

Kamloops Future Forest Strategy K2 2010-2011

Modeling Update – June 2011

**Symmetree Consulting Group and the University
of British Columbia Forest Sciences Dept.**



Overview of K2 and relationship to K1:

K1 *Future visioning with expert opinion*

Objective: rationalize expectations & direction for future timber & biodiversity management in the context of expected impacts of climate change.

1. Local ecological climate-envelope mapping to explore plausible climate futures.
2. Opinion-based analysis with local experts & practitioners.
3. Assessment of ecological & management vulnerabilities & opportunities.
4. Development of future forest narratives for ecological groups, including climate change sensitivities & vulnerabilities.
5. Identification of adaptive management options, direction, and barriers.

K2 *Quantitative multiple scenario analysis*

Objective: further explore K1 assumptions, impacts & vulnerabilities in selected case study area to develop robust adaptive strategies.

1. Identification & prioritization of management values, goals, questions & indicators to steer modelling and evaluate outputs.
2. Selection of climate/management scenarios to explore with modelling.
3. Downscaling climate data & incorporating local variability into future scenarios.
4. Use of climate integrated stand & landscape-level computer meta-model suite.
5. Adjust K1 future forest narratives & adaptive strategies.

General Expectations for K2 :

1. **Greater understanding of processes** that will impact establishment and survival of conifer and broadleaved trees.
2. **Greater understanding of possible impacts and uncertainties regarding growth, and mortality** in various young and maturing stand types.
3. **Narratives to describe plausible planning scenarios** incorporating model outputs to provide a comprehensive rationale.
4. **A greater awareness of available options** and their ability to address issues identified by the climate change scenarios.
5. **Analysis of management tradeoffs and design of robust strategies** to decrease vulnerability and maintain future options.

Overview of completed work:
June 2010 workshop

MODELING GOALS

Overarching Goal:	<i>Encourage resilience within the ecosystems to maintain productive, “healthy” forests that will continue to be able to provide future benefits (for timber, biodiversity, etc.) in spite of the disturbances (and surprises) that may result from climate change.</i>
Timber:	<i>Maintain or increase the flow of timber volume and/or value over time.</i>
Habitat & Biodiversity:	<i>No loss of native species due to management over time.</i>
Fire:	<i>Minimize fire risk to people and property.</i>

Overview of completed work: June 2010 workshop

**Timber Management & Economics
WORKING GROUP**

**Biodiversity Habitat and Natural Disturbances
WORKING GROUP**

22 Modeling Questions

EXAMPLES:

<p>Timber Management & Economics</p>	<ol style="list-style-type: none"> 1. <i>Will some areas suffer such a reduced productivity for timber that they will drop out of the THLB?</i> 2. <i>How will the size and nature of the THLB change over time? Where will we harvest, when and how?</i>
<p>Biodiversity, Habitat & Natural Disturbances</p>	<ol style="list-style-type: none"> 1. <i>How will the cumulative footprint of natural disturbance and harvesting disturbance and management impact habitat and biodiversity over time?</i> 2. <i>How will adaptive strategies applied at the stand level to leave structure influence habitat and biodiversity over time?</i>

Overview of completed work:

Modeling Performance Indicators

EXAMPLES:

Goal	Linked Question	Modelling Indicator
<i>Maintain or increase the flow of timber volume and/or value over time.</i>	<i>How will the size and nature of the THLB change over time? Where will we harvest, when and how?</i>	<i>Area in hectares – broken down by subzone groups to indicate those with the greatest challenges over time.</i>
<i>No loss of native species due to management over time.</i>	<i>How will adaptive strategies applied at the stand level to leave structure influence habitat and biodiversity over time?</i>	<i>Percent of larger/older trees dead or stressed across the case study area (>23 or 30 cm diameter depending on species).</i>

1 of 8 indicators relevant to the question

Overview of completed work: Modeling Suite and Approach

