

# North American Forest Sector Outlook Study

Jeffrey Prestemon, US Forest  
Service

23 March 2011

# This Presentation

- Background on the Assessment
- Characterization of Some Sector Drivers
- Preliminary Results and Major Findings for the United States
  - Product market projections
  - “Base” projection that does not impose bioenergy assumptions
  - Comparative advantage analysis
- Next Steps

# NAFSOS Background

- Parallel process with EFSOS
  - Same IPCC-based projections of global economy (A1B, B2)
  - Pays attention to global forest sector developments
  - Runs to 2030
  - Embodies climate change (to some extent)
  - Factors in aspects of a “Green Economy”—use of wood in the bioenergy sector is projected exogenously, as indicated by the IPCC
  - Includes a kind of competitiveness analysis
- Several differences compared to EFSOS, including:
  - NAFSOS uses a different global market model, connected to the 2010 US Resources Planning Act Assessment
  - NAFSOS focuses more on product markets
  - The green economy is part of NAFSOS reference scenarios, while a side study is focused on not making significant green economy assumptions

# Three Alternative IPCC-Based Scenarios for the US RPA, but Two for NAFSOS

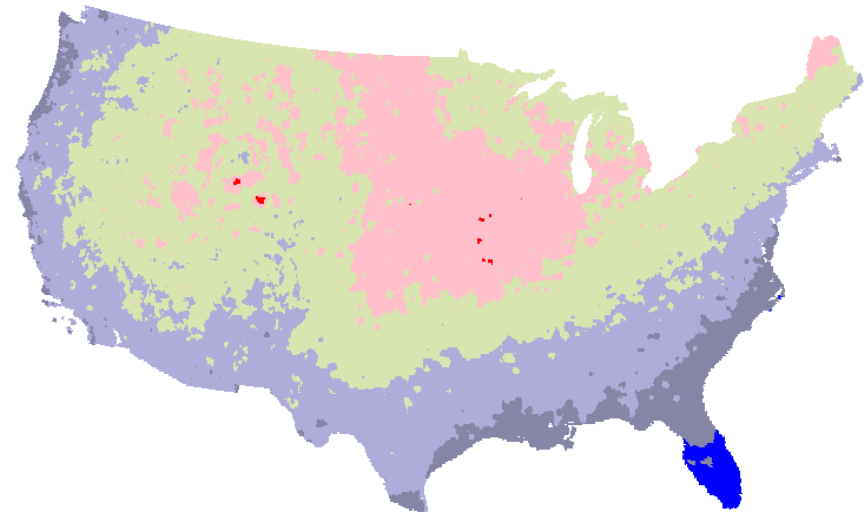
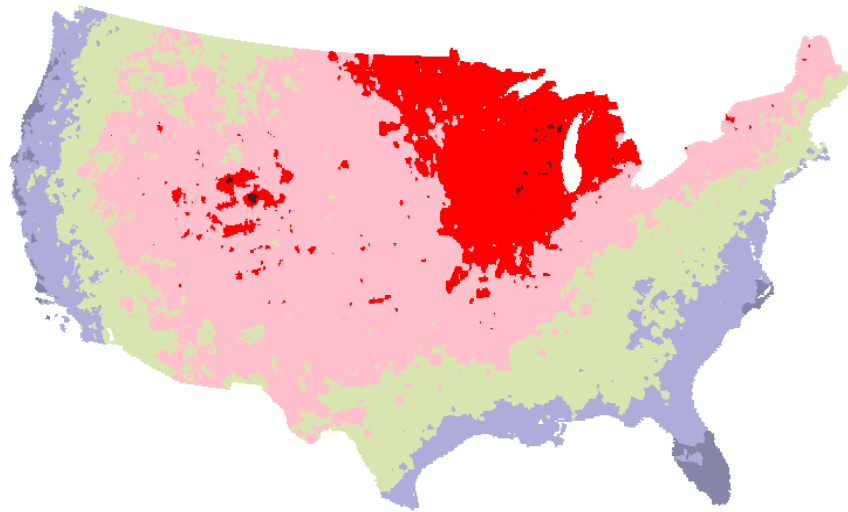
Scenario:	<u>A1B</u>	<u>A2</u>	<u>B2</u>
General Description	Globalization, Economic Convergence	Heterogenic Regionalism, Less Trade	Localized Solutions, Slow Change
Social Development Themes	Economic Growth, New Technologies, Capacity Building	Self-reliance, Preservation of Local Identities	Sustainable Development, Diversified Technology
Global Real GDP Growth (2010-2060)	High (6.2X)	Medium (3.2X)	Medium (3.5X)
Global Population Growth (2010-2060)	Medium (1.3X)	High (1.7X)	Medium (1.4X)
U.S. GDP Growth (2006-2060)	Medium (3.3X)	Low (2.6X)	Low (2.2X)
U.S. Population Growth (2006-2060)	Medium (1.5X)	High (1.7X)	Medium (1.3X)
Global Expansion of Primary Biomass Energy Production (2000-2020)	High (highest for	Medium	Medium (lowest for

# NAFSOS Climate Change Scenarios

Temperature Changes (°C), USA, 2006-2060

A1B

B2



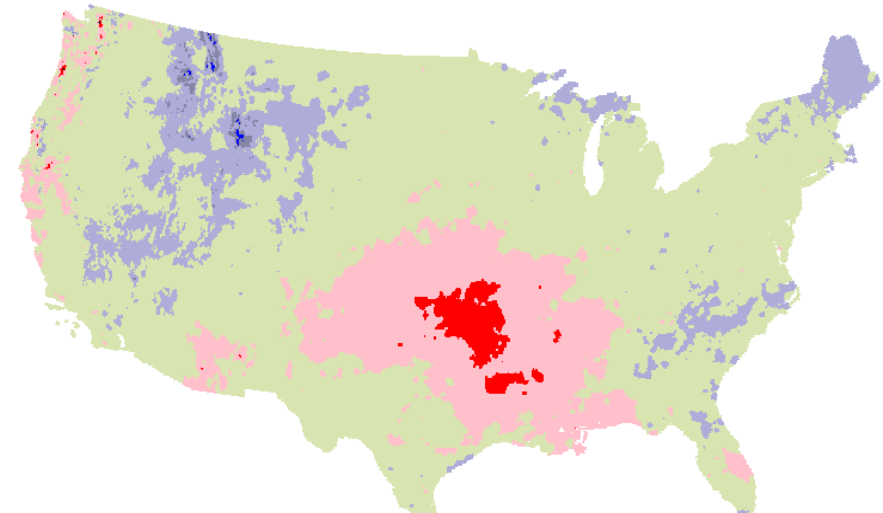
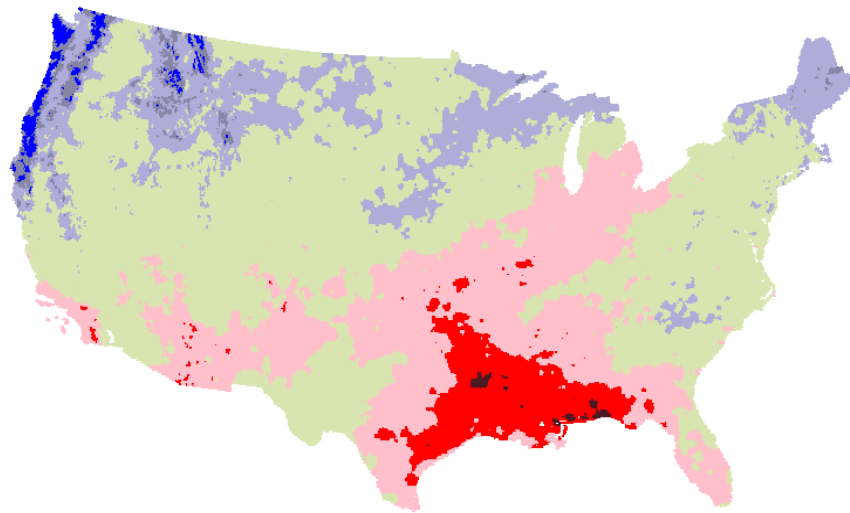
Source: Joyce et al. (in review)

