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North American Forest Sector Outlook Study

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NAFSOS Overview

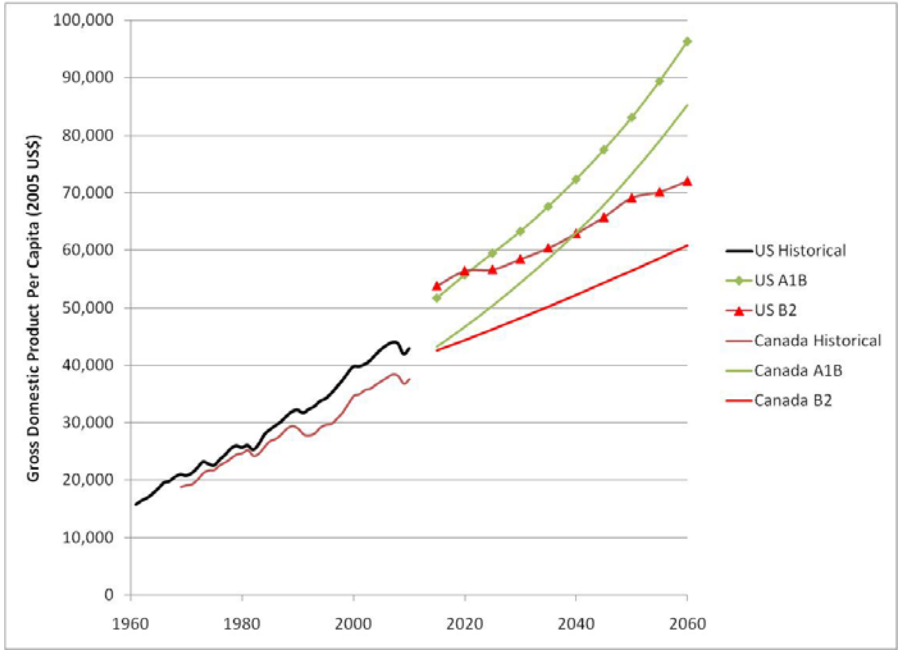
- Study Leads:
  - Jeffrey Prestemon, U.S. Forest Service and Forest Sector Outlook Study Vice-Chair
  - Joseph Buongiorno, University of Wisconsin-Madison, U.S.
  - Shushuai Zhu, University of Wisconsin-Madison, U.S.

- Study Objectives
  - To provide policy makers, industry, and forest managers with information about future trends
  - To quantify the effects of world forest sector changes on North American Forest Resources and Products, and vice versa

- Analysis Framework
  - IPCC-based scenarios used to project population, income, and bioenergy sector development in Canada, U.S. and worldwide
  - A global, vertically integrated spatial equilibrium model of the forest sector was used, the Global Forest Products Model
  - Global modeling based on U.S. 2010 Resources Planning Act (RPA) Assessment, with special attention to U.S. and Canadian model results.
  - U.S. component includes effects of climate change to 2030, but not the rest of the world

NAFSOS Scenarios

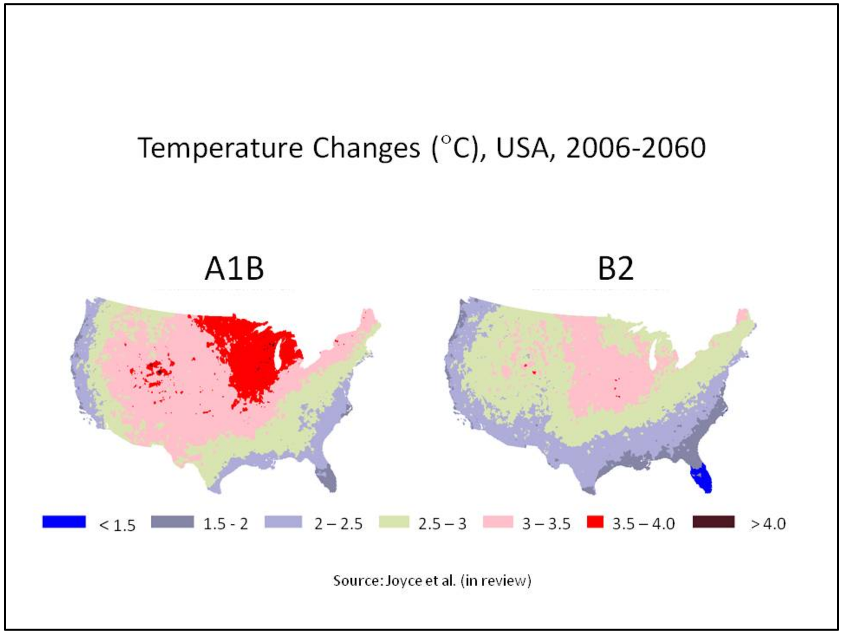
- IPCC Scenarios A1B and B2
- Scenario A1B Low Fuelwood
  - Dropped the IPCC A1B assumptions on wood use in a bioenergy market, other assumptions the same as A1B
- Historical and projected per capita income by scenario

