

**Climate Change Adaptation within
the Boreal Forest: Linkages
between science, management, and
policy in sustainable forest
management in a Canadian context**

*Sheri A. Andrews-Key, MSc
PhD Candidate*

University of Saskatchewan

Colin P. Laroque, (University of Saskatchewan)

Mark Johnston (Saskatchewan Research Council)

Saskatchewan

The Provincial Government of Saskatchewan Forest Service Branch
recognition – The light bulb moment!

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Gaps

- ❖ Currently there is a gap between policy and practices, that has been identified by the federal and provincial governments and forest industry in Canada.
- ❖ Purpose of this PhD project was to examine Saskatchewan's forest policy and management options for government (policy makers) and industry (practitioners) and develop new policy and adaptation options for forestry relating to climate change.
- ❖ Ultimately - Development and mainstreaming tools for adaptation and provide recommendations/guidance for policy.

Main Components

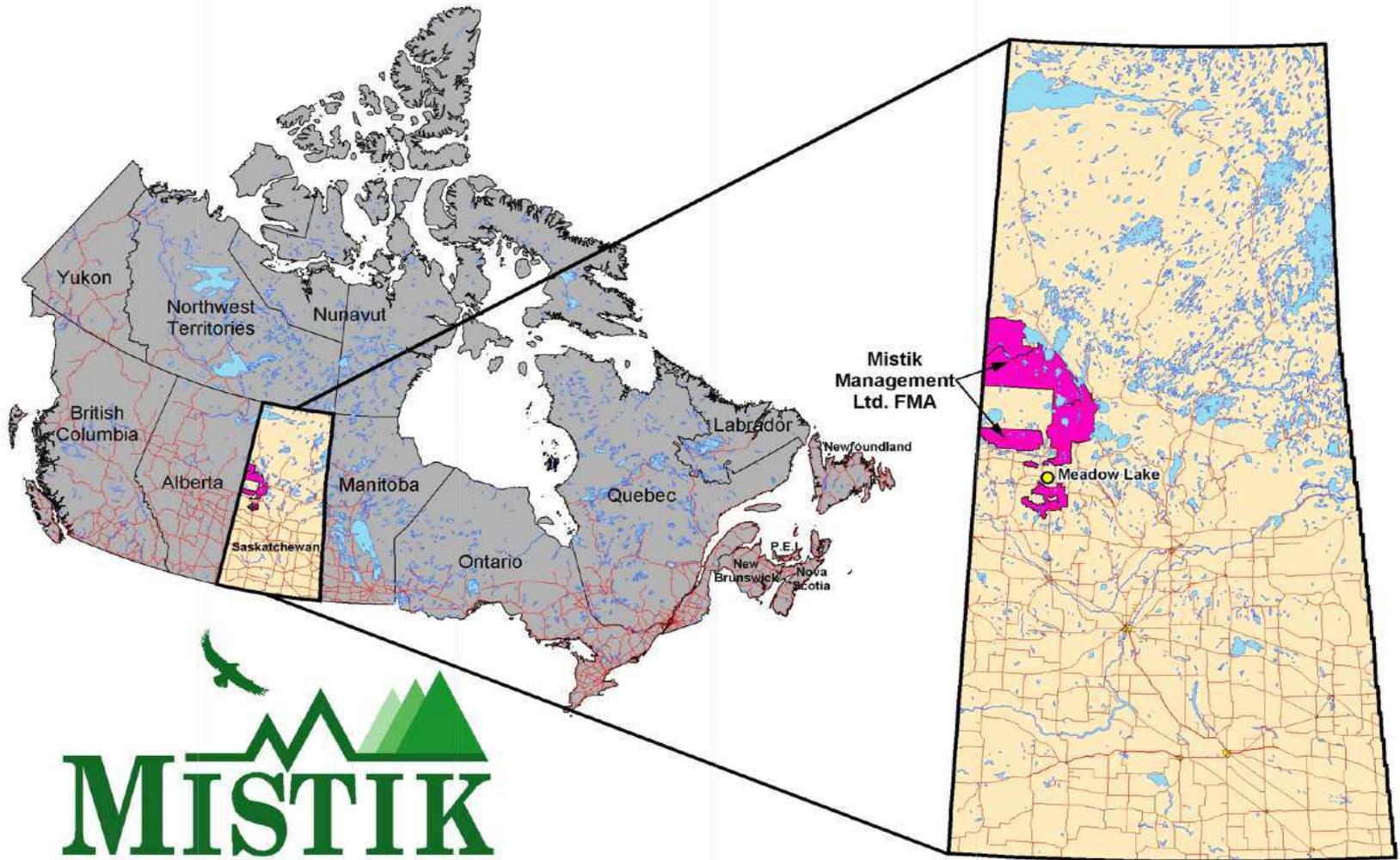
- ❖ Case Study with Mistik Management Ltd. (Saskatchewan based forest company – Meadow Lake, SK).
- ❖ Development of recommendations for climate change, for forest policy in Saskatchewan (following the Results-Based Management Approach).
- ❖ Development of a guidebook for Saskatchewan Ministry of Environment, on climate change adaptation for policy makers and practitioners, based on the Canadian Council of Forest Ministers (CCFM) Framework.