# NAFSOS Climate Change Scenarios

Precipitation Changes (mm/year), USA, 2006-2060

A1B

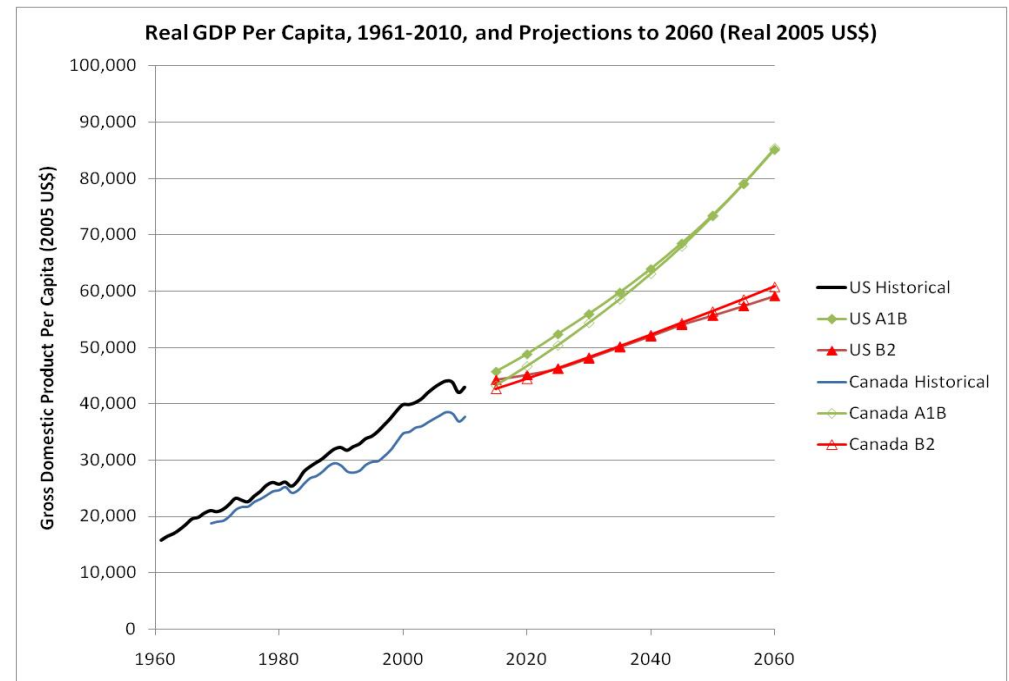
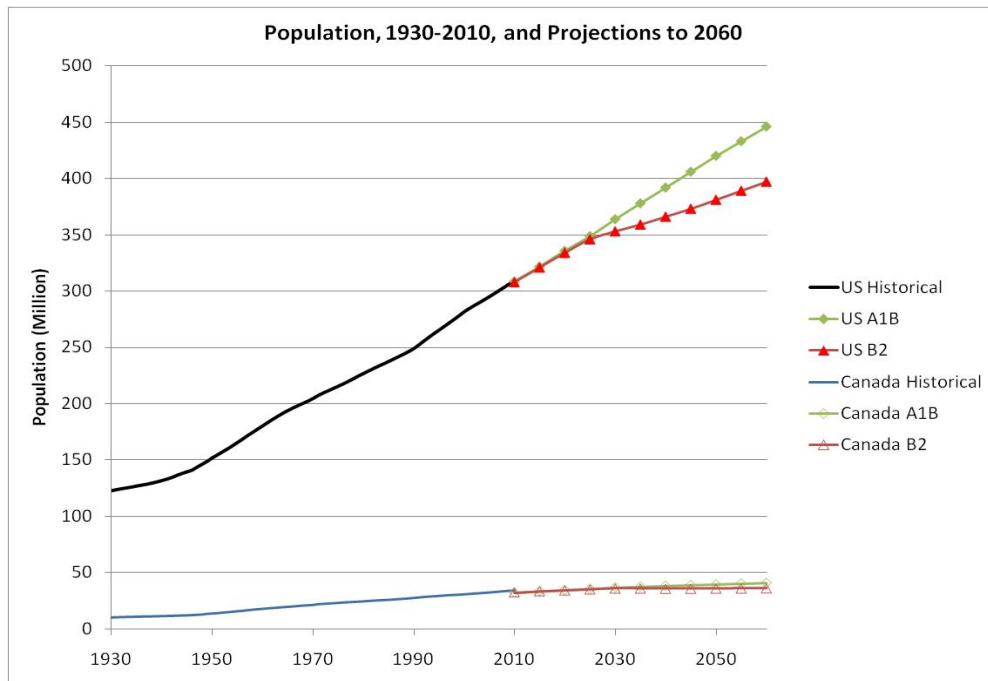
B2



Source: Joyce et al. (in review)