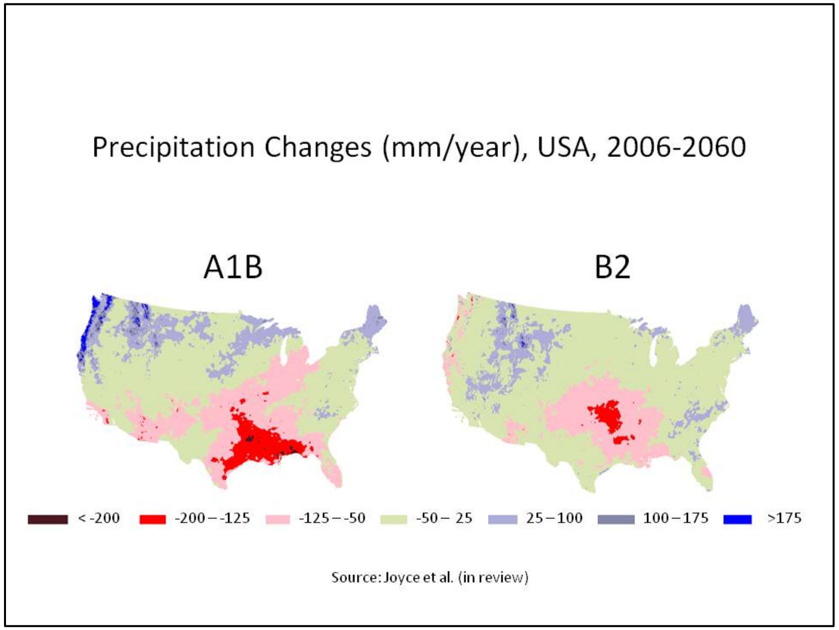


NAFSOS Scenarios (2)

- Bioenergy Assumptions: increases in total roundwood consumption
  - A1B: 5.5X increase from 2006 (globally)
  - B2: 3X increase from 2006 (globally)
  - A1B-Low Fuelwood: market driven within GFPM (globally)

- Climate Change Projections in the U.S.: historical averages compared to 2060 decadal averages

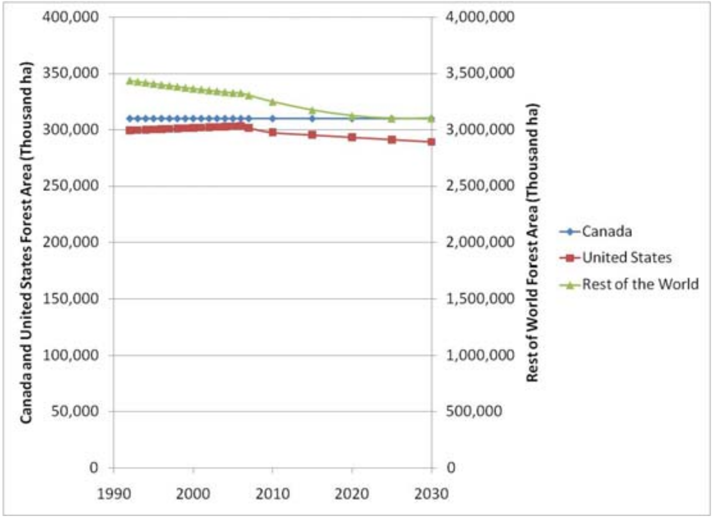




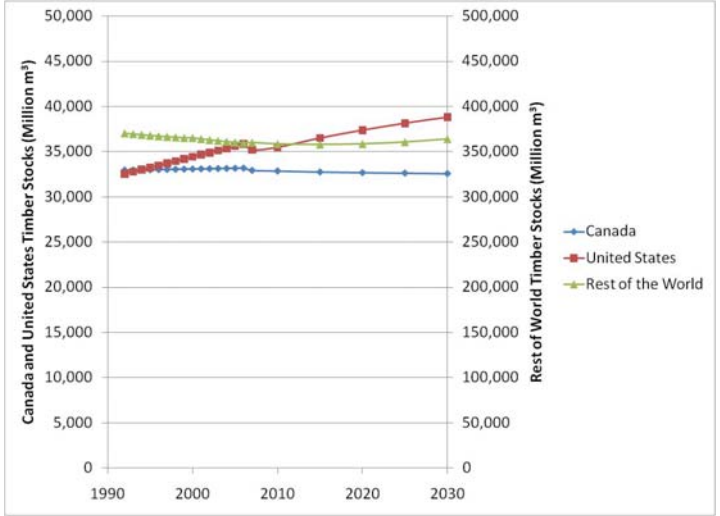
NAFSOS Key Findings: Forest Area and Inventory: Scenario A1B