Case Study-Mistik

- ❖ Mistik Management Ltd., a woodlands management company, provides timber and forestry services to its owners: NorSask Forest Products and Meadow Lake Mechanical Pulp, out of Meadow Lake, SK (1.9 million hectares).
- ❖ Since 1998 Mistik has been the licensee of a forest management agreement (FMA) with the Province of Saskatchewan..

❖ Photo Credit: Jay Maillet






MISTIK
MANAGEMENT LTD.

The Case Study

- ❖ In the CCFM vulnerability assessment and approach to adaptation, there are 4 phases:
 1. **Phase 1– Organizational readiness (Mistik completed)**
 2. **Phase 2 – Pre-vulnerability analysis (Mistik completed)**
 3. **Phase 3 – Detailed vulnerability analysis (Mistik completed)**
 4. **Phase 4 – Identify, implement and monitor adaptation (Mistik completed)**

***See CCFM Guidebook for Assessing Vulnerability and Mainstreaming Adaptation into Decision Making**

Case Study Review

- ❖ A vulnerability assessment, including both current and future risks, of Mistik's SFM system using the CCFM Guidebook. It includes both the biophysical and management aspects of their practices as related to climate change.
- ❖ An assessment of Mistik's response to past, present and future climate related impacts, i.e. an analysis of their Adaptive Capacity.
- ❖ Mistik is the first forest company in Canada to mainstream climate change monitoring and adaptation into their annual operating and 20-year forest management plans.

Case Study-Mistik

- ❖ What have we done:
 - ❖ Case study complete – using the CCFM Framework
 - ❖ Other involvement and progress (Government Collaborations – Federal/Provincial)
 - ❖ Adaptation options
 - ❖ Mainstreaming (tools)
- ❖ Next Steps:
 - ❖ Policy and regulations
 - ❖ Other Collaborations

❖ Photo Credit: Jay Maillet



Case Study Outcomes

- 
- **First application of the CCFM framework from start to finish, completed with an industry/government collaboration at the FMA level in Canada.**
 - **Successful mainstreaming.**
 - **Increased adaptive capacity for both government and industry.**

Case Study Process- Mistik

❖ *Benefits from Mistik's Perspective:*

❖ 4 Main Values:

- 1. Allow Mistik to demonstrate to the public that they are taking a proactive approach to addressing climate change issues.
- 2. Increasing ability to more comprehensively address species at risk concerns within the FMA.
- 3. Increase confidence in best SFM practices for both the mills.
- 4. Increase confidence and being proactive in the auditing process by addressing current/potential climate change issues.

Important Messages

- ❖ Through the process of the case study and vulnerability assessment, Mistik has increased its awareness, understanding, and adaptive capacity for mainstreaming climate change adaptations into its overall SFM system.
- ❖ Mistik has taken a lead role in collaborating with the provincial government to move towards aiding in the development of more flexible regulations and policy that will benefit all stakeholders in managing the forest resources in more proactive and sustainable way in the face of an uncertain climatic future.

In Conclusion

- ❖ This research and information is critical for long-term planning that is mandated for forestry operators in Saskatchewan.
- ❖ Climate changes are impacting many facets of forests in Saskatchewan and will have implications for forest practitioners in their efforts to achieve sustainable forest management (SFM) objectives and goals.
- ❖ Results and tools provided from this research will help policy makers and practitioners better understand and adapt for an uncertain climatic future and manage for sustainability within the Saskatchewan boreal forest.

Collaborators

- ❖ University of Saskatchewan (SENS)(Dr. Colin Laroque – advisor)
- ❖ Mistik Askiwin Dendrochronology Lab (MAD Lab)(Dr. Colin Laroque)
- ❖ Mistik Forest Company and Meadow Lake Tribal Council
- ❖ Saskatchewan Research Council (Dr. Mark Johnston)
- ❖ Ministry of Environment, Forest Services Branch (Aaron Dr. Rory McIntosh)
- ❖ Johnson-Shoyama Graduate School of Public Policy (Dr. Jeremy Rayner)
- ❖ Canadian Forest Service (Jason Edwards)



- ❖ NSERC
- ❖ Government of Saskatchewan (Ministry of Environment)
- ❖ Global Water Futures (GWF)
- ❖ University of Saskatchewan, Department of Soil Science (Dr. Ken Van Rees)

A photograph of two red and black ATVs parked in a forest of birch trees. The trees have white bark and green foliage. The ATVs are positioned on the left and right sides of the lower half of the image.

Thank You!

❖ Questions?

❖ For more information contact:

❖ Sheri Andrews-Key

❖ sherianne1973@gmail.com or (306)212-0047

Responses to Questions

1. Focus of research is sustainable forest management, climate change adaptation, mainstreaming, and policy in Canada and is critical for long-term planning and policy responsiveness/flexibility to address climate change impacts.
2. Key challenges that were identified include, policy/management gaps, responsiveness/flexibility in policy for effective management adaptation, co-development of policy between forest managers and government, financial barriers, need for more research in the application of low-risk, low-cost adaptations, increased collaborative networks and communication.

3. To address the challenges, increased collaborative networks, increase communication and knowledge dissemination between researchers, forest managers, and policy makers, move towards co-development of new policy.