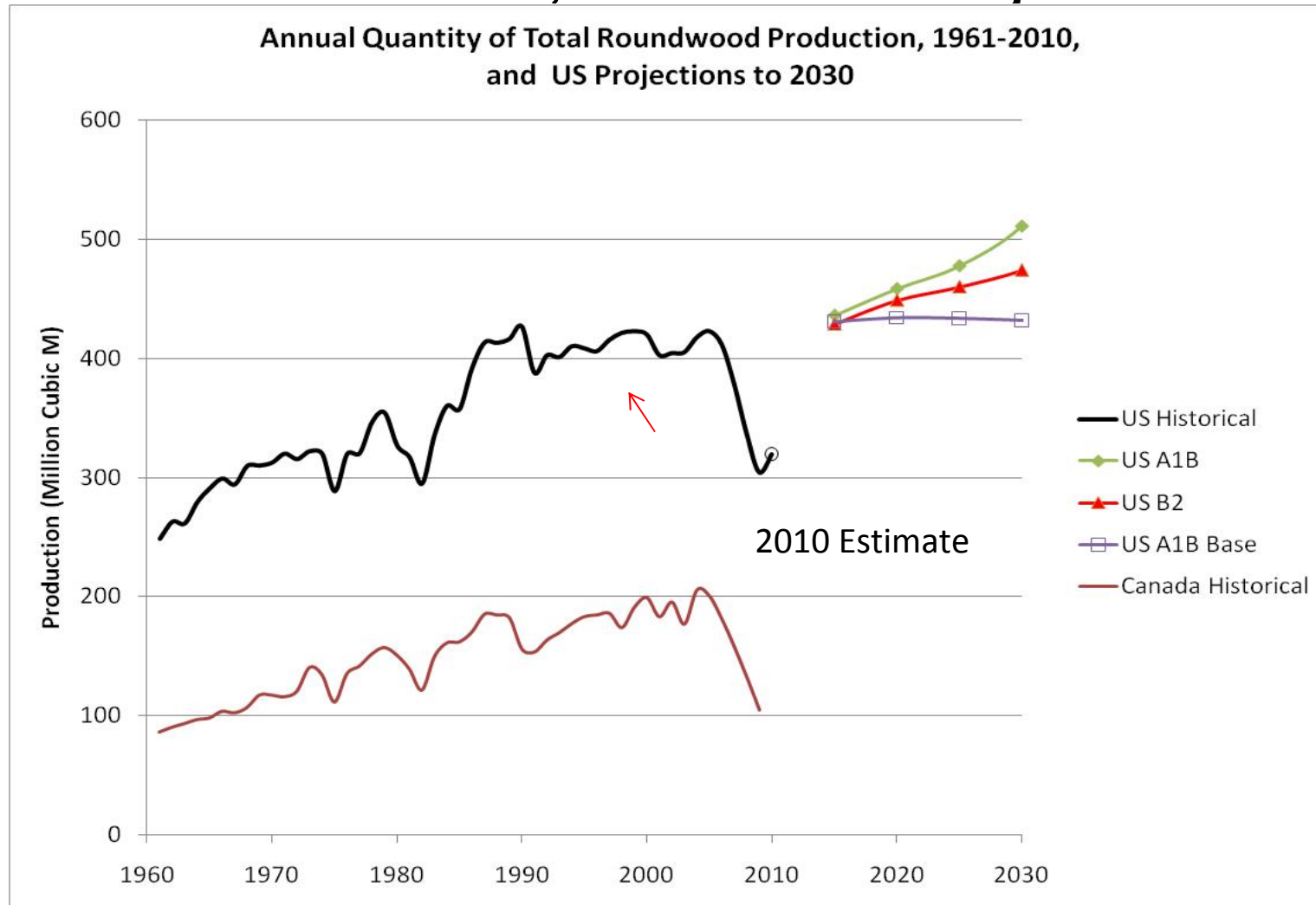
# NAFSOS Population & Income

- Accounts for changes in population and income (here, per capita)—to 2060



# Timber Production in Canada and the U.S.

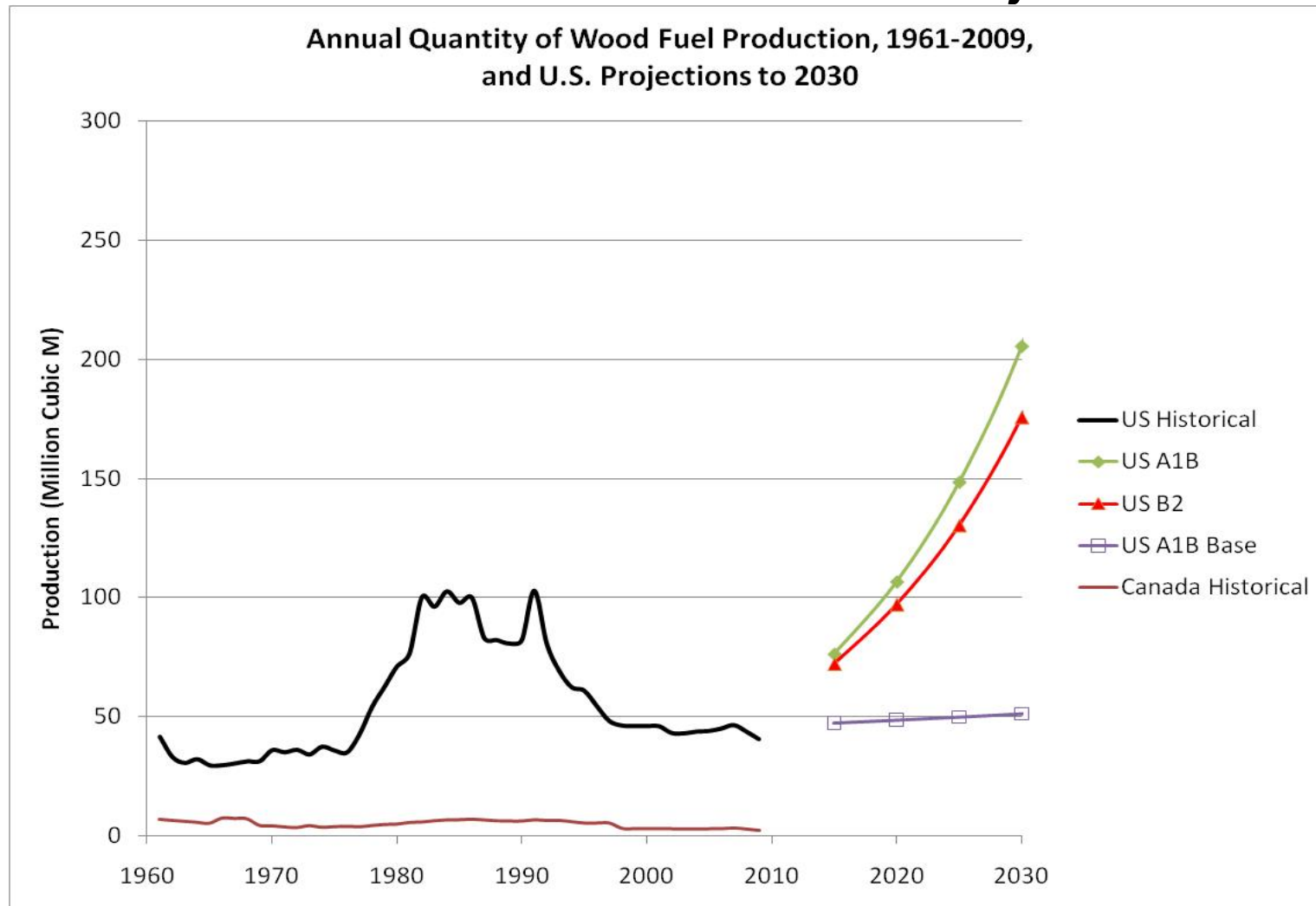
Historical 1961-2009, and U.S. Projected to 2030





# Wood Fuel Production in Canada and the U.S.

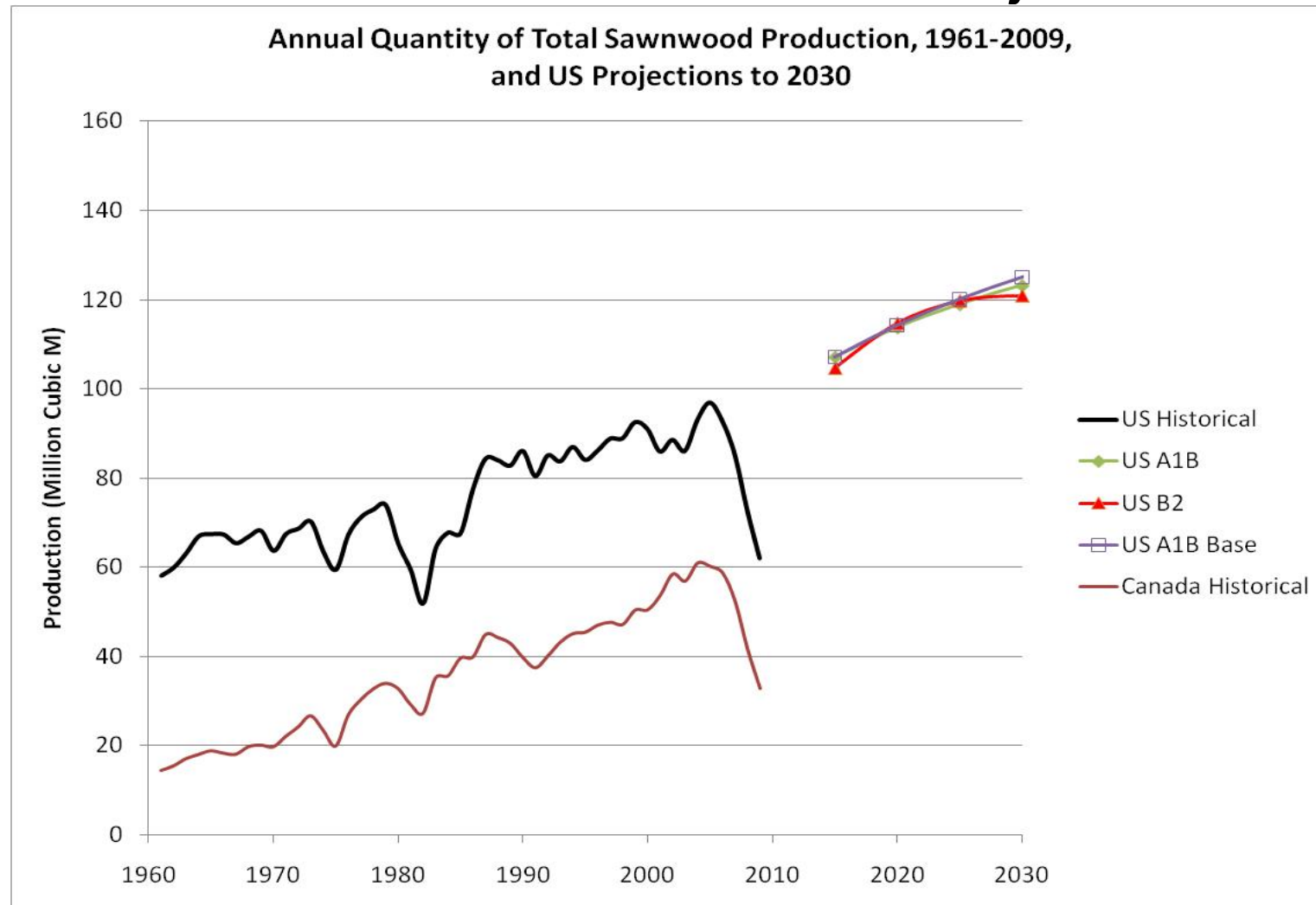
Historical 1961-2009, and U.S. Projected to 2030