- U.S. forest area declines, Canadian forest area remains unchanged to 2030
- Inventory (stock) in U.S. increases and Canada is relatively flat to 2030

- Forest area and inventory (stock) projections under A1B



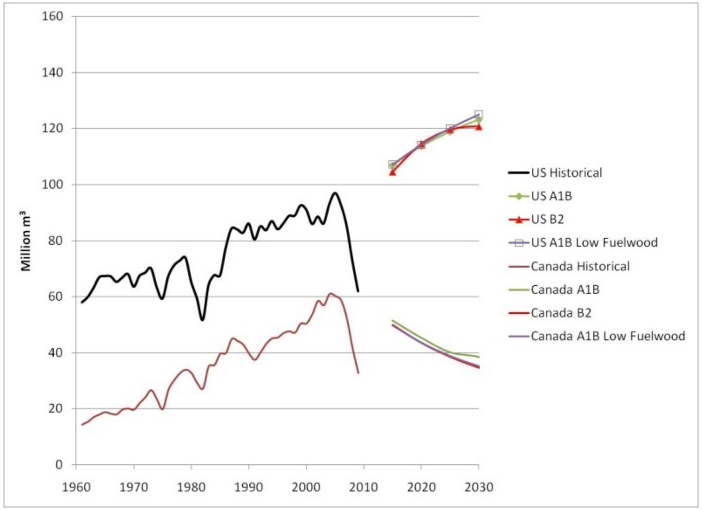
Forest Area – A1B



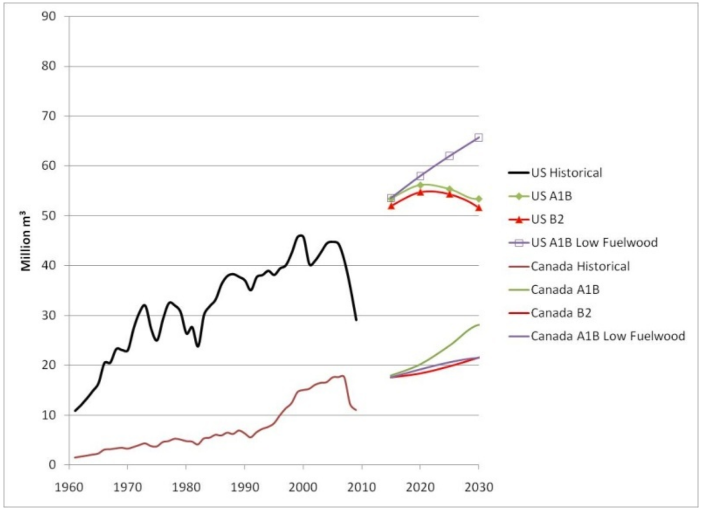
Forest Stocks – A1B

NAFSOS Key Findings: Production

- Industrial roundwood for forest product uses is projected to decline in North America
- Sawnwood trends: declines in Canada, increases in U.S.
- Wood-Based Panels: increases in Canada, declines in U.S. except under the low fuelwood demand scenario



