

HISTORY OF FORESTRY IN CANADA

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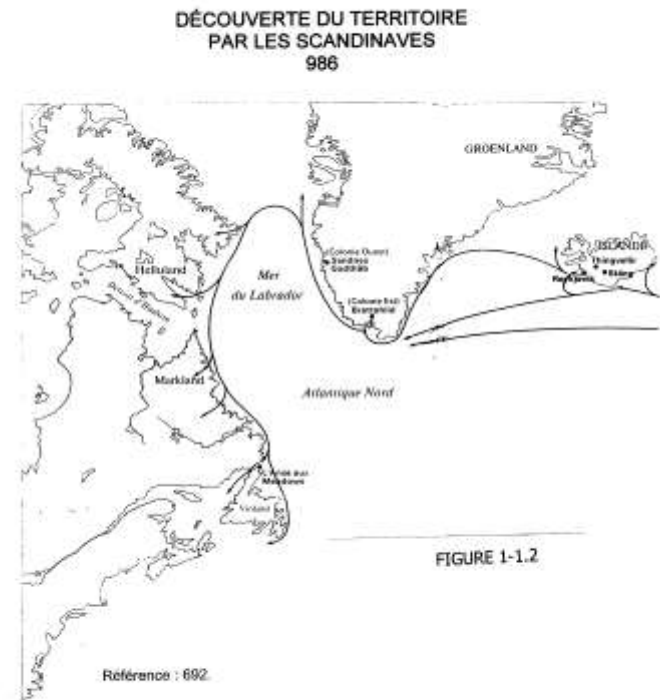
EVOLUTION OF FORESTRY

- AGROFORESTRY-1500's+
- FARM FORESTRY-1600's+
- COMMERCIAL FORESTRY-1700's+
- INDUSTRIAL FORESTRY-1800's+
- EXTENSIVE FORESTRY-1950's+
- MULTIPLE-USE FORESTRY-1970's+
- INTENSIVE FORESTRY-2000's+

NATIVE AMERICAN PERIOD

before 1534

- SCANDINAVIANS EXPLORED EASTERN PART OF NORTH AMERICA IN YEAR 966
- MANY EUROPEAN NATIONS OGLE AMERICA
- SOME NATIVES PRACTICED AGROFORESTRY



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FRENCH PERIOD

1534

- **FRENCH AND BRITISH SETTLERS TOOK POSSESSION OF THE TERRITORY (NEW FRANCE, NEW ENGLAND, NEW BRUNSWICK, NOVA SCOTIA, NEWFOUNDLAND and RUPERT'S LAND)**
 - FUR TRADE IN BEAVER
 - DEFORESTATION TO PRACTICE AGRICULTURE
 - SHIP BUILDING INDUSTRY: 200 units/year as of 1720 IN QUEBEC CITY
 - **FARM FORESTRY ON SEIGNEURIAL LAND**
 - **POPULATION: 65,000 FRENCH; 29,000 BRITISH**

