

2003 Annual Report for the Province of Alberta



Compiled by: Barb Thomas

- 1. Overview
- 2. Policy and Legislation
- 3. Statistics
- 4. Technical Information
- 5. Industry
- 6. Events
- 7. Reports and Publications
- 8. Key People

Overview

- New government standards & AI-Pac exemption
- Technical information
- Contact info

Policy and Legislation

- Alberta Forest Genetic Resources Council
 - advisory body to the Minister of Alberta Sustainable Resource Development regarding forest genetic resource management
 - composition includes scientific, biological, government and industry sectors

- website:

[http://www.gov.ab.ca/srd/forests/
fmd/genetics/](http://www.gov.ab.ca/srd/forests/fmd/genetics/)

New “Standards for Tree Improvement in Alberta”

-implemented May 1, 2003

- ownership and data access
- material collection, handling registration and storage
- Green Area deployment
- breeding, testing and verification
- production of controlled parentage materials

- website:

[http://www3.gov.ab/srd/forests/fmd/
manuals/index.html](http://www3.gov.ab/srd/forests/fmd/manuals/index.html)

AI-Pac exemption - 2003

- Order-in-Council approval for an exemption to the Alberta Foreign Ownership of Land Regulations
 - 30-year lease vs 20-years for private land
 - Land renewal possible for additional 30 years
 - Some restrictions on land quality and amount
 - Maximum land area 25,000 ha

Statistics

- **Natural stands** – nothing submitted
- **Plantations** – see industrial details
- **New inventory data** – nothing submitted
- **guesstimates of plantations** – see industrial details

Technical Information

- Industrial submissions
 - WBAC, AI-Pac
- Researchers submissions
 - Dr. Ted Hogg
 - Dr. Peter Blenis
 - Dr. Barb Thomas

WBAC – Western Boreal Aspen Corporation

- **Members:**

- Ainsworth Lumber, Daishowa-Marubeni International, Weyerhaeuser Company, and new member, Footner Forest Products

- **Revised mission statement:**

- To develop genetically improved aspen and to support research towards meeting companies' fibre needs. As a secondary focus, the corporation will also support poplar tree improvement

WBAC – Western Boreal Aspen Corporation

- **2002 achievements:**
 - Development of an effective and economical method of mass vegetative propagation for operational deployment, and
 - Refinement of flower induction treatments in the potted orchard
- **Breeding 2003:**
 - Completed 1/2 of first series of controlled crosses of native aspen, complete crosses in 2004
 - Anticipate progeny trial field planting in 2005

WBAC – Western Boreal Aspen Corporation

- Trial summary table:

Type	Total area (ha)	Number of trials	Number of treatments	Type of treatments
Clonal tests	10.13	14	201	Clones
Exotic & hybrid aspens	10.41	22	132	Families
Provenance trial	5.80	5	43	Seedlots
Silviculture trials	14.37	6	Various	Browse, density, & fertilizer

Al-Pac – Alberta-Pacific Forest Industries Inc.

- **Operations:**

- Poplar farms scaled up to 950 ha planted with 1200 ha planned for 2004 and annually till 2020.
- 25,000 ha land lease exemption with Alberta Government (see Policy section)

- **Research:**

- 90 new hybrid poplar crosses completed
- 97 aspen & hybrid aspen crosses completed
- Completed 14 experiments in poplar silviculture

Al-Pac – Alberta-Pacific Forest Industries Inc.

- **New supporting projects:**
 - Determination of carbon fluxes in different aged hybrid poplar plantations
 - 10-year evaluation of wood quality properties
 - Understanding public perceptions to planting hybrid poplars
- **Research personnel:**
 - Submitted new Industrial Research Fellowship application to NSERC for a growth and yield specialist for hybrid poplars