This ignores mill residuals: 9 million m<sup>3</sup> in Canada, maybe 15 million m<sup>3</sup> in the US in the late 2000's.

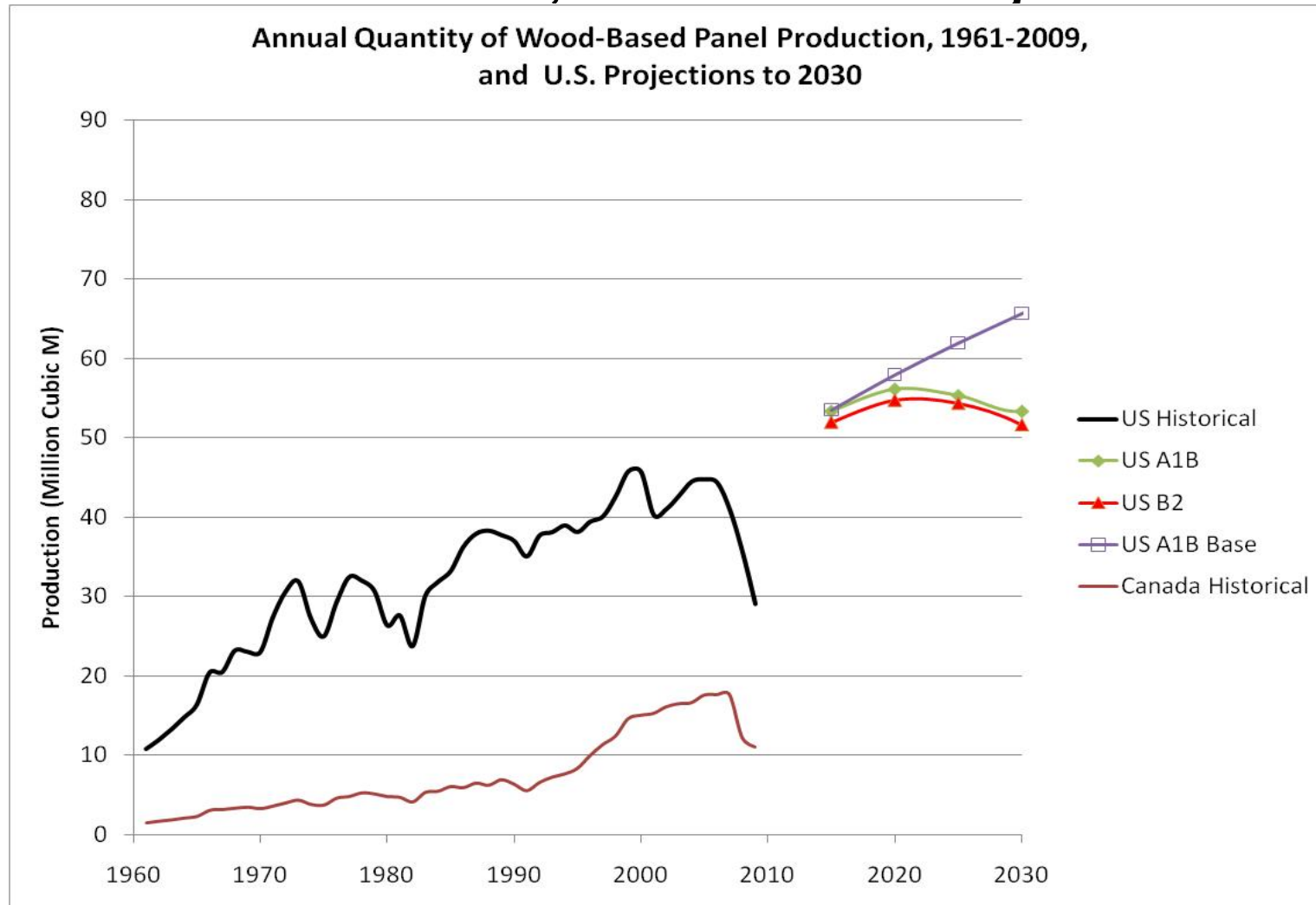
# Sawnwood Production in Canada and the U.S.

