An overview of the Annual Allowable Cut calculation in Québec : lessons and progress

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Building a forest for the future (1985)

Main conclusions :

- Harvest levels above the productive capacity of natural forest
- Short-sighted vision regarding multiple forests values (emphasis on wood)

Forest Act (1986)

New orientations :

- Timber Supply and Forest Management Agreements
- Maximum Sustained Yield
- Maintenance and enhancement of productive capacity
- Multiple use

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«Forest Alert» (1999)

Questioning our collective responsibilities :

Overcutting ?

Improperly harvesting ?

A pilot in the cabin ?

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Québec General Auditor (2002)

Gaps pinpointed :

- Biodiversity conservation
- Needs and expectation of concerned communities
- Demonstration of adequate harvest levels
- Accuracy of forest inventories
- Lack of sensitivity analysis

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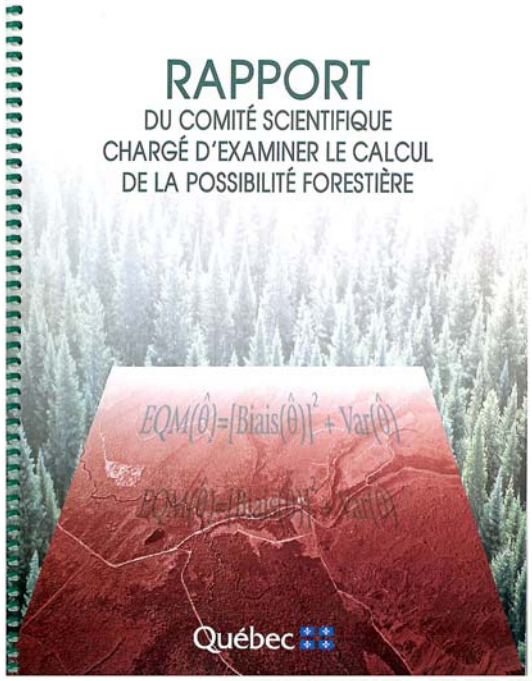
Scientific examination of AAC calculation (2004)

Improvement required :

- Forest inventory (sampling plan)
- Growth models
- AAC calculation process
- Sensitivity and precision



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Commission for the Study of Public Forest Management in Québec (2004)



Statement of facts :

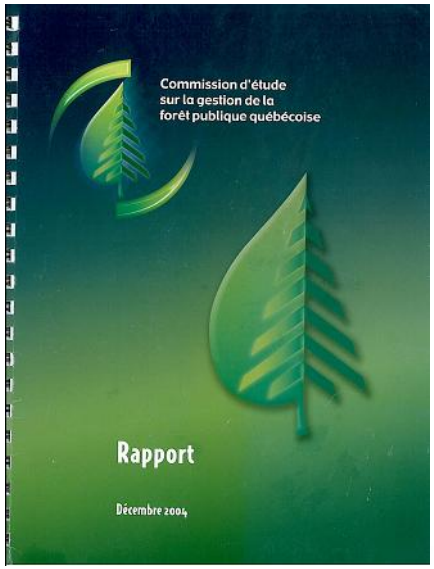
- Technological lags
- Deficient statistical rigour
- Shortcomings in the analysis of spatial and temporal aspects
- No sensitivity analysis

Commission for the Study of Public Forest Management in Québec (2004)



Main conclusions :

- Managing the forest as a whole through an Ecosystem-based Approach
- Allocating timber according to the quality and accessibility of available volumes
- Producing wood the right way, at the right place, at the right time



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Creation of the position of Chief Forester (2005)

Main responsibilities :

- Determining the annual allowable cut in public forest lands ;
- Advising decision makers and informing the population on the state of the forests and the results obtained in sustainable forest management of public lands.

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Summing up the basic concerns for AAC determination

- Reliability of inventory data
- Improvement of growth and yield models
- Modelling (optimization / spatial planning)
- Integration of economic values
- Enhancement of interested parties' participation and regional involvement
- Integration of natural perturbations

