

# Opportunity or Crisis: Forest Management and Climate Change

2008 Sierra Nevada Alliance  
Conference

Peter Miller, NRDC

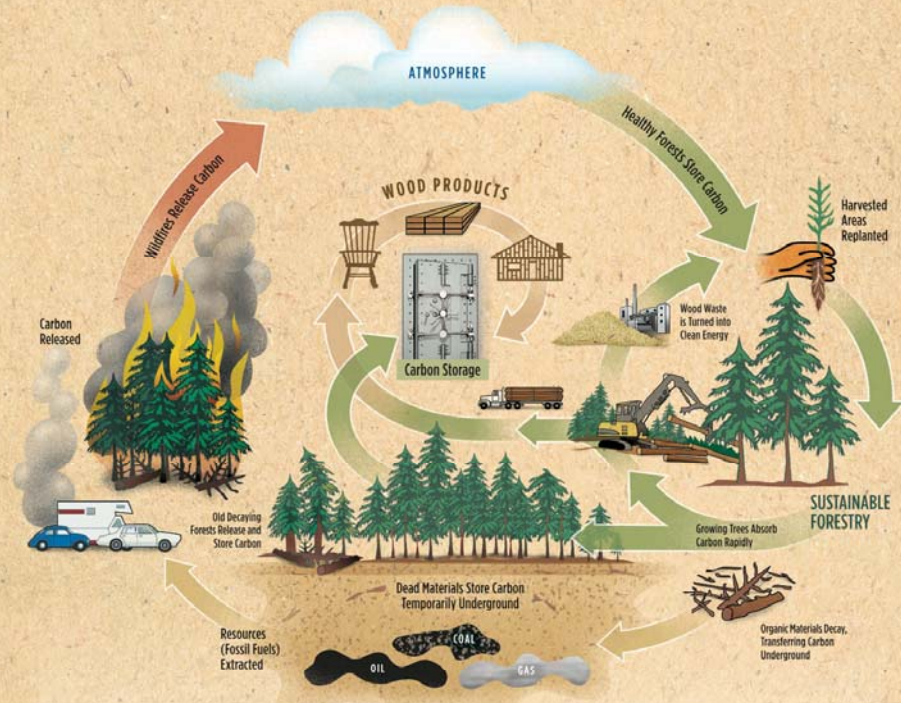
September 14, 2008

- Good accounting
- Magical thinking
- Example: SPI Report
- Conclusions

- Tendency towards magical thinking in forest sector
  - Forest products don't last forever.
  - Stocks matter more than rates
  - Fires occur intermittently and randomly across vast landscape (0.3 TC/ac/yr)
- Good accounting makes a difference

# The Carbon Cycle

## FORESTRY NEVER LOOKED SO COOL



### Carbon Released

Catastrophic fires release carbon that has been stored in trees into the atmosphere. Manufacturing and automobiles also contribute carbon to the atmosphere by burning fossil fuels. Natural processes like volcanoes and decomposition also release carbon to the atmosphere.

### Carbon Absorbed

Young, healthy forests absorb carbon more rapidly than older, dense forests. Older forests release carbon at the same rate that they absorb it, neutralizing their effect on global warming. Sustainably managing forests is an effective way to store carbon. Trees also produce oxygen that we all need.

### Carbon Stored

As a tree grows, it stores carbon in its trunk, branches and roots. Sustainably managed forests continuously store and absorb carbon. Trees store carbon for a long time. When trees are harvested, the carbon continues to be stored in wood products. Harvested forests are replanted and the cycle begins again.