Historical 1961-2009, and U.S. Projected to 2030



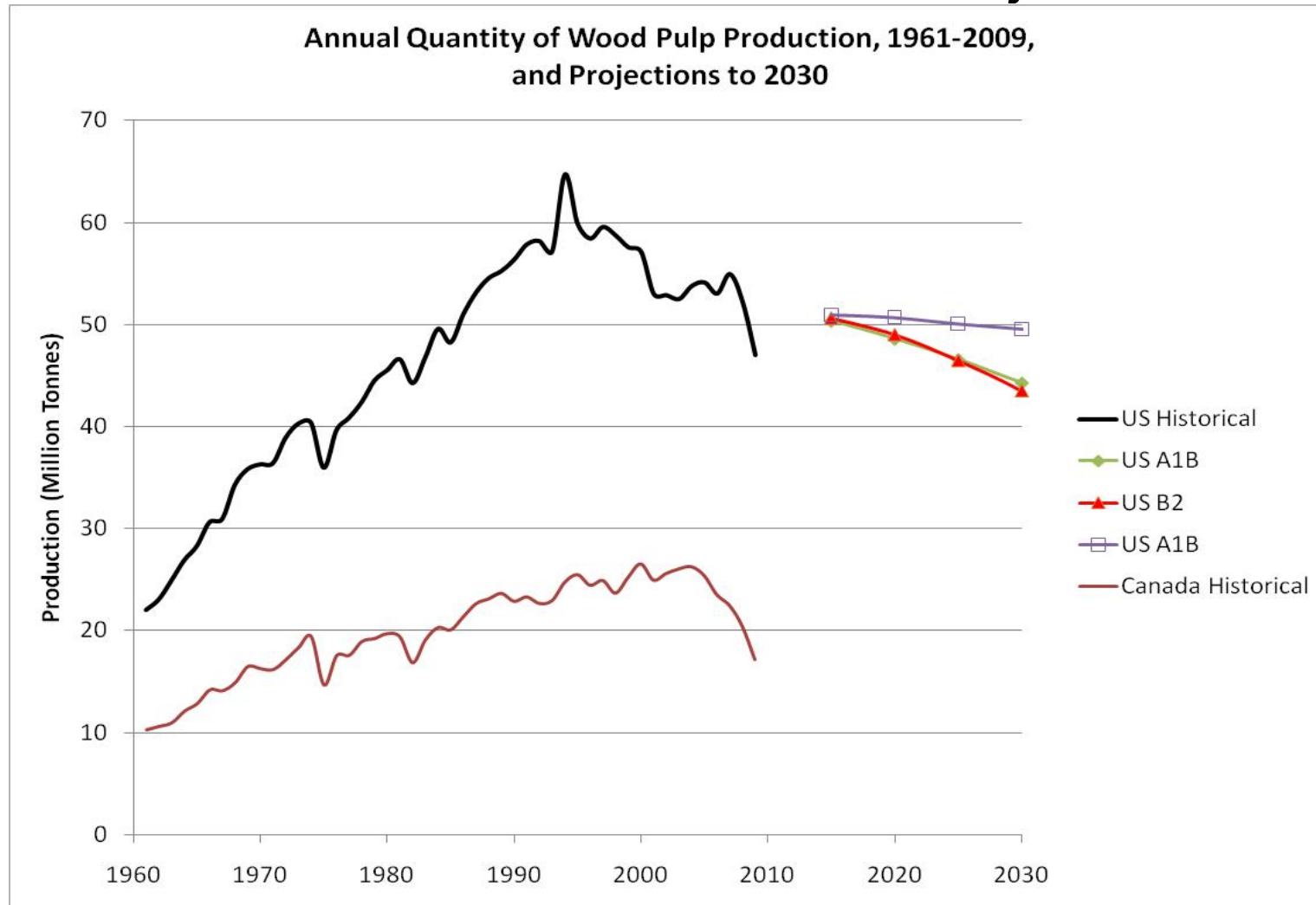
# Wood Panels Production in Canada the U.S.

Historical 1961-2009, and U.S. Projected to 2030



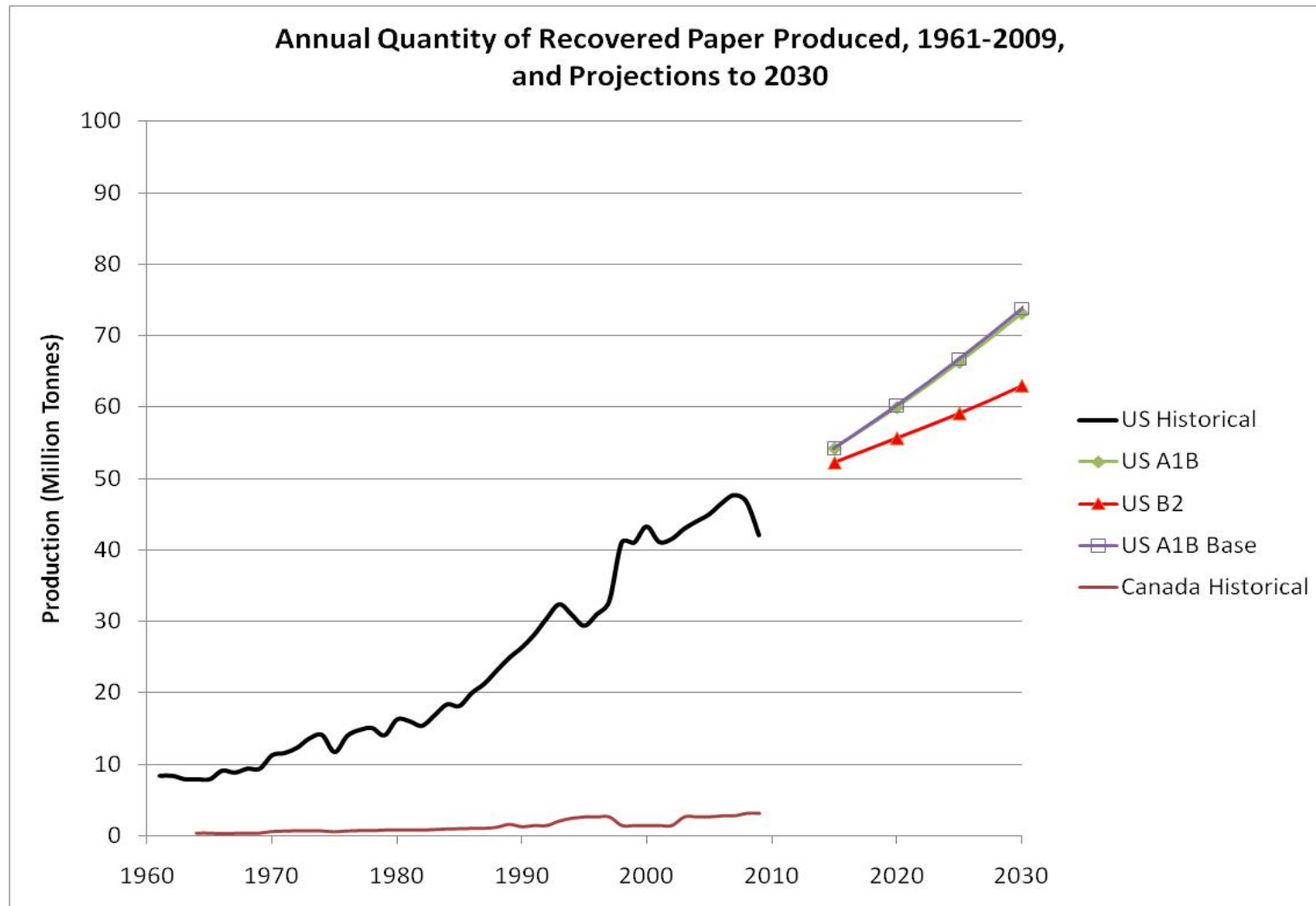
# Wood Pulp Production in Canada and the U.S.

