

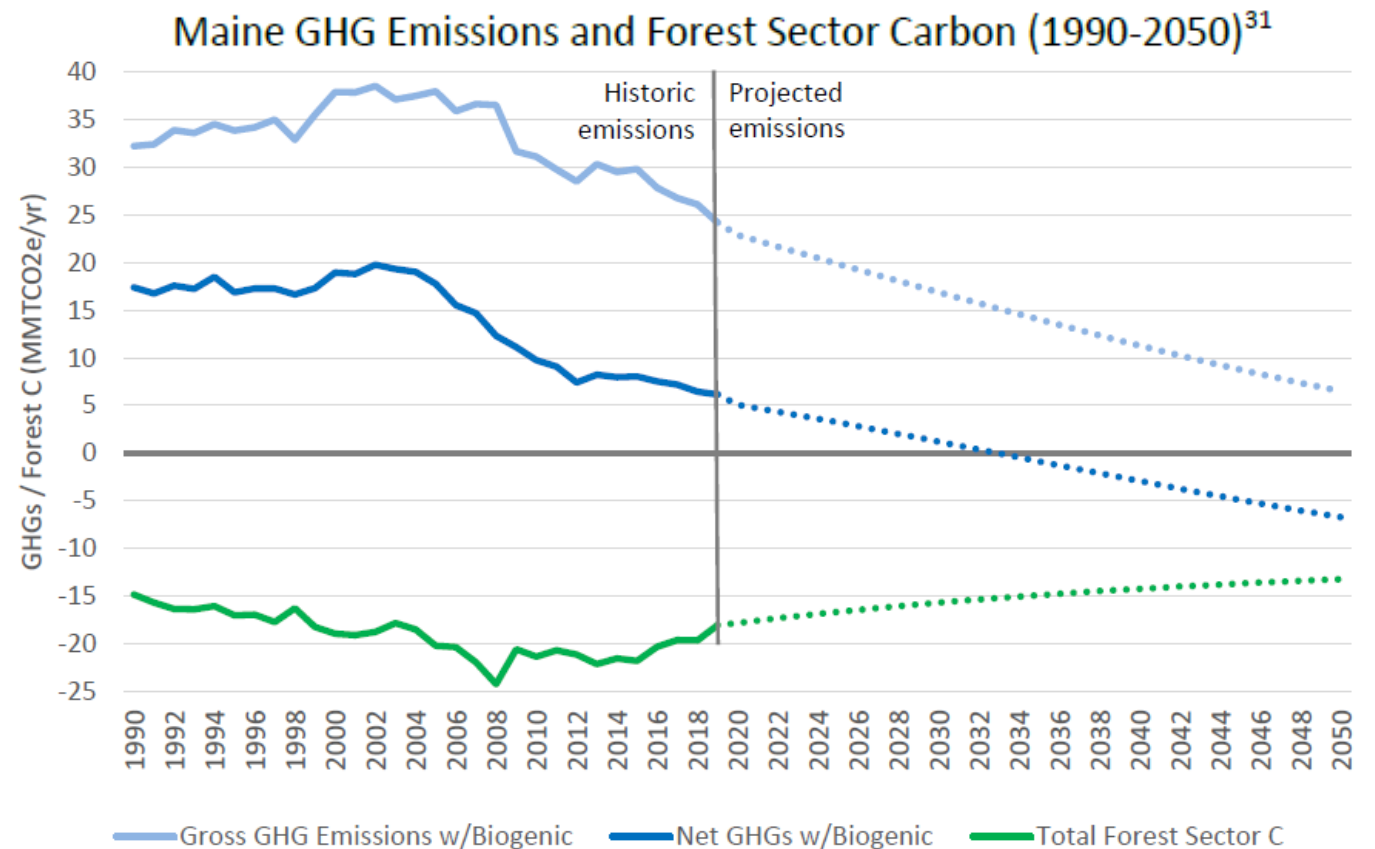
# 2023 MCC STS Forests Chapter Draft Science Assessment Highlights

