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Biomass Carbon Neutrality

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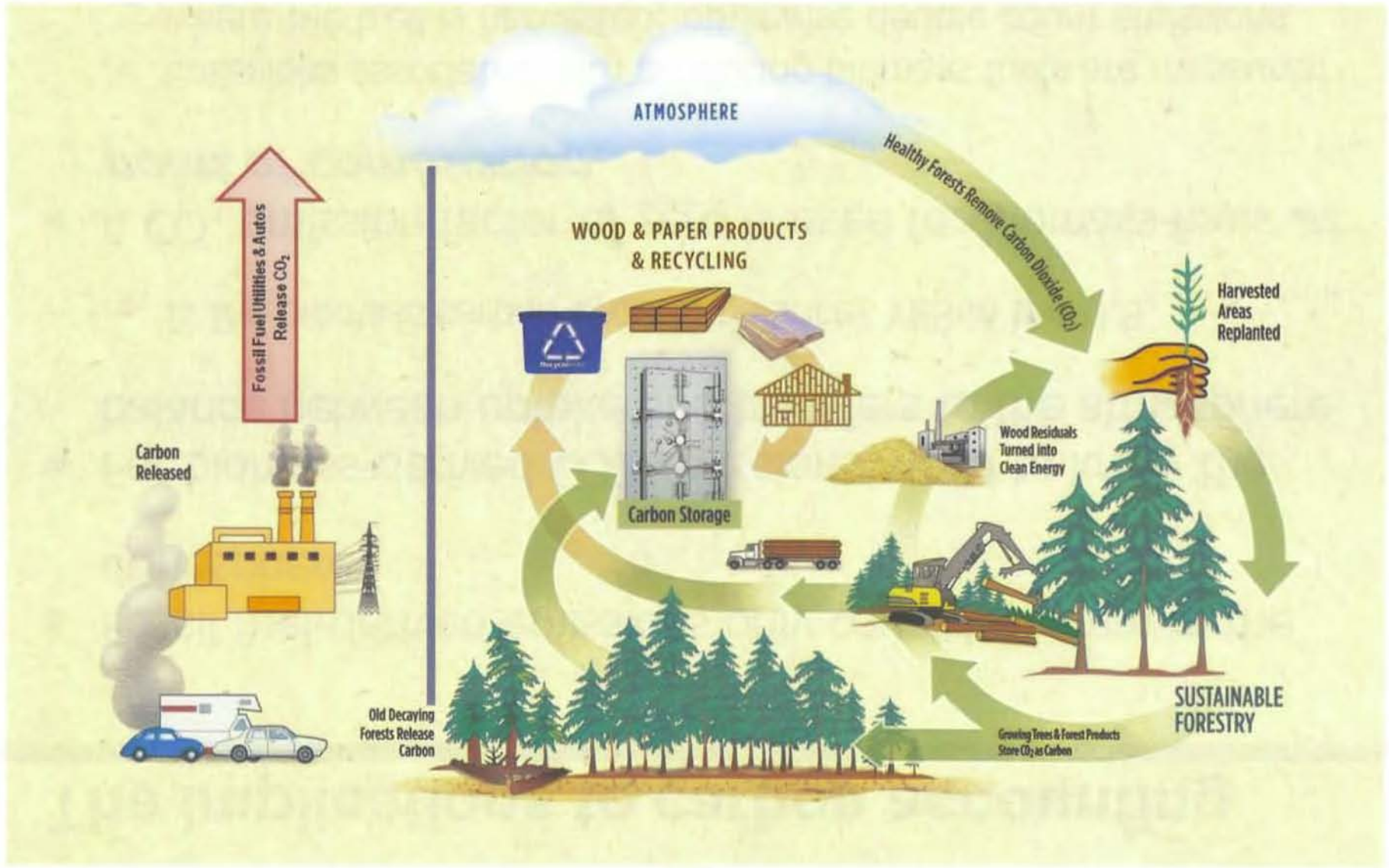
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What is Biomass Carbon Neutrality?

- Differentiates between biomass-derived carbon from fossil-fuel carbon – highlights role in the global carbon cycle.
- Part of a relatively rapid natural cycle that neither adds nor subtracts carbon to/from the atmosphere when in balance.
- The carbon dioxide (CO₂) removed from the atmosphere during photosynthesis is converted into organic carbon and stored in biomass, such as trees and crops.
- When harvested and combusted, or during decay, the carbon in the biomass is released as CO₂, thus completing the carbon cycle.

Fossil Fuel Releases

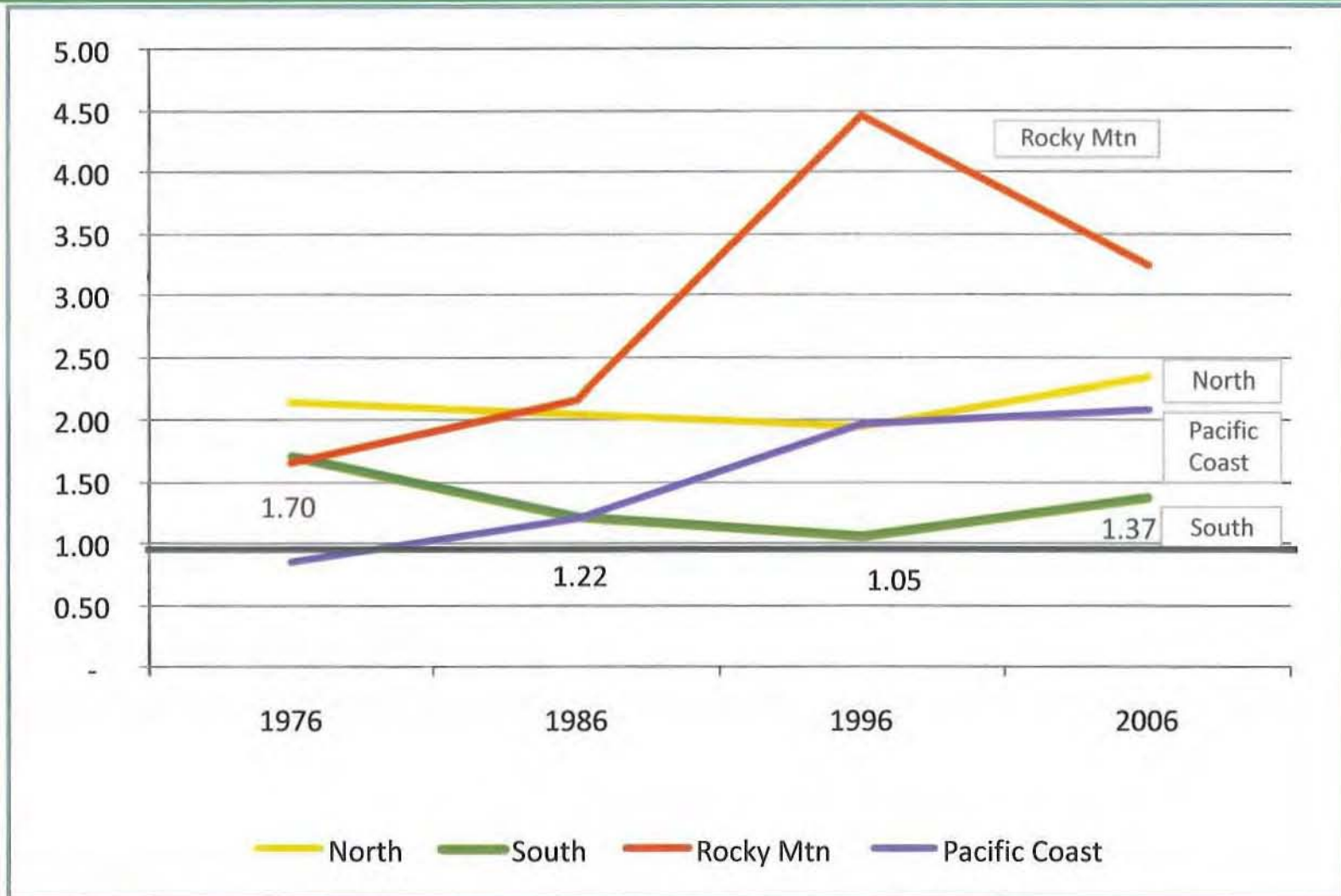
Biomass Carbon Cycle



The implications to carbon accounting

- Fossil fuel-derived emissions only count transfers to the atmosphere
- For biomass-derived CO₂ emissions, need to know the balance between uptake and transfers to the atmosphere
 - Is the biomass carbon cycle in balance? YES in the U.S.
- A CO₂ emission factor of zero is used for biomass fuels ***at point of combustion.***
 - Emissions associated with producing biomass fuels are measured where the tree is harvested; otherwise double count emissions.

Timberland Growth/Removal Ratio By Region



• Growth-removal ratio is calculated based on annual growth on timberland divided by annual removal as of reported years. No specific data for growth and removal in between reported years.

Source: Forest Resources of the United States, 2007 – Table 36

Longstanding and Widely Established Principle

Organizations recognizing the carbon neutrality of biomass emissions include:

1. UN Intergovernmental Panel on Climate Change
2. European Union Emission Trading System
3. U.S. Environmental Protection Agency (RFS and GHG Reporting Rule)
4. EPA National GHG Inventory
 - Does not count emissions from combustion of biomass
 - Rather, counts biogenic emissions as part of land use change
 - Shows land use in U.S. to be significant net carbon sink

Unintended Negative Consequences

1. Would need to redesign Cap and Trade legislation and programs (all based on fossil fuel emissions only)
2. Eliminates CO₂ emission reduction strategies
3. Unlevel playing field and uncertainty for users
4. Re-examine Renewable Electricity/Fuels Standards
5. Increased environmental impact of fossil fuel use
6. Lack of biomass markets promotes land use change to non-forest uses
7. Renewable energy markets will be deterred

Bottom line: Economic and job dislocation will occur

Biomass CO₂ Neutrality and Climate Regulation

- Clean Air Act – wrong tool for controlling GHGs
- Endangerment Finding and Tailpipe rule
 - AF&PA comments supported carbon neutrality of biomass combustion in U.S.
- Tailoring Rule
 - EPA should exclude biogenic emissions from major source threshold and significance test - regardless of the level
 - 150 additional wood product mills could be regulated
 - Hundreds of biomass projects at pulp and paper mills
 - Support delayed implementation of BACT to smooth transition

Biomass CO₂ Neutrality and Climate Regulation and Policy

- Biofuels should be considered clean fuels in BACT – avoid review
- EPA has distinguished different pollutants within a class before so has legal basis for biomass carbon neutrality
 - VOCs based on reactivity or particulates based on size
- No consensus in BACT workgroup – alternative is an unworkable case by case life cycle assessment to demonstrate neutrality
- In RFS, forest residual cellulosic biofuel meets advanced biofuel criteria – expect the same for other woody biomass
- RES - Biomass qualifies as “Renewable Energy”
- Renewable energy mandate should balance supply and demand – if out of balance, explore policies that encourage supply responses

Summary

- Reaffirm biomass neutrality for Tailoring rule
 - Biomass CO₂ Global Warming Potential = zero
- Reinforce efforts to increase biomass supply and sustainable use of the resource without negating carbon neutrality
- Support higher cutoffs (100K) to help with transition to GHG BACT permitting but the more time the better