Historical 1961-2009, and U.S. Projected to 2030



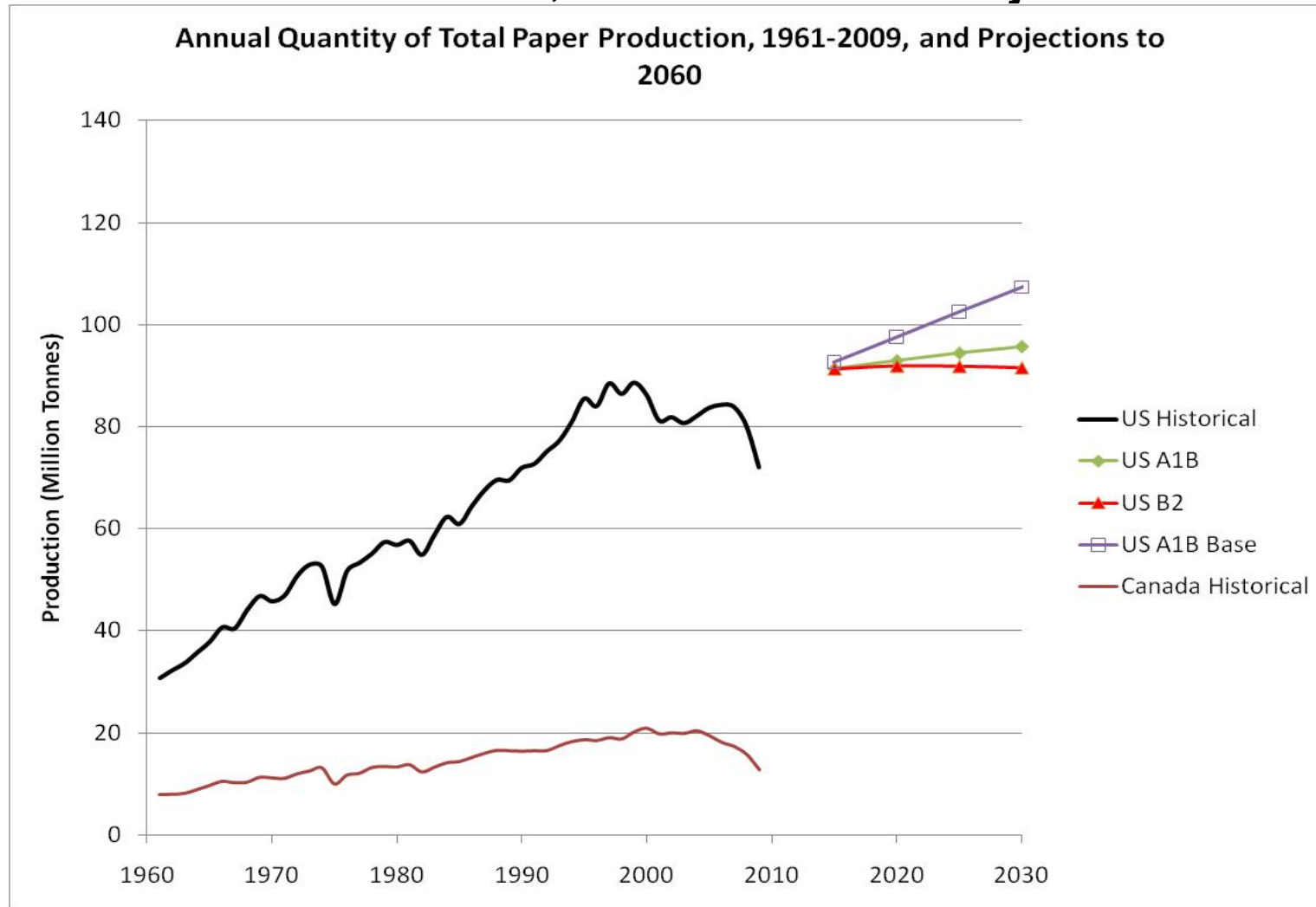
# Recovered Paper Production in Canada and the US

Historical 1961-2009, and U.S. Projected to 2030

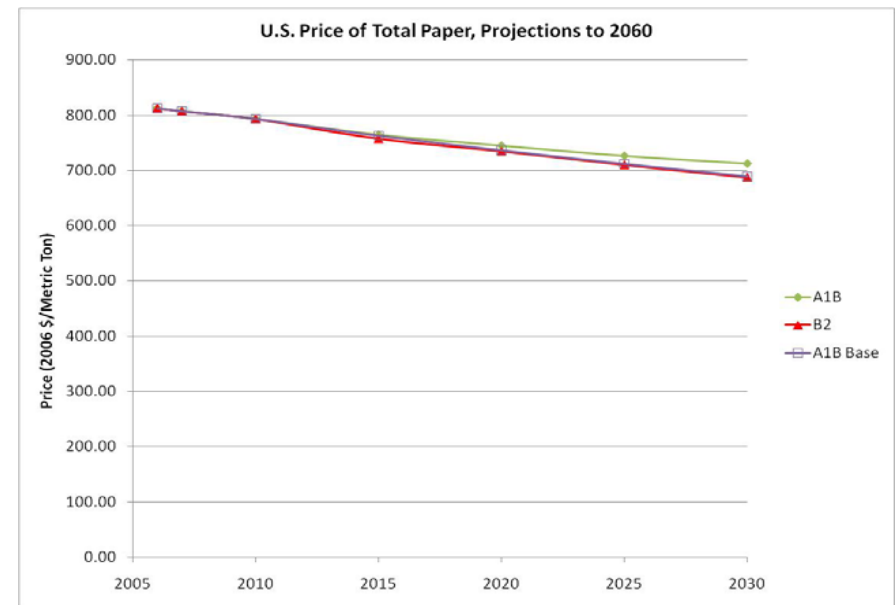
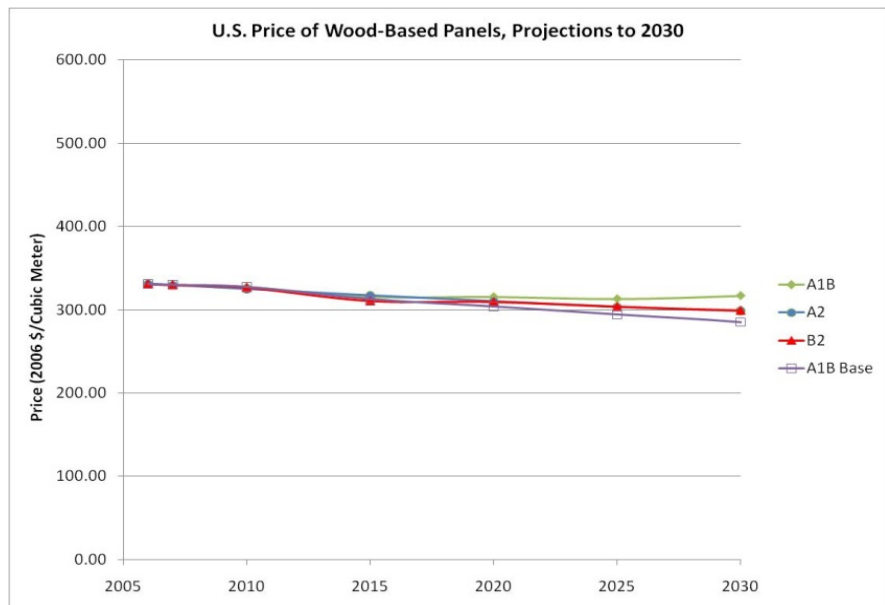
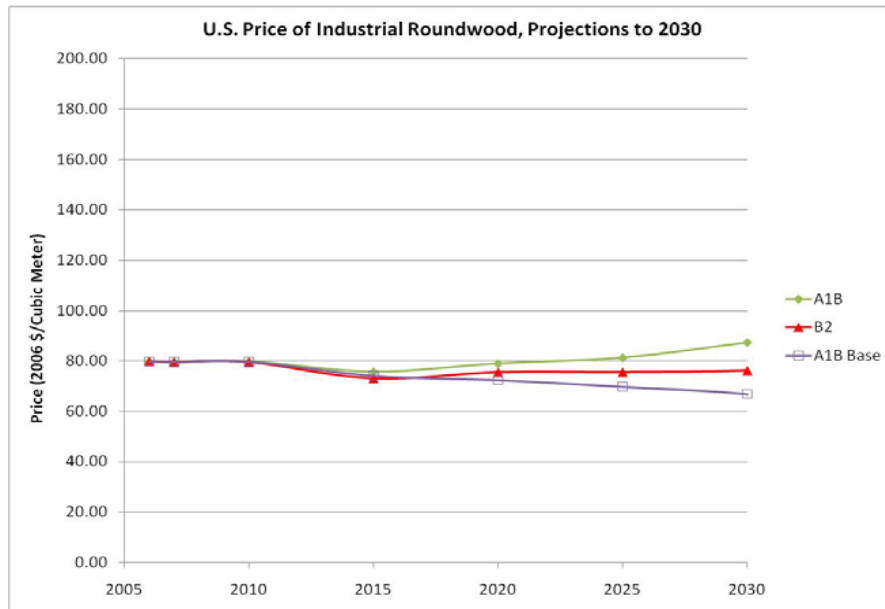