NEW FRANCE AND NEW ENGLAND



EVOLUTION OF FORESTRY

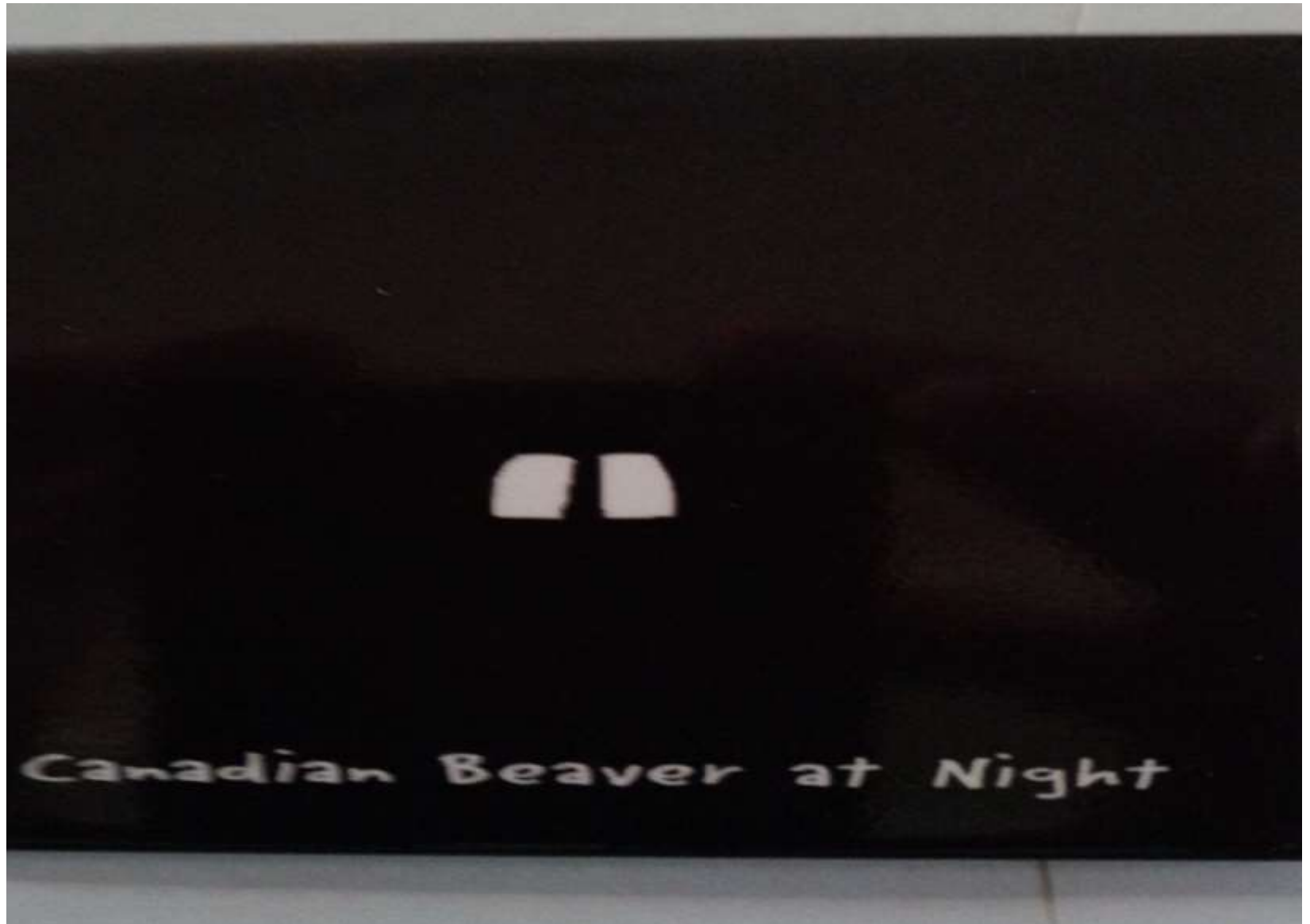
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BRITISH PERIOD

(1763)

- **THE BRITISH TOOK CONTROL OF THE ST.LAWRENCE RIVER**
- **220 SEIGNEURIAL LANDS WERE ABOLISHED (4 Mha)**
- **BORDER: CANADA-AMERICA WAS SET**
- **DECLINE OF BEAVER POPULATION**

TRAPPING THE BEAVER



BRITISH PERIOD

- **EXPORT OF PINE MASTS FOR ROYAL NAVY, AND SQUARE TIMBER**
- **HEYDAY OF LUMBER INDUSTRY IN THE EAST (4,500 SAWMILLS); BIRTH IN THE WEST**
- **BIRTH OF PAPER INDUSTRY**
- **POPULATION: 1M FRENCH; 2M BRITISH; 150,000 NATIVES**

EVOLUTION OF FORESTRY

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Forest Regions of Canada



- FOREST REGIONS**
- BOREAL - PREDOMINANTLY FOREST
 - BOREAL - FOREST AND BARREN
 - BOREAL - FOREST AND GRASS
 - SUBALPINE
 - MONTANE
 - COAST
 - COLUMBIAN
 - DECIDUOUS
 - GREAT LAKES - ST. LAWRENCE
 - ACADIAN
 - GRASSLANDS
 - TUNDRA

- PRINCIPAL TREE SPECIES**
- White spruce, black spruce, balsam fir, jack pine, white birch, trembling aspen
 - White spruce, black spruce, tamarack
 - Trembling aspen, willow
 - Engelmann spruce, alpine fir, lodgepole pine
 - Douglas-fir, lodgepole pine, ponderosa pine, trembling aspen
 - Western red cedar, western hemlock, Sitka spruce, Douglas-fir
 - Western red cedar, western hemlock, Douglas-fir
 - Beech, maple, black walnut, hickory, oak
 - Red pine, eastern white pine, eastern hemlock, yellow birch, maple, oak
 - Red spruce, balsam fir, maple, yellow birch
 - Trembling aspen, willow, bur oak