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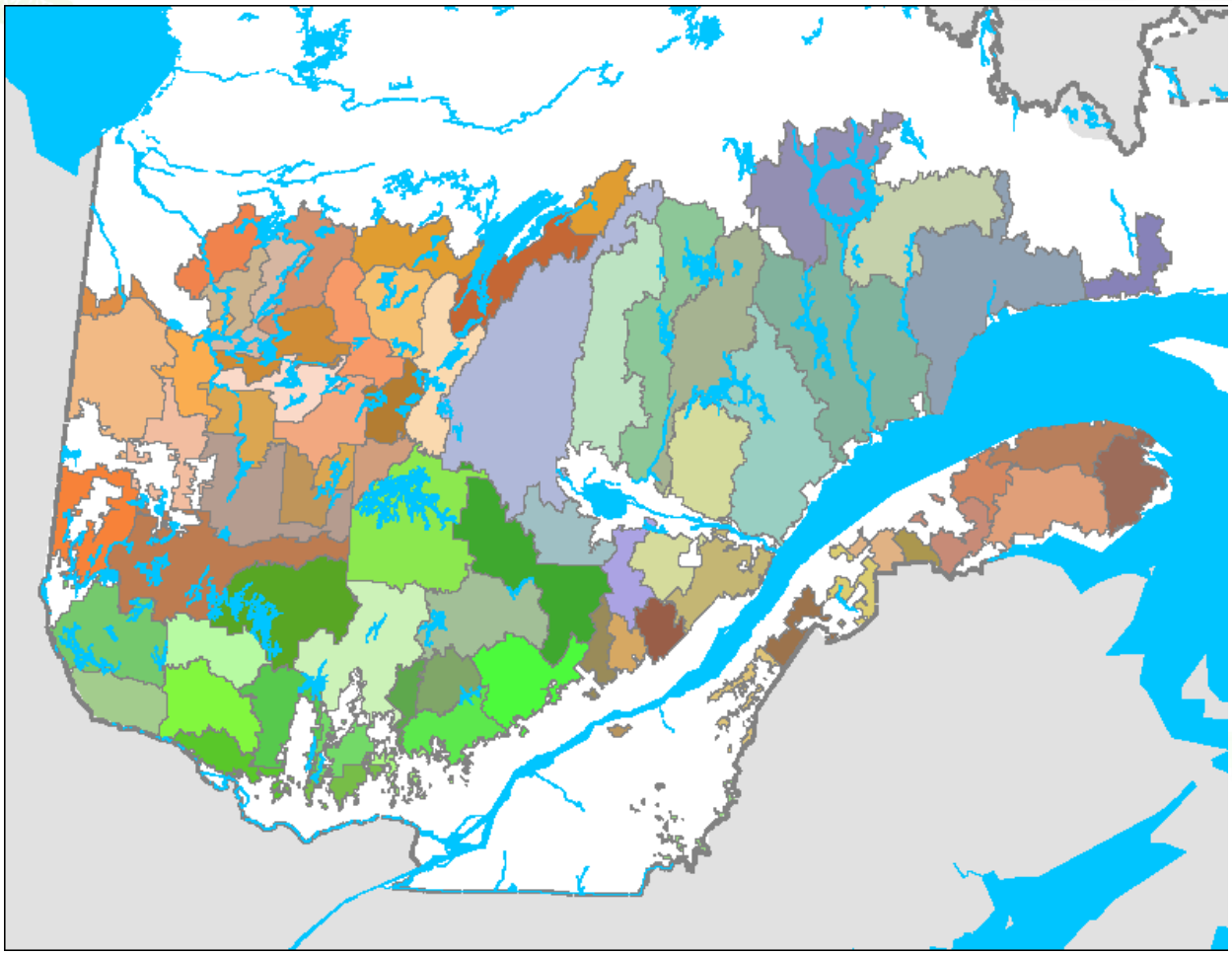
Public forest management units