# Total Paper Production in Canada and the U.S.

Historical 1961-2009, and U.S. Projected to 2030



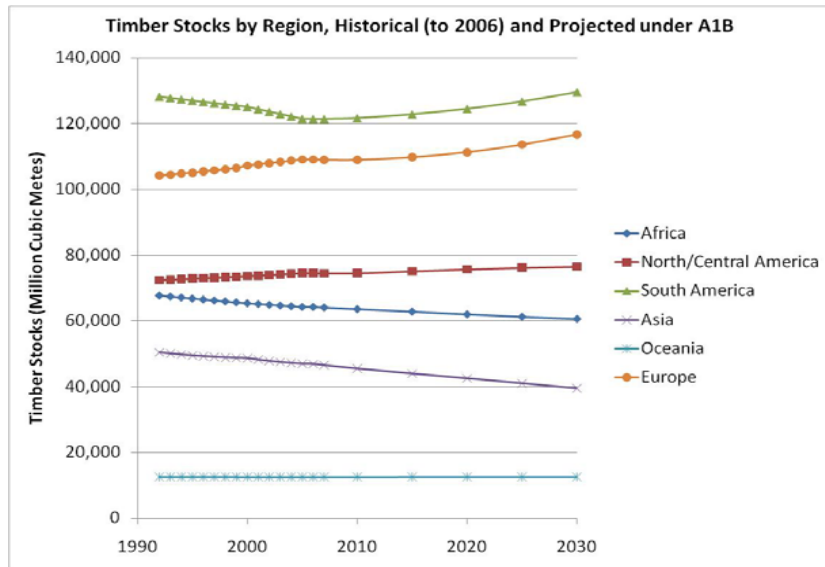
# U.S. Product Prices



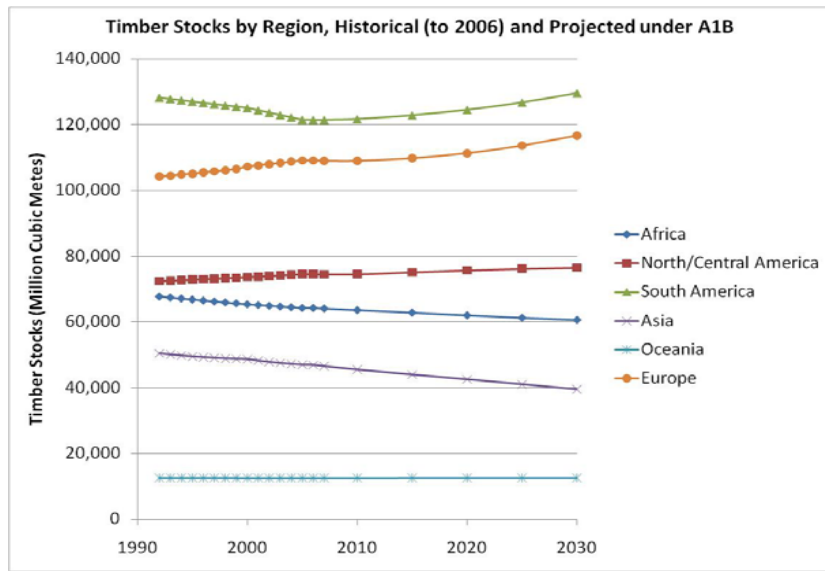
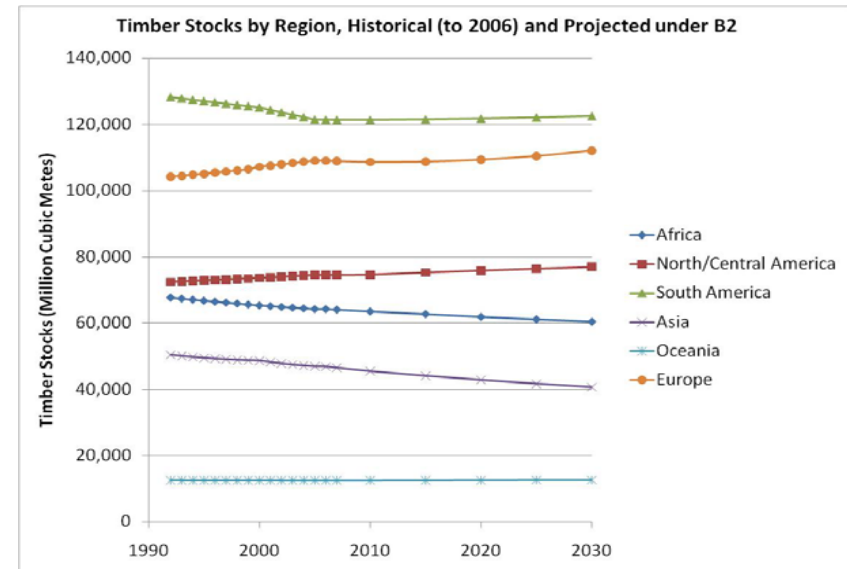
# Timber Stocks Trends

## Historical 1992-2006, Projected to 2030

A1B



B2



A1B-Base

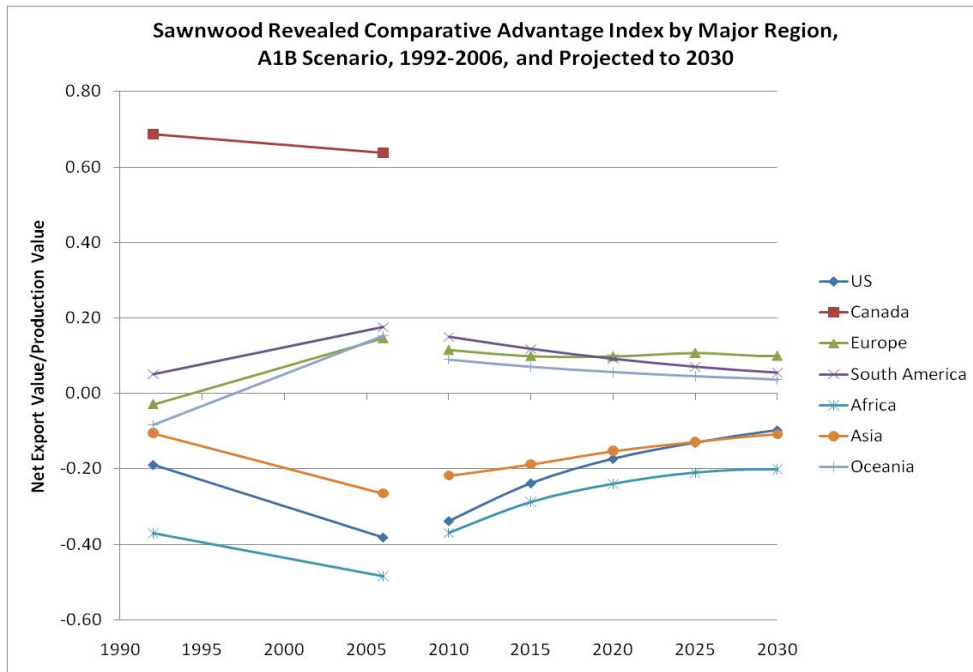
**World stocks are 9,530 m<sup>3</sup>  
(2%) higher in 2030 with  
A1B-Base compared to A1B**



