Analyzing and Influencing Carbon Sequestration in Harvested Wood Products

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Abstract

- Information is intended to aid in international discussions and any agreements about managing greenhouse gas emissions and sinks.
- Also provides national level methods and estimates of carbon sinks and emissions associated with HWP.
- The package provides quick accessibility, allowing data to be updated, modified, and manipulated with ease.

Introduction

- Sequestration of carbon in forests is a process that can pull large quantities of carbon out of the atmosphere or prevent its release to the atmosphere, 87% of total CO_2 removals in 2014. Carbon mitigation efforts have thus focused much attention on reforestation, forest management,and forest based products. According to the most recent report to the **UNFCCC**, an estimated 18.7% of the total carbon in woody materials is contained in harvested wood **(HWP and SWDS).**
- The amount of carbon in **HWP** and **SWDS** depend on how much wood is harvested, what types of products are produced, how the products are use, the lifetime of the wood products, and how the wood is processed at the end of its primary product lifetime.

Sources of Data and Equations

I. WOODCARB II Software in Microsoft Excel®
Note: Base level data was given in spreadsheet.

II. Harvest Quantities:

$$E = mc^2 \quad (1)$$

III. Imports, Exports, etc.:

IV. Decay of HWP:

Methodology (what we did)

- We have translated WOODCARB3 spreadsheet models into an R package.

Uncertainty Analysis

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Projected Carbon Contribution

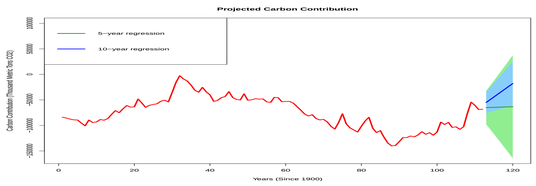

Figure: Figure caption

Future Plot and Targeted Change

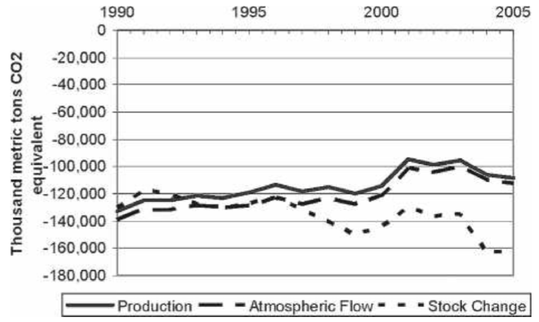

Figure: Figure caption

Total HWP Carbon Stocks with Uncertainty

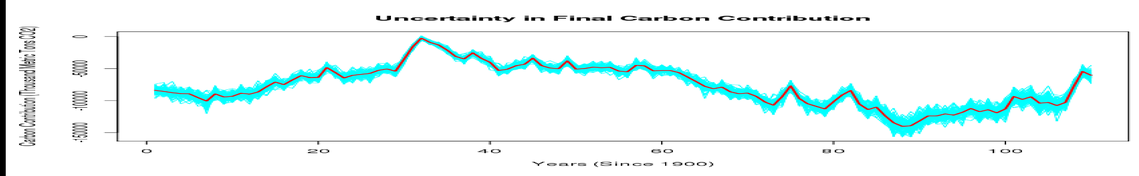

Figure: this is the caption that shows what is in the figure that explains the plot of HWP stocks and provides and envelope of uncertainty around it this is the caption that shows what is in the figure that explains the plot of HWP stocks and provides and envelope of uncertainty around it

Discussion

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Sensitivity Analysis

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Sensitivity Plot

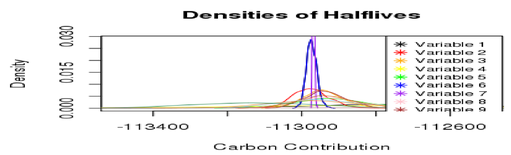

Figure: Figure caption

Sensitivity of Input

Decay

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Decay of Hardwood in Multifamily housing

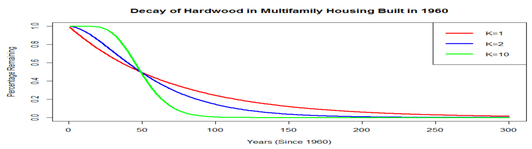

Figure: This figure shows the over effect of the decay function on multifamily housing built in 1960

Overall Decay

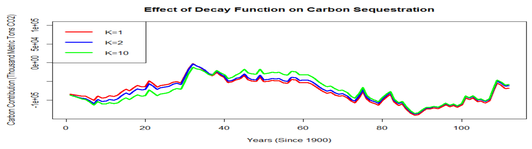

Figure: This figure shows the over effect of the decay function on Carbon Sequestration

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Access to Package and Webpage

- Online link: WOODCARB3R package
- Instant access: