



# Sustainable Biomass Supply for Katahdin Region

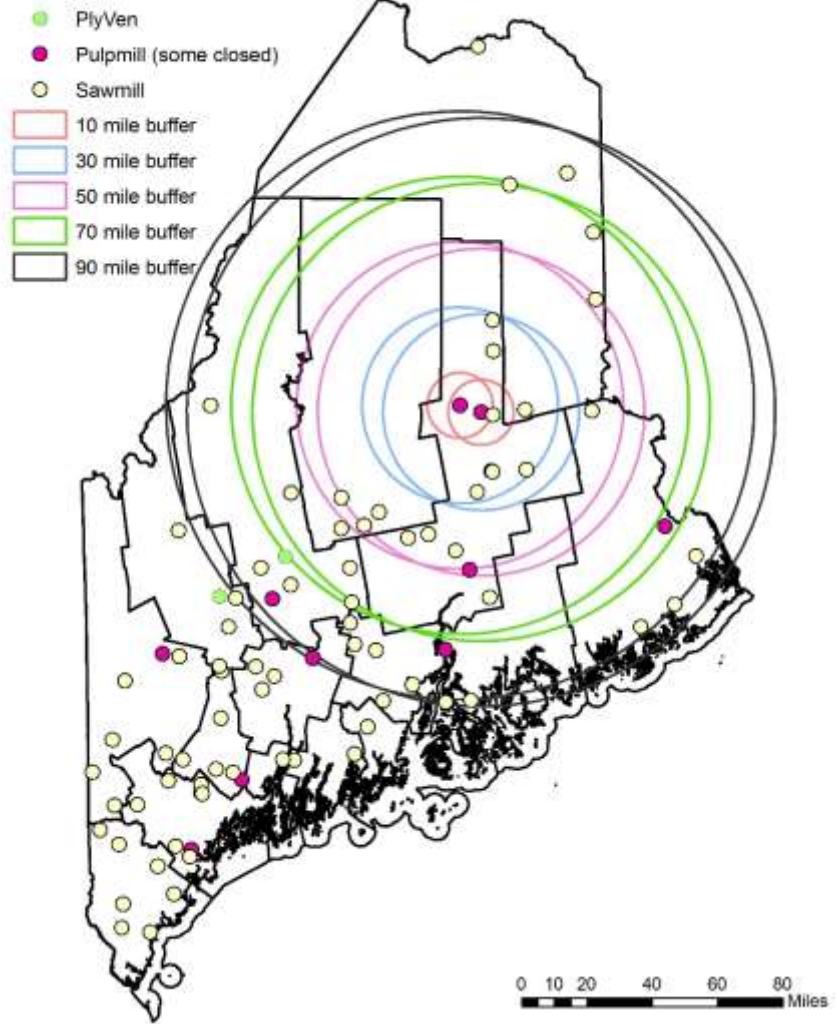
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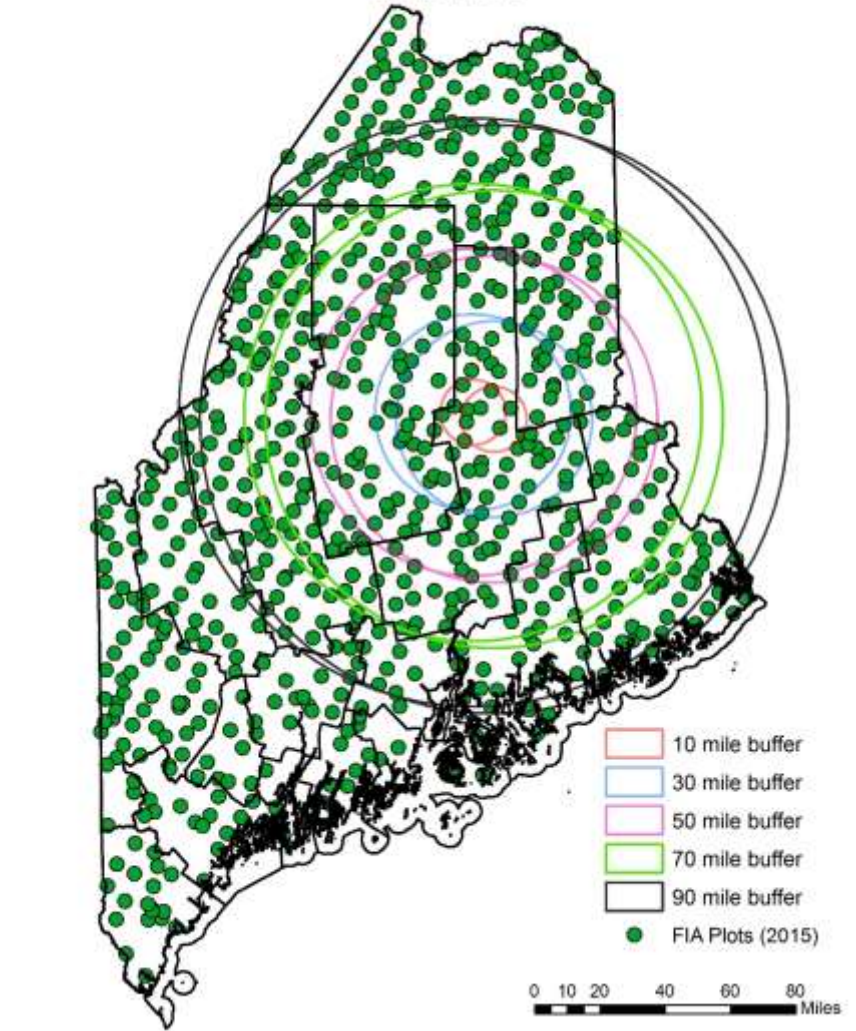
# Methodology