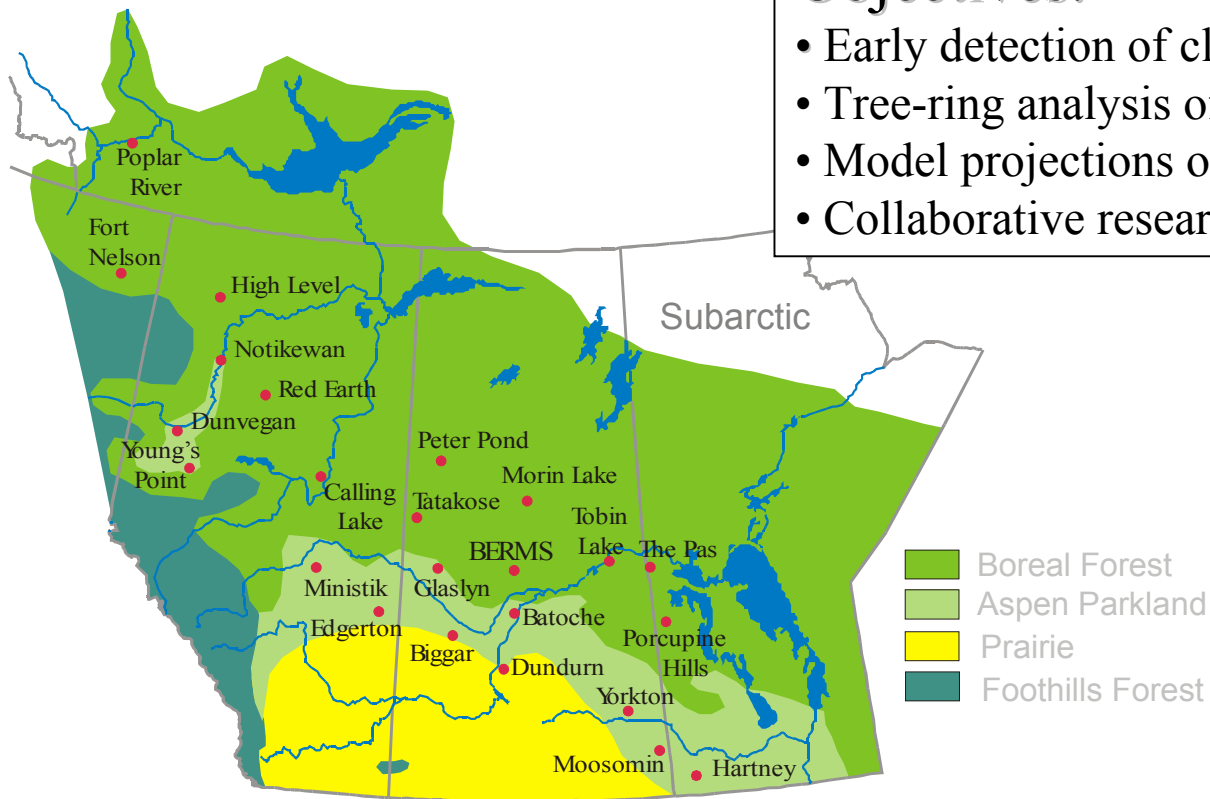
Dr. Ted Hogg

CIPHA

Climate Change Impacts on Productivity and Health of Aspen

Objectives:

- Early detection of climate change effects
- Tree-ring analysis of past growth responses
- Model projections of future impacts
- Collaborative research & monitoring framework



Aspen dieback in Alberta



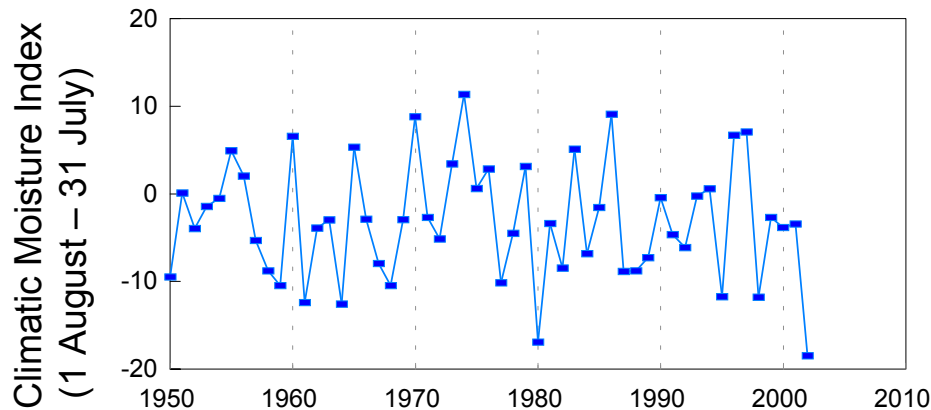
Aspen tree rings

Principal Investigators:

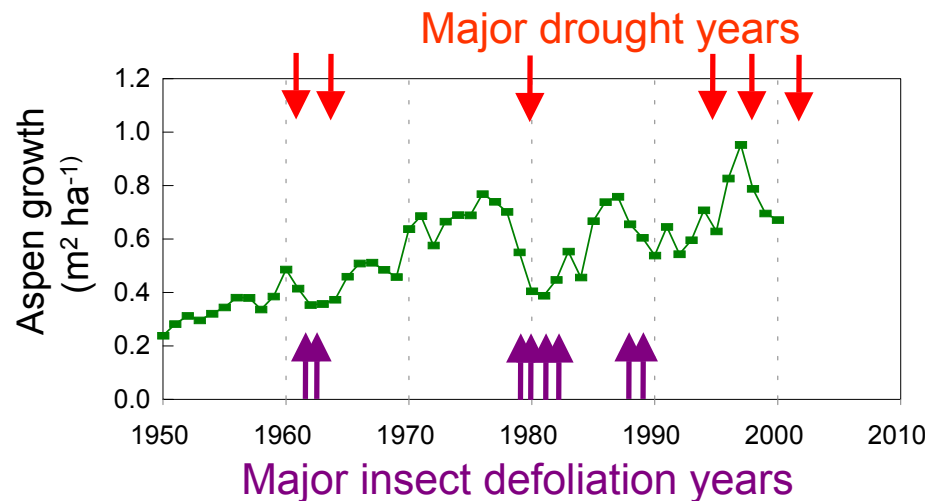
E.H. (Ted) Hogg, James P. Brandt, and B. Kochtubajda

Funding: CCAF, PERD, Mistik Management, CFS Networks

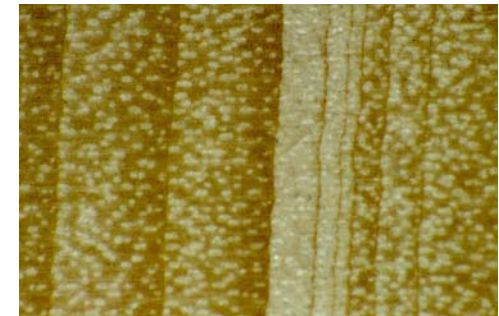
CIPHA study results: Factors affecting interannual variation in aspen growth using tree-ring analysis



(Left): Average values of the Climatic Moisture Index (P minus PET) from climate stations adjacent to each of the 24 CIPHA study areas.



Mean growth of 72 aspen stands across western Canada. Growth is expressed as increment in stand basal area from aspen alive in 2000



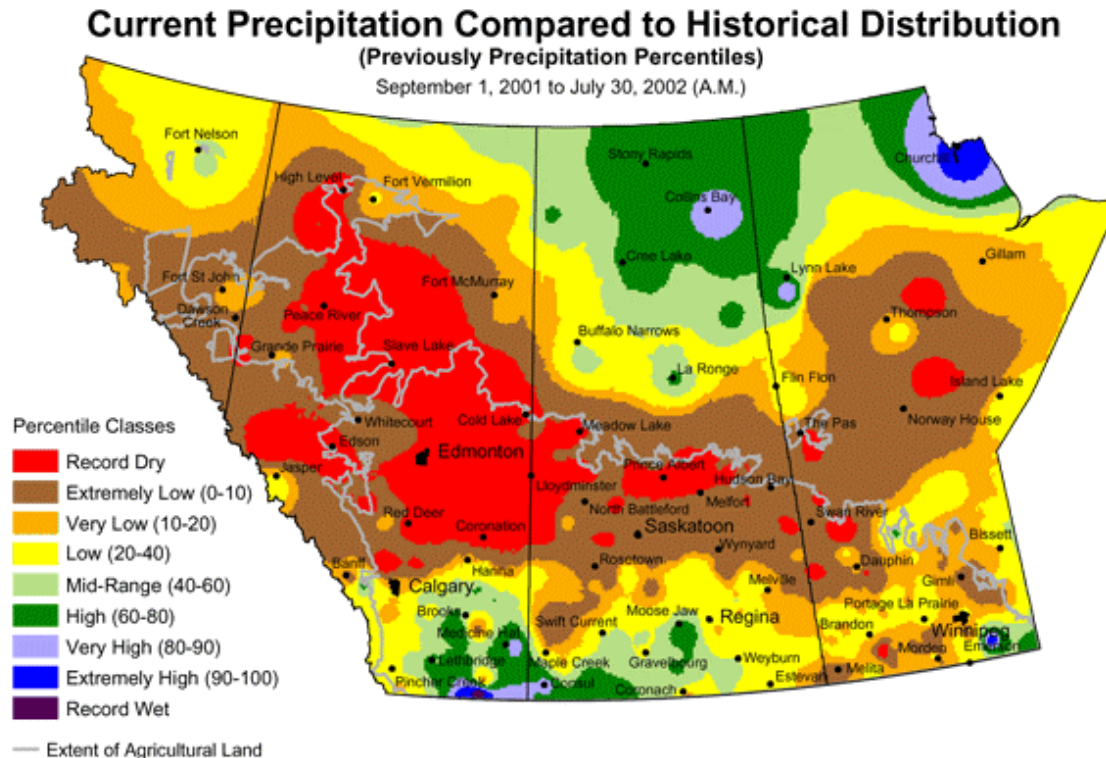
Aspen tree-rings



Forest tent caterpillar

Recent concerns

- *Warmer and drier than normal since 1998*
- *Record drought across region in 2001-2002*
- *Potential for large-scale dieback of aspen and poplar*



Prepared by PFRA (Prairie Farm Rehabilitation Administration) using data from the Timely Climate Monitoring Network and the many federal and provincial agencies and volunteers that support it.

From Agriculture and Agri-food Canada, Drought Watch web site at <http://www.agr.gc.ca/pfra/drought/default.htm> 30 July 2002

Dr. Peter Blenis

- **Jared LeBolders**: new MSc student
 - Examining the degree of specificity between isolates of *Mycosphaerella popularum*, the causal agent of Septoria canker and poplar clones.
 - The goal is to predict risk of catastrophic loss as a function of the number of clones deployed on the landscape.
 - Co-supervisors: Drs. Blenis & Thomas

Dr. Barb Thomas

- **Pamela Gullekson:** new MSc student
 - Examining public perception to the use of hybrid poplars in farming
 - Co-supervisors: Drs. Krogman & Thomas
- **Dr. Muhammad Rahman:**
 - Completed DNA work on risk hybridization project with Drs. Thomas & Dancik
- **CO₂ project:**
 - assessing the impact of raising aspen and poplars under elevated CO₂ and outplanting to field sites
 - Final year of project, publication in AgFor Systems special issue – 2004? Drs. Thomas & Macdonald

Events

Nothing submitted although PFRA held a series of meetings across Canada

- **Canada Greencover Shelterbelt Research Consultations conducted by PFRA regarding shelterbelt/agroforestry priorities**
 - Edmonton June 11th
 - Lethbridge June 12th

Reports and Publications

Hall, R.J., Fernandes, R.A., Hogg, E.H., Brandt, J.P., Butson, C., Case, B.S. and Leblanc, S.G. 2003. Relating aspen defoliation to changes in leaf area derived from field and satellite remote sensing data. *Canadian Journal of Remote Sensing* 29: 299-313.

Hogg, E.H., Hart, M., and Lieffers, V.J. 2002. White tree rings formed in trembling aspen (*Populus tremuloides* Michx.) saplings following experimental defoliation. *Canadian Journal of Forest Research* 32: 1929-1934.

Hogg, E.H., Brandt, J.P., and Kochtubajda, B. 2002. Growth and dieback of aspen forests in northwestern Alberta, Canada, in relation to climate and insects. *Canadian Journal of Forest Research* 32: 823-832.

Reports and Publications

DesRochers, A., and Thomas, B.R. 2003. A comparison of pre-planting treatments on hardwood cuttings of four hybrid poplar clones. *New Forests* 26: 17-32.

DesRochers, A. van den Driessche, R., and Thomas, B.R. 2003. Nitrogen fertilization of trembling aspen seedlings grown on soils of different pH. *Can. J. For. Res.* 33: 552-560.

Key People

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- Others??