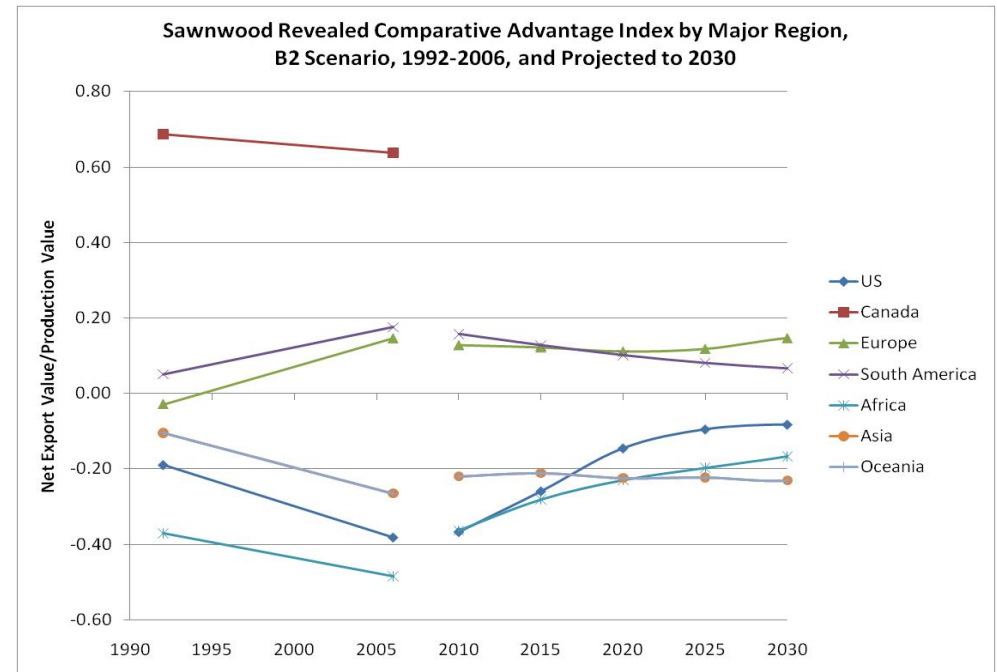
# Comparative Advantage Evaluation

# Revealed Comparative Advantage, Sawnwood, 1992, 2006, Projected to 2030, by Major Region

A1B



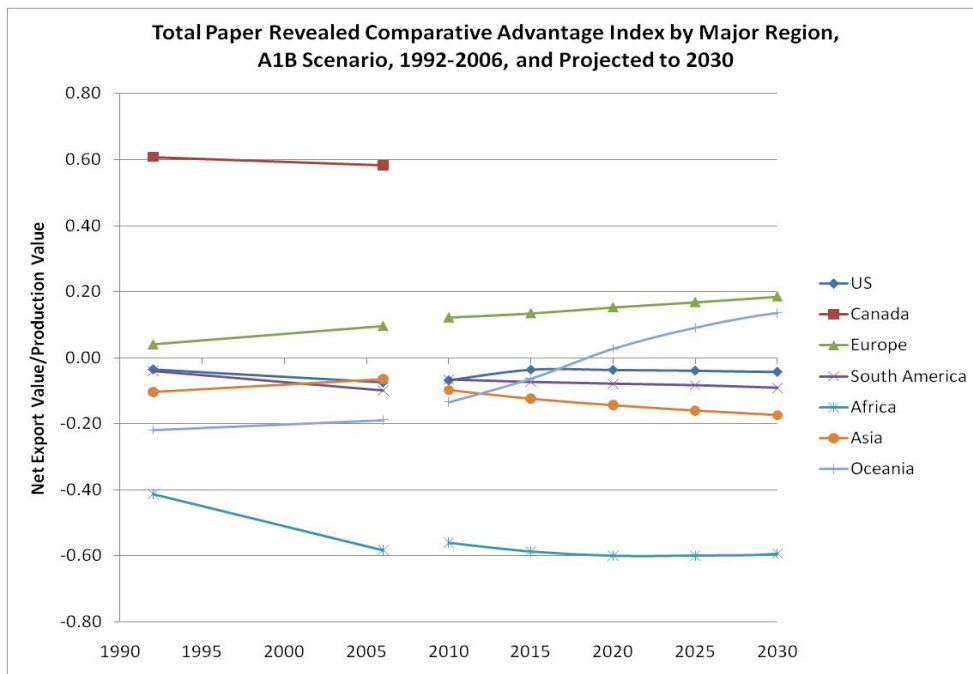
B2



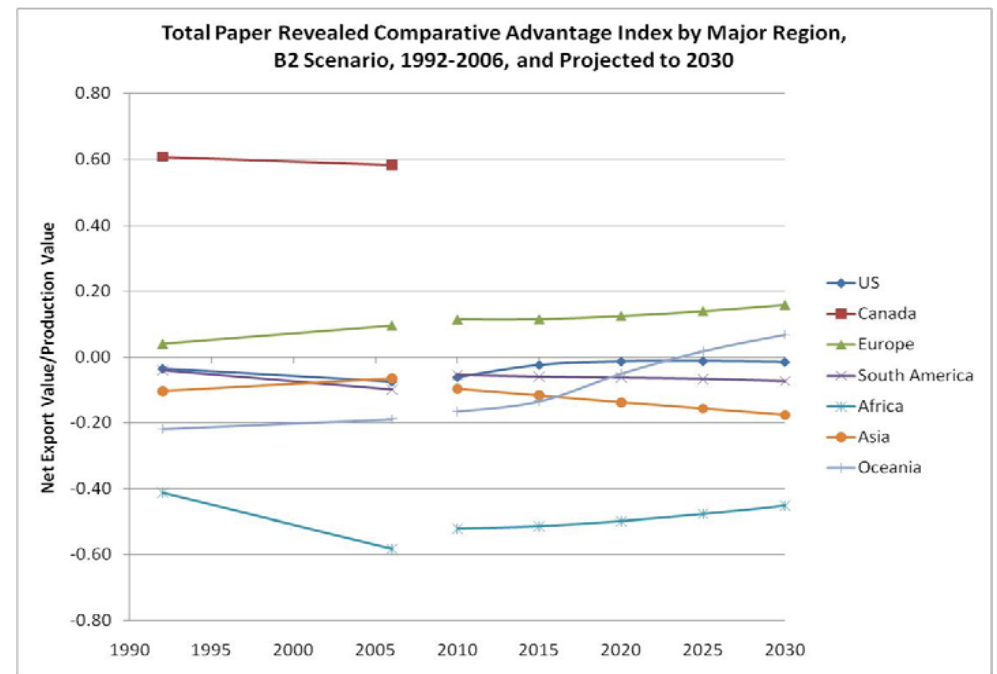
$RCA = \text{Value of Net Exports} / \text{Value of Total Domestic Production}$

# Revealed Comparative Advantage, Total Paper, 1992, 2006, Projected to 2030, by Major Region

A1B



B2



$RCA = \text{Value of Net Exports} / \text{Value of Total Domestic Production}$

# Summary of History and Projections

- US and Canada forest sectors experienced
  - Rising output through the mid- to late-1990's,
  - Slower growth in the 2000's,
  - The Great Recession and the housing crash of late 2000's
- Projections indicate for the US continued growth in output, except in wood pulp
- Prices remain stable or decline into the future, perhaps after some recessionary recovery
- A special analysis of comparative advantage indicates convergence in sawtimber, stasis in paper but some pickup for the US

# Next Steps

- Complete reviewable projections for the US
  - May 2011
- Have Canadian review of NAFSOS projections
  - Make revisions accordingly (and possibly revise US again)
  - July 2011
- Complete Appendix Analyses
  - October 2011
- Write
  - Ongoing, completed by December 2011
- Publish
  - Early 2012

# Q & A

Jeffrey P. Prestemon,  
US Forest Service  
[jprestemon@fs.fed.us](mailto:jprestemon@fs.fed.us)