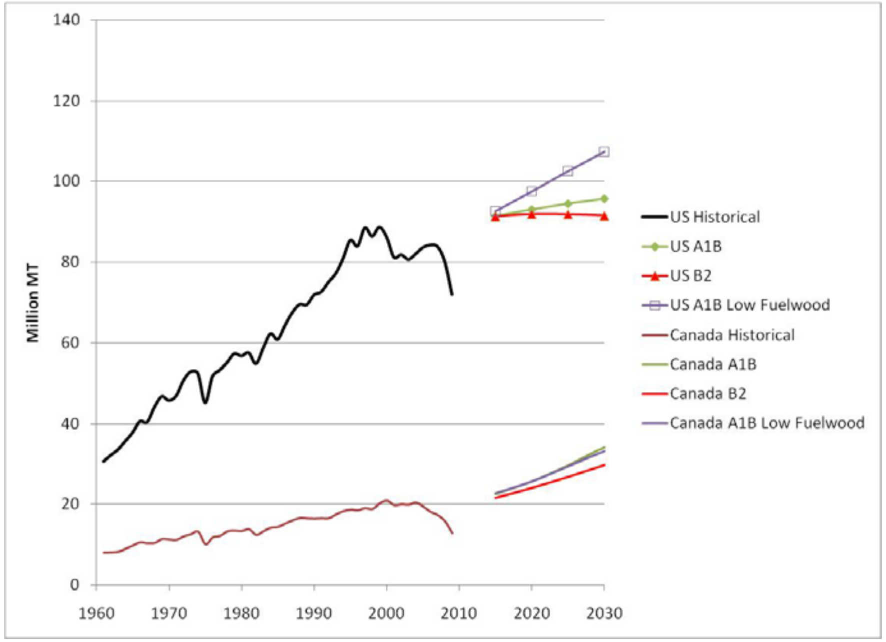
Sawnwood Production



Wood-Based Panels Production

NAFSOS Key Findings: Production (2)

- Paper and Paperboard: increases in both Canada and U.S. over historical levels
- Subcategories of newsprint and printing and writing paper production decline in U.S., primarily because of substitution by electronic media.



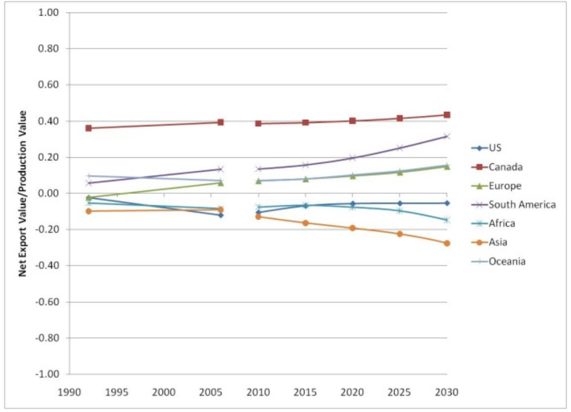
Total Paper and Paperboard Production

NAFSOS Key Findings: Comparative Advantage

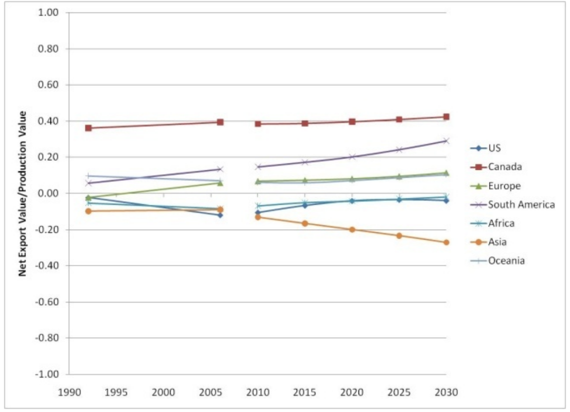
- Canada retains its comparative advantage in processed forest products (sawnwood, panels, paper) into the foreseeable future: measured as net export value/production value.

- U.S. remains at a comparative disadvantage (i.e., index is <0) in nearly all products under all scenarios, with slight improvements in sawnwood and paper and paperboard

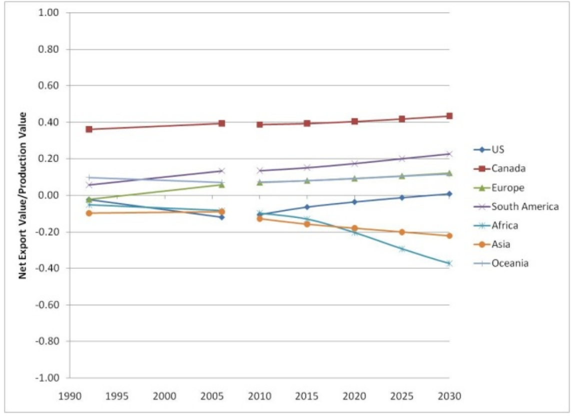
- Improvement in the U.S. trade position is strongest in A1B-Low Fuelwood, where industrial fiber in not redirected in great volume toward the bioenergy sector.



Total Forest Products – A1B



Total Forest Products – B2



Total Forest Products – A1B-Low Fuelwood

NAFSOS: Status and Next Steps

- Special sub-study on the impact of North America on global forest product markets
  - North America's consumption share in the world has been declining since the 1980's
  - Total roundwood consumption shares are projected to decline, while those of most other regions of the world are projected to rise, across all scenarios
  - North America's production shares may rise or fall, depending on the product category and scenario
- Comparison of NAFSOS to EFSOS II for the IPCC-based scenario B2.
- Final manuscript in the production process