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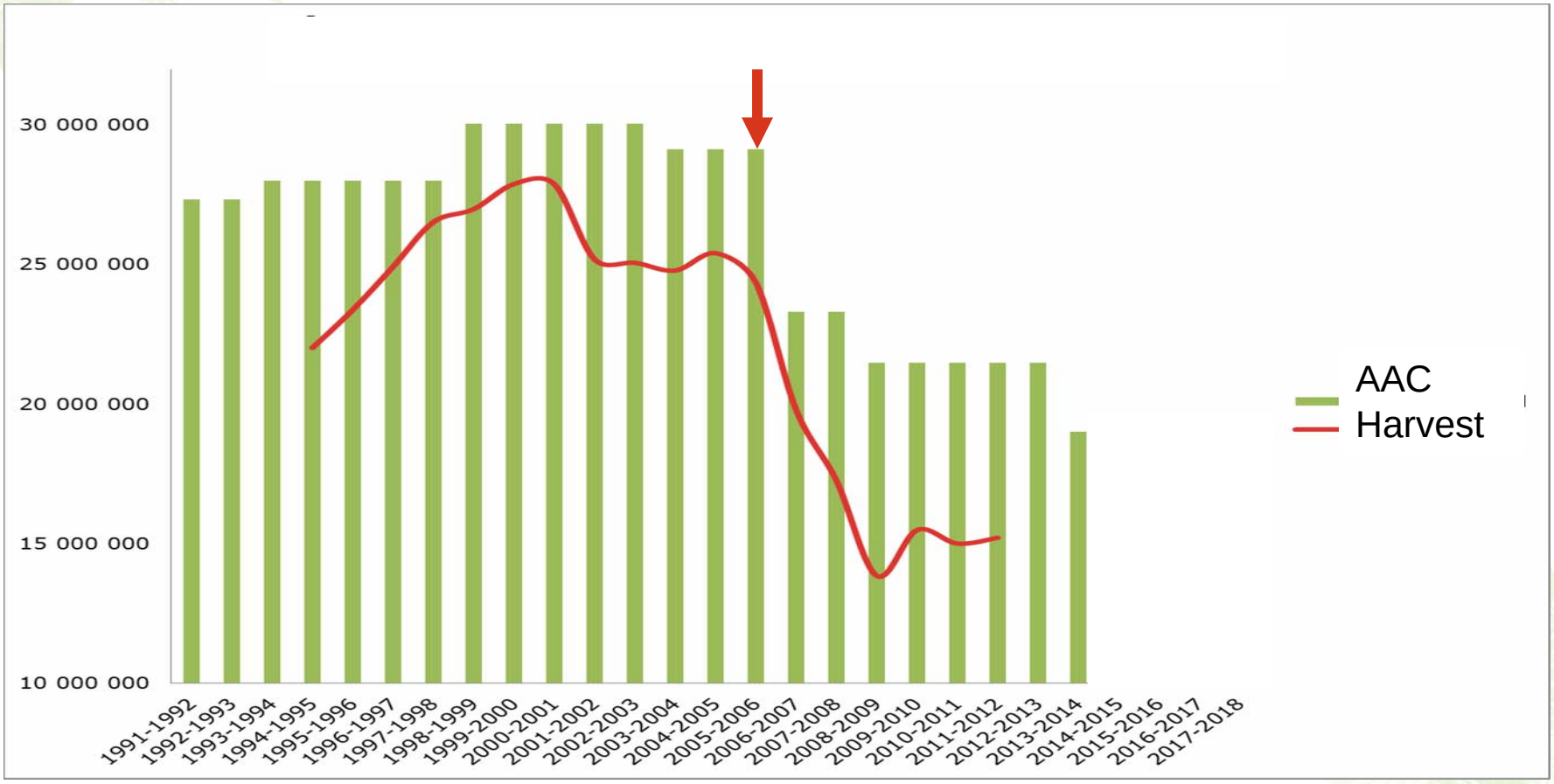
AAC and harvest level for the main coniferous species group



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1. Rigour and openness

- Quality management system
- Standardization of data and information management
- Availability of information (determination manual and analysis reports)

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2. Robustness and relevancy

- Use of the best available knowledge and continuous improvement (sound scientific basis)
- Consistency in the input --> output precision and reliability
- Appropriate management of uncertainties

3. Optimization and spatial planning

- From simulation to optimization : Woodstock
- From non-spatial to spatial planning : Stanley

4. Integration of values other than timber

Environmental :

- Protected areas
- Old growth forests
- Woodland caribou
- Wildlife habitat
- Watershed protection

Social and economic :

- First Nations
- Economic profitability
- Visual quality of landscapes

5. Improvement of economic returns



Comparison of two scenarios

Illustrative example

Scenario	PNV (Billions of $)	AAC x 5 years (Millions of cubic meters)
Volume maximization	**2,08**	**15,74**
Present net value (PNV) maximization	**2,33**	**15,74**
Gain for society	**+ 0,25**	

The future

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Outstanding issue

Since 1987, the annual allowable cut in the public lands of Québec is calculated following the sustained yield principle.

This quasi one-dimensional vision of the establishment of the annual allowable cut does not correspond anymore to the aspirations of Québec pertaining to the development of the forest resources.

Global challenge

To (continue) moving from sustained yield of wood to forest sustainability …

in a complex and uncertain environment …

for which society shows a wide range of needs, interests and expectations.

Challenges to tackle

- Maintain the essential attributes of ecological systems
- Aim at an age structure related to the maintenance of old growth forests and the distribution of age classes
- Integrate more the economic dimension related to harvesting / generate benefits

Challenges to tackle (con't)

4. Allowable cut at long term and at short term

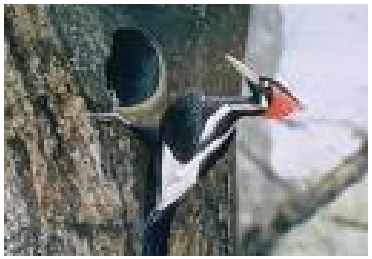
5. Values to sustain / thresholds to maintain

6. Adaptive management in a context of uncertainties in the temporal horizon

And of course …



Grow wood in quantity, in quality and efficiently to provide competitive development opportunities to workers, enterprises, communities and the society.



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Thank you !

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