Kilometres
0 125 250


 Natural Resources Canada
 Canadian Forest Service

Ressources naturelles Canada
 Service canadien des forêts

CANADIAN PERIOD

1867

– FOREST ERAS:

- **1) THE LIQUIDATION ERA**
 - (1600-1900)
 - **LOGGING OF BEST TREES ONLY, OF LIMITED NUMBER OF SPECIES (WHITE OAK, WHITE PINE, DOUGLAS FIR, RED CEDAR)**
 - **DEFORESTATION TO BUILD ROADS, TO ESTABLISH TOWNS AND VILLAGES, TO GROW FOOD ON THE LAND**

CHARGEMENT DE BILLOTS
TIRÉ PAR DES CHEVAUX
DANS LA VALLÉE DE LA MATAPÉDIA
AU QUÉBEC

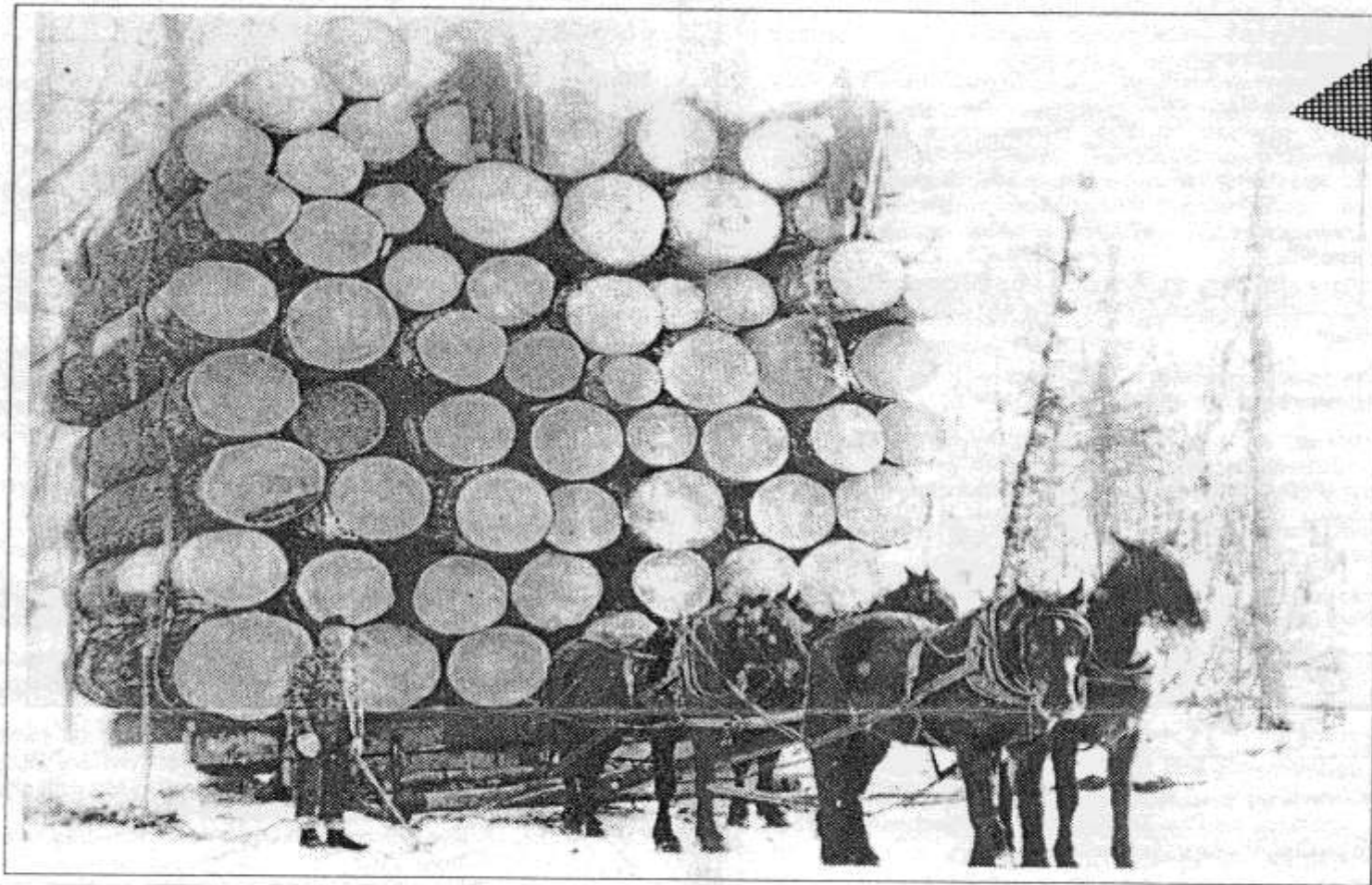


Figure 4-7.3

CANADIAN PERIOD

– FOREST ERAS:

- 2) THE CONSERVATION ERA

- (1900-1950)

- CREATION OF NATIONAL PARKS (37 Mha)

- CREATION OF MANY PROVINCIAL PARKS AND RESERVES

- CANADIAN FORESTRY ASSOCIATION

- CANADIAN SOCIETY OF FOREST ENGINEERS

- THREE FORESTRY SCHOOLS

- A NATIONAL FOREST CONGRESS-1906



EVOLUTION OF FORESTRY

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CANADIAN PERIOD

- FOREST ERAS:

• 3) THE FOREST MANAGEMENT ERA

– (1950-2000)

– THREE FOREST MANAGEMENT PERIODS

» SYFM PERIOD (1950-2000) AND EXTENSIVE FORESTRY

» INTEGRATED FOREST MANAGEMENT PERIOD (1970-2000) AND MULTIPLE-USE FORESTRY

» ECOSYSTEMIC FOREST MANAGEMENT PERIOD (1998-) AND INTENSIVE FORESTRY

CANADIAN PERIOD

-FOREST ERAS:

**4) THE SUSTAINABLE DEVELOPMENT ERA
(2000+) FOLLOWING THE BRUNDTLAND
REPORT**

**2011: CERTIFICATION OF FOREST
MANAGEMENT PRACTICES: 150 Mha**

» THE LARGEST CERTIFIED AREA IN THE WORLD

THE PRACTICE OF EXTENSIVE FORESTRY

