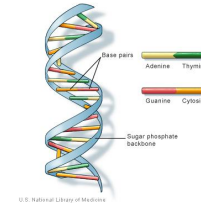
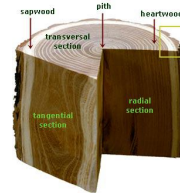


# Mobilizing CFS science



# CFS is working in 3 wood identification techniques

- Wood Anatomy (macroscopic & microscopic)
- Chemical Analysis
- Genomics



U.S. National Library of Medicine

# Developing the CFS Timber ID research program

Workshop  
Spring  
2018

- Interdepartmental
- International experts
- Identify the needs
- Brainstorm on science solutions

Project  
Proposals

- Interdepartmental teams
- 250,000 \$CAD

Start 2-  
year  
projects

8 Projects



# Our shared vision...

## Timber Identification Center of Expertise

### *Developing Capacity and Building Networks*

1. Developing technical, enforcement and legal capacity and expertise for timber ID
2. Engage internationally
3. Contribute to the international Bur Oak Project

### *Constructing Tools and Methods*

4. Develop Mass-spectrometry (DART) capacity
5. Genomics of Canadian tree species to develop identification methods

### *Creating and Refining Collections and Reference Databases*

6. CFS/CWFC wood samples collection
7. Wood core collection from national inventories

### *Supporting Enforcement Activities*

8. Wood identification courses and materials for enforcement and customs officers

# ... through 8 collaborative projects

- 25 colleagues
  - Enforcement officers, Enforcement Analysts, Scientists, Policy analysts, etc.
- 3 departments:
  - Natural Resources Canada
    - Canadian Forest Service: 5 research centers + trade and science & policy groups
    - Geological Survey of Canada: 1 lab
  - Environment and Climate Change Canada- WED: Enforcement, Intelligence, Policy+ Pacific Yukon Laboratory for Environmental Testing (PYLET)
  - Canada Border Services Agency: 1 lab

# Science as a tool for enforcement



Training  
Expertise

Database of reference specimens

Wood anatomy

Genomics & Taxonomy

Xylotrons

DART

Wood sample collection

Legend:

WED

CFS

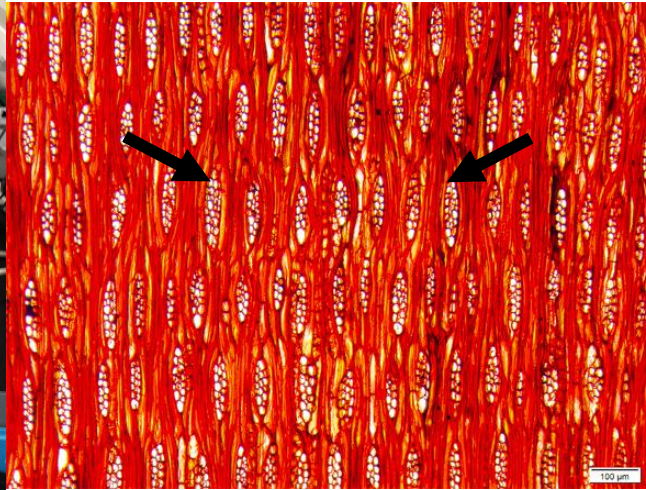


# Wood anatomy

CFS labs have expertise and equipment for wood anatomy identification

- Dr. Danny Rioux
- Dr. Isabelle Duchesne

*Dalbergia nigra* (Brazilian rosewood)



Source: D. Rioux

DART

Xylotrons



- **Capacity-building through practical training**
  - May 2018, Vancouver, by CITES officer, Port of Rotterdam
  - March 2019, Québec City, by CFS wood anatomists
  - TBD 2019, by CFS wood anatomists
  - CFS Dr. Isabelle Duchesne attending Kew Gardens course, Feb 2019





# CFS/ CWFC Wood sample collection

- 3800 specimens, 730 genus with commercial potential
- Three-dimensional slices for most taxa
- Developing collaborations with other Canadian and international xylariums
- Curator: Dr. Isabelle Duchesne



# Genomics

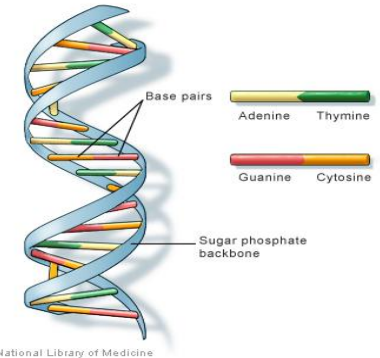
Dr. Nathalie Isabel & Dr. Julie Godbout

- Big data available from previous Genome Canada's project
  - e.g. *Pinus contorta* (lodgepole pine), *Pinus banksiana* (jack pine) and their hybrids
- Develop traceability tools and methods:
  - to identify species from small amount of DNA
  - to determine the geographic origin

Wood anatomy

DART

Xylotrons



# Beyond tools...

## *Developing Capacity and Building Networks*

1. Developing technical, enforcement and legal capacity and expertise for timber ID

2. Engage internationally

3. Contribute to the international Bur Oak Project

Course by Kew  
Gardens

Verify accuracy of wood  
ID in retail products

Workshop for prosecutors  
on WAPPRIITA

GTTN, FSC, WRI, and others

*Acer saccharum* (Sugar Maple)  
and more species

# CFS Timber ID research program: Challenges

- Coordination
- Communication
- CFS research portfolio
- Allocation of resources

# CFS Timber ID research program:

## Positive outcomes to date

- Good progress in a few years
- Increased collaboration within CFS, with other departments and others
- Demand for wood ID expertise
- A good example of science and policy integration
- *Everyone is enthusiastic about contributing concrete solutions to a good cause*

# Thank you!

# Gracias!

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Canadian Forest Service

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