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**Mitigokaa Development Corporation (MDC)**

Micro-grid Biomass for Base-load Energy

***Sustainable Forestry Operations***

# Sustainable Forestry Management in Canada\*



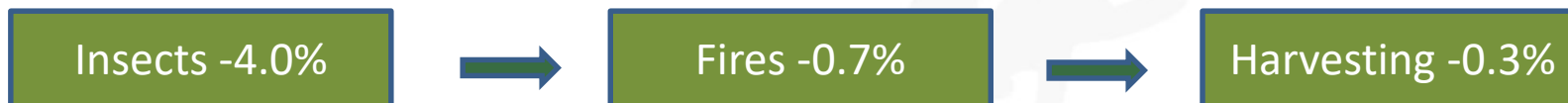
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## Key facts

- Canada is a forest nation. 348 million hectares represents 9% of world's forest, but 0.3% of global deforestation
- Canada has 166M hectares of forest land, that is certified sustainably managed. That is 40% of worlds' certified forests, more than any other country. US is second with 47 M hectares.
- Certification demonstrates sustainable forest management by an independent third party which certifies that management practices meet strict set of biological, environmental and social criteria.
- Canada's forest practices are based on science that considers long term sustainability of forest eco - systems.

## Deforestation

- Defined as permanent clearing of forests. Canada's rate is 0.02% of forest area.
- Harvesting is not deforestation – all forests on public lands must be regenerated.
- Annual loss of forest due to:



# Boreal Forest Management in Canada\*



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- **Canadian Boreal Forest Management Agreement**
  - Worlds' largest conservation measure
  - Forestry companies and environmental organization work together to negotiate a balance between sector prosperity and conservation – involving 73 M hectares
  - Canada reports annually to Parliament through *State of Canada's Forests*.
  - Canada also monitors management practices using science based sustainability indicators such as regeneration, forest disturbances, carbon emissions, area and volume harvested.
- **'Montreal Process'**
  - Canada was a founding member
  - Completed in 1994, and was the first initiative dedicated to sustainable development of world's temperate and boreal forests
- **Model Forest network**
  - Canada led the way in developing global network of 60 model forests in thirty countries.
- **Canada has leading conservation measures to protect boreal forests**
  - Integrated land use planning, environmentally sound forestry management as well as species and habitat recovery.
  - Independent forestry auditing organizations exist to audit performance, namely SFI and SFC.
  - Most forestry operations now audited by professional forestry auditors (SFI/SFC)

\*Ministry of Natural Resources, Sustainable Forestry management, March, 2016

# Forestry Sustainability – auditing the industry



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- **Auditors' Main Principles when auditing forestry operations\***

1. Sustainable Forestry
2. Forest Productivity and Health
3. Protection of Water Resources
4. Protection of Biological Diversity
5. Aesthetics and Recreation
6. Protection of Special Sites
7. Responsible Fiber Sourcing Practices in North America
8. Avoidance of Controversial Sources
  - Illegal Logging in Offshore operations
  - Fiber Sourcing
9. Legal Compliance with forest management plans and provincial permits
10. Continual Improvement options

\* auditing procedures promulgated by Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) organizations



## The Crown Forest Sustainability Act outlines:

- Defines sustainability in Sec [2. \(1\)](#) as “long term Crown forest health”. 1994, c. 25, s. 2 (1).
- Provides for
  - how forest management planning, forest resource agreements, licences, revenue collection and trust funds are regulated (Sec 7-23)
  - information management
  - forest operations, compliance, remedies and enforcement mechanisms (Sec 24-37)
  - licensing of scalers (people who measure wood harvested)
  - regulation of independent forest audits
  - Issuance of sustainable forestry licences Sec 26 (SFL)

## SFL Overview

- SFLs are long-term licences granted for up to 20 years which give the right to harvest all species of trees found in the licensed area.
- SFL holders must:
  - prepare forest management plans
  - gather forest information for the Crown
  - monitor and report on compliance
  - conduct forest operations in accordance with approved plans and operational standards for the area covered by the licence
- SFLs are reviewed every 5 years and may be extended for an additional 5 years if certain conditions are met.

# Fibre requirement and impact on local forests



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- **Amount of fibre required for energy generation depends on**
  - Energy total required by the community
  - BTU value of the species (ranges from 3,000 BTU to 8,400 BTU)/lb.
  - Species in boreal forest most prevalent is black spruce, jack pine and poplar, where BTU average is about 4,250BTU/lb of fibre.
  - Efficiency percentage of generator, when burning fibre into electrical energy (balance goes into heat)

# Sustainable harvesting practices Required in forestry operations in Canada



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- Core harvesting principles to limit impact will include
  - Use of forest management standards
  - Forest health and diversity
    - Maintain same forestry cover
    - Replant annually
  - Protection of water resources
    - Managing storm water and watercourses, eg maintain physical set backs to avoid soil erosion into water
  - Biological diversity
    - Cutting in wind rows for moose migration, etc
    - No permanent impacts on woodland caribou
  - Visual quality
    - No more than 100 hectares clear cut
  - Protection of special sites
  - Fibre use efficiency
    - Branches and other slash
  - Indigenous peoples rights
    - Spiritual, cultural, historic respected
  - Legal and regulatory compliance
  - Continuous training
  - Landowner and community outreach
    - Harvesting local firewood simultaneously, relieves community of need to do so
  - Annual on operations
  - Annual management review and continuous improvement



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