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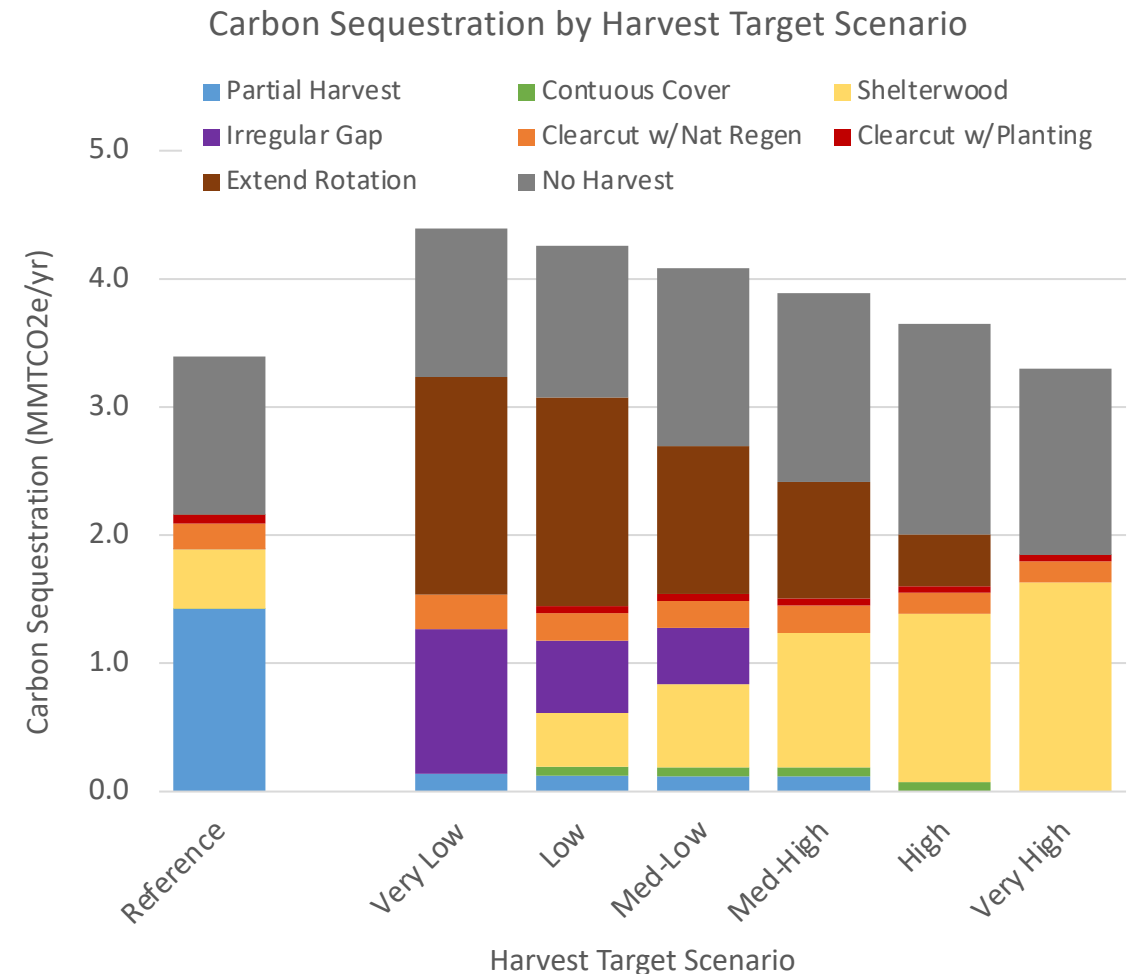
# Forest & Wood Products are the TOP contributor to ME's Carbon Neutrality Target

- Maine's forests and harvested wood products sequester and currently store about 13.6 MMTCO<sub>2</sub> annually. Of that total, approximately 10.8 MMTCO<sub>2</sub>/yr is added to forest biomass and soils, while the remainder (2.8 MMTCO<sub>2</sub>/yr) is stored in longer-lived wood products.
- According to the state's 9th Biennial GHG report, the total carbon sequestration in the forest sector offsets approximately 75% of the gross anthropogenic GHG emissions for Maine.