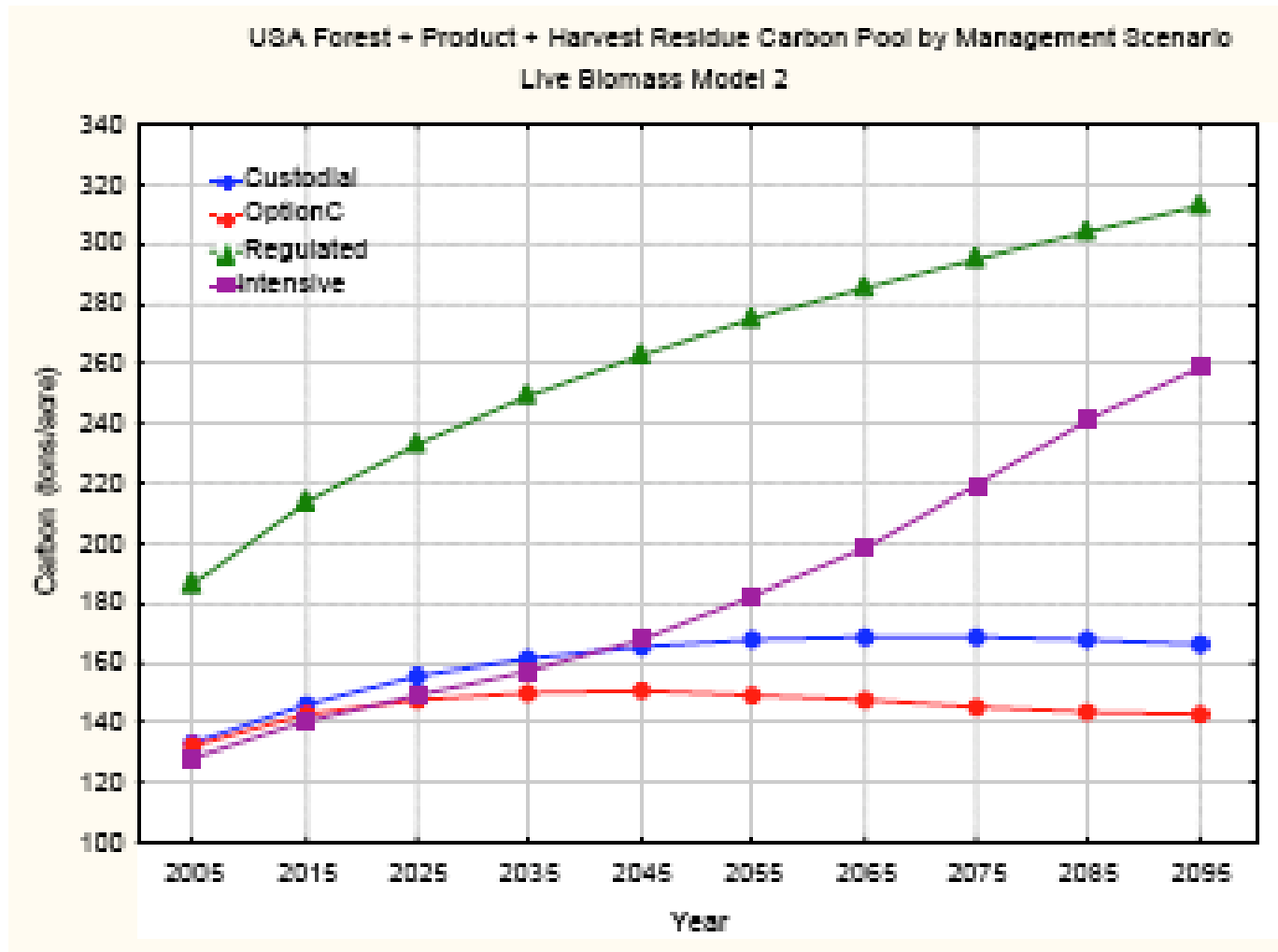
# **Carbon Sequestration in Californian Forests: Two Case Studies in Managed Watersheds**

**By James, C., Krumland B., and Eckert, P.J.**

**December 12, 2007**

- Modeling study of how “forest management approaches affect carbon sequestration within each watershed.”
- Evaluated three different statistical growth models
- Two forested watersheds in California
  - Upper San Antonio Creek, Calaveras Cty.
  - Canyon Creek, Shasta Cty.
- Four management scenarios
  - Custodial: 1% harvest/year
  - Option C Selection: Maximum harvest allowed under Option C with natural regeneration.
  - Intensive: Even-aged plantation, reforest 12.5% per decade to maximum under Option A.
  - Regulated: Maximum sustained yield at equilibrium.

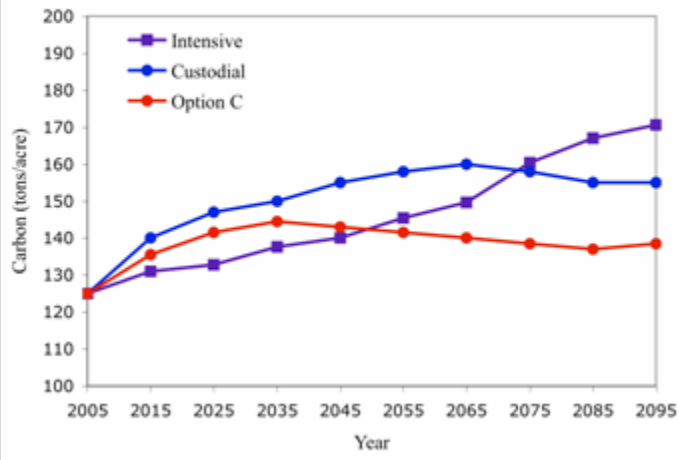
# Upper San Antonio Creek Watershed Total Carbon Pool



However,

- Authors acknowledge statistical model violates necessary conditions
- Emissions from logging, transport and processing are ignored.
- Soil carbon levels assumed to be affected by management.
- Forest floor carbon assumed to be unaffected by management.
- High average lifetime assumed for all wood products (half-life of 70 years).
- Landfills assumed to have zero emissions.
- Reported results based on outlier of three biomass models tested.
- Results reported for final carbon levels, rather than average.
- Study ignores fire.
- Study ignores environmental effects other than carbon sequestration.

Upper San Antonio Creek Watershed Total Carbon Sequestration



# Conclusions

- Accounting matters
- Need science-based policy

## Canyon Creek Watershed Total Carbon Pool