- **1-FOREST RESOURCES INVENTORY**
 - 1937: ecological classification into eight forest regions-Halliday
 - 1951: first national forest inventory
 - Forest area: 417 Mha
 - 2000: total forest stock- 25 MMm³
 - 2010: managed forest- 229 Mha
 - AAC (2000): 234 Mm³/year; (2010): 206 Mm³/year

THE PRACTICE OF EXTENSIVE FORESTRY

2-DEFORESTATION

Still going on: 45,000 ha per year in Canada

- 40% for agricultural purposes
- 34% for mineral exploration
- **10% for forest roads**

THE PRACTICE OF EXTENSIVE FORESTRY

3-LOGGING

- 1900: harvest of 20 Mm³/year
- 2000: harvest of 200 Mm³/year on 1 Mha/year
- **COMPLETE MECHANIZATION OF HARVESTING-** between 1950-2000
 - operators now listen to music, talk on the phone while harvesting trees, day or night, twelve months/year



THE PRACTICE OF EXTENSIVE FORESTRY

4-REFORESTATION

- Before 1950: no worry about regeneration
- Until 1970: clear-cutting-slash burning-planting
Douglas-fir in the West (photo)
- In 1985: 25% of harvested area should be reforested
- **After 1985: reforestation of 650 M seedlings/year**
- 1950-2000: 12,4 MM trees planted
- In 2010: 56% of the area harvested in Canada was reforested



THE PRACTICE OF INTENSIVE FORESTRY

5-SILVICULTURE

- CIRCA 1970: APPLICATIONS OF A RANGE OF SILVICULTURAL TREATMENTS MAINLY TO SALVAGE WOOD TO BE LOST

- HERE THINNING OF WESTERN HEMLOCK:
 - 50 YEARS OF AGE, 450 m³/ha, Vancouver Island



THE PRACTICE OF EXTENSIVE FORESTRY

6-PROTECTION AGAINST FIRES

-NUMBER OF WILDFIRES:

- 5,000 to 10,000/year**
- LOSSES: 800,000 to 3,000,000 ha/year**
- 1920: WATCH TOWERS**
- 1930: AERIAL SURVEYS**
- 1960: WATER BOMBERS**
- 1990: EXPERT SYSTEMS**



THE PRACTICE OF EXTENSIVE FORESTRY

7-PROTECTION AGAINST INSECTS

- 1927: FIRST AIRBORNE OPERATION AGAINST INSECTS
- 1935: NATIONAL INVENTORY OF INSECTS STARTED
- 1950: DDT SPRAYED BY AIR
- 1960; Bt SPRAYED BY AIR
- After 1998: no more spraying allowed; salvage operations were organized
- Huge losses in western Canada

PROTECTION OF THE ENVIRONMENT

- 1980 VIOLENT PROTESTS AGAINST INDUSTRIAL USERS OF RESOURCES
- 1990 GREEN PLAN OF 10 MM\$ FOR HEALTHY ENVIRONMENT
- 1993: TSUNAMI OF CONSERVATION PROJECTS-TARGET: 12% OF LAND AREA
- 2012: **50 Mha FORESTS WERE PROTECTED FROM HARVESTS**

DEVELOPMENT OF FOREST INDUSTRIES

- **CONTRIBUTION OF THE FOREST INDUSTRY IN 2000:**
 - FOREST INDUSTRY PAID \$5.1 BILLION TO GOVERNMENTS
(PROVINCIAL 4 -NATIONAL 1)
 - EMPLOYEES IN THE FOREST INDUSTRY PAID \$4.4 BILLION

EXTERNAL TRADE OF FOREST PRODUCTS

- FREE TRADE AGREEMENT WITH THE USA (1989) MEXICO (1992) AND ICELAND(1999)
- SOFTWOOD LUMBER DISPUTE WITH THE USA (1980-2000)
- **IN 2000, CANADA PROVIDED 50% OF TOTAL WORLD EXPORTS OF WOOD, AND 56% OF NEWSPRINT**

EMPLOYMENT IN THE FOREST SECTOR

- IN 2001: **343 000** CANADIANS WERE DIRECTLY EMPLOYED IN THE FOREST SECTOR IN CANADA
- IN 2011: **233 900** CANADIANS ONLY WERE DIRECTLY EMPLOYED IN THE FOREST SECTOR IN CANADA AS A CONSEQUENCE OF THE ECONOMIC CRISIS;
- **DRAMATIC DROP OF 32% in 10 years**

CANADA IN 2000

- -Ten provinces-three territories
- -Second largest country in the world:
 - 900 Mha; 45% forest; 9% water (3 M lakes)
- -Population: 33 M people



THE GOLDEN YEARS OF FORESTRY IN CANADA 1947-2000

- 1947-GATT
- 1949-First Forest Act
- 1949-2000-FRDA's in every province
- 1950-2000-Forest management era
- 1950-2000-Complete mechanization of all logging operations
- 1950-2000-Wide scale reforestation implemented
- 1951-First national forest inventory

THE GOLDEN YEARS OF FORESTRY IN CANADA

- 1960-1990 Fire protection with water bombers and expert systems
- 1970+ Wide scale silviculture implemented
- 1989-Free Trade Agreement
- 1990-2000 Green Plan for healthy environment
- 1993-Conservation tsunami-12% of land area
- 1995-River drive abandoned

CONCLUSION

- IN 2003, THERE WERE **6,600 FORESTERS** IN CANADA, AND THEY CONTRIBUTED IN ALL PHASES OF FORESTRY ACTIVITIES
- A HOST OF OTHER PROFESSIONNALS WERE ALSO INVOLVED

CONCLUSION

- **The practice of forestry in Canada went through dark ages between the year 1500 and 1950; through extraordinary ages between the year 1950 and 2000; through hell since then.**



INFORMATION

- TO BE IN TOUCH WITH ME:
 - gilbert.paille@videotron.ca
- TO BUY A COPY OF MY BOOK IN FRENCH:
 - http://www.pubgouv.com/histoire/histoire_foresterie.htm



EXOTIC SPECIES

- -Western Canada
- 1-Sitka spruce
- 2-Lodgepole pine
- 3-Western hemlock
- 4-Arbutus
- 5-Red alder
- -Eastern Canada
- 6-Jack pine
- 7-Japanese larch
- 8-Norway spruce
- 9-Balsam fir