# Future Role of Forests & Forest Management

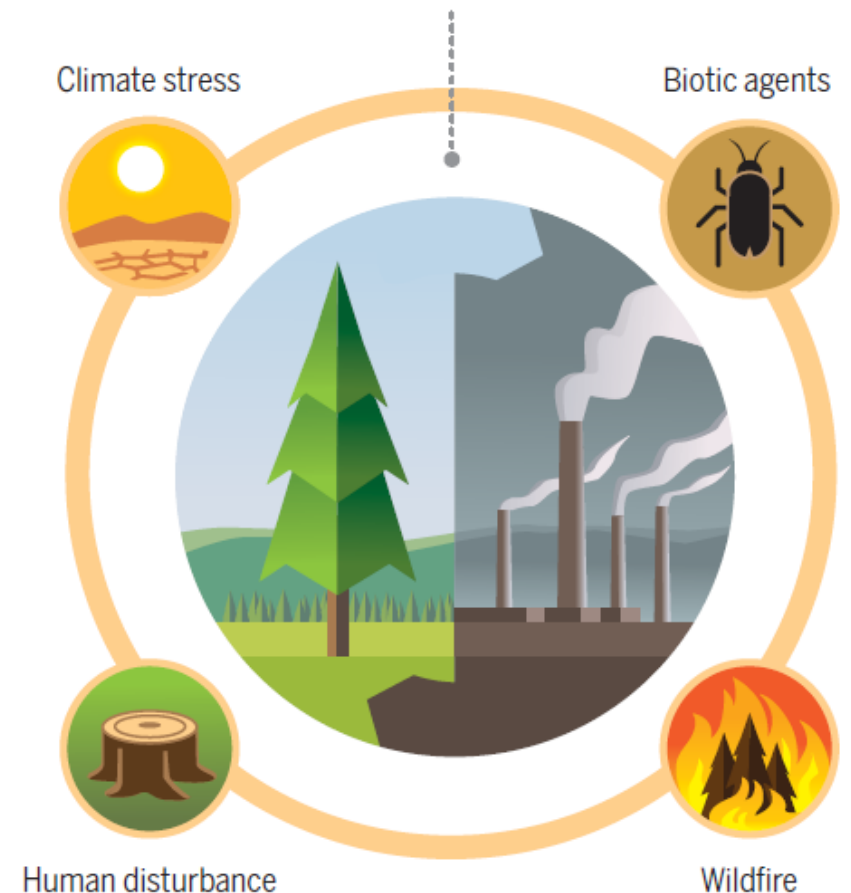
- While Maine's forests are a large net sink, the state's forest ecosystem will not be able to maintain this sequestration rate in the future without significant changes to how the forest is both actively and passively managed.
- Maine forests can potentially increase carbon sequestration by another 20% or more without reducing timber harvest through changes in the distribution of forest management practices implemented across the landscape.
- Large carbon gains could be made by managing our forests using a 'triad' approach containing uneven age continuous cover, intensive plantations, and permanent set-asides.



# Climate Change Impacts on Forests

- Forest managers continue to list the greatest and most likely climate change impacts on the forest industry as: forest health threats imposed by insects and pathogens, extreme precipitation events, shifts in forest composition, invasive species, and changes in forest productivity.
- Specifically, increases in winter freeze-thaw cycles have increased, leading to difficulties related to scheduling and implementing forest harvesting and management at times of the year that were historically more predictable.
- Where these factors result in decreasing the amount of carbon uptake, this reduces the mitigation potential of forests and thus requires greater reductions in gross emissions in order to meet the state's net zero targets.

Forests as natural climate solutions face fundamental limits and underappreciated risks



# Other Important Points to Consider...

- Predicting our forest's response to climate change continues to be complex and difficult to predict given the range of conditions and tree species currently present in Maine's forest.
- The future of Maine's forests will be influenced by both socioeconomic factors as well as climate change.
- Maine's forest productivity will continue to vary across space and time.
- Recent studies indicate that increased risk of pest, disease, and pathogens could reduce the resilience of Maine's forests, thereby affecting potential to sequester carbon
- Large-scale, catastrophic wildfires are unlikely in Maine for a range of future climatic conditions, some Maine forests have characteristics that are similar to the Acadian forests that recently burned
- Inconclusive evidence on the impact of forest management and harvesting operations on forest soil C.