- Data: USDA 2015 Forest Service Forest Inventory Analysis
  - 700+ plots across the state of Maine
  - Key variables: tree count, growing stock, removals
- ‘Sustainable’ biomass supply based on Rubin et al (2015) includes:
  - Limbs and tops
  - Unmerchantable cull trees (rough and rotten)
  - Sapling biomass
- Delivered cost of biomass based on Whalley et al (2017)
  - Biomass stumpage
  - Harvesting and chipping, including machinery
  - Transport/Trucking
- Current approach does not directly account for potentially competing uses

Millinocket and East Millinocket Wood Supply Buffers  
 10-90 mile radii

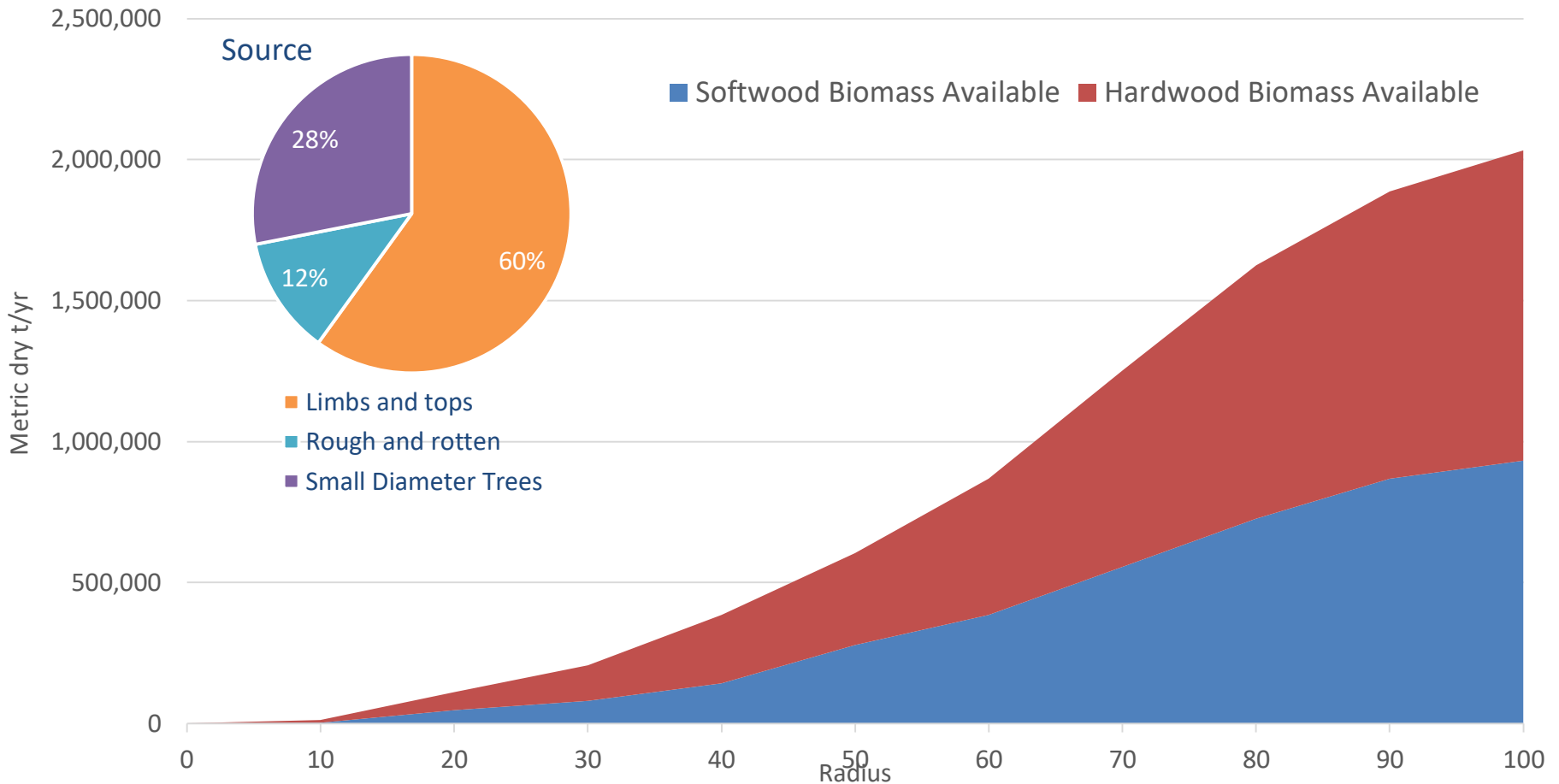


Forest Inventory Analysis  
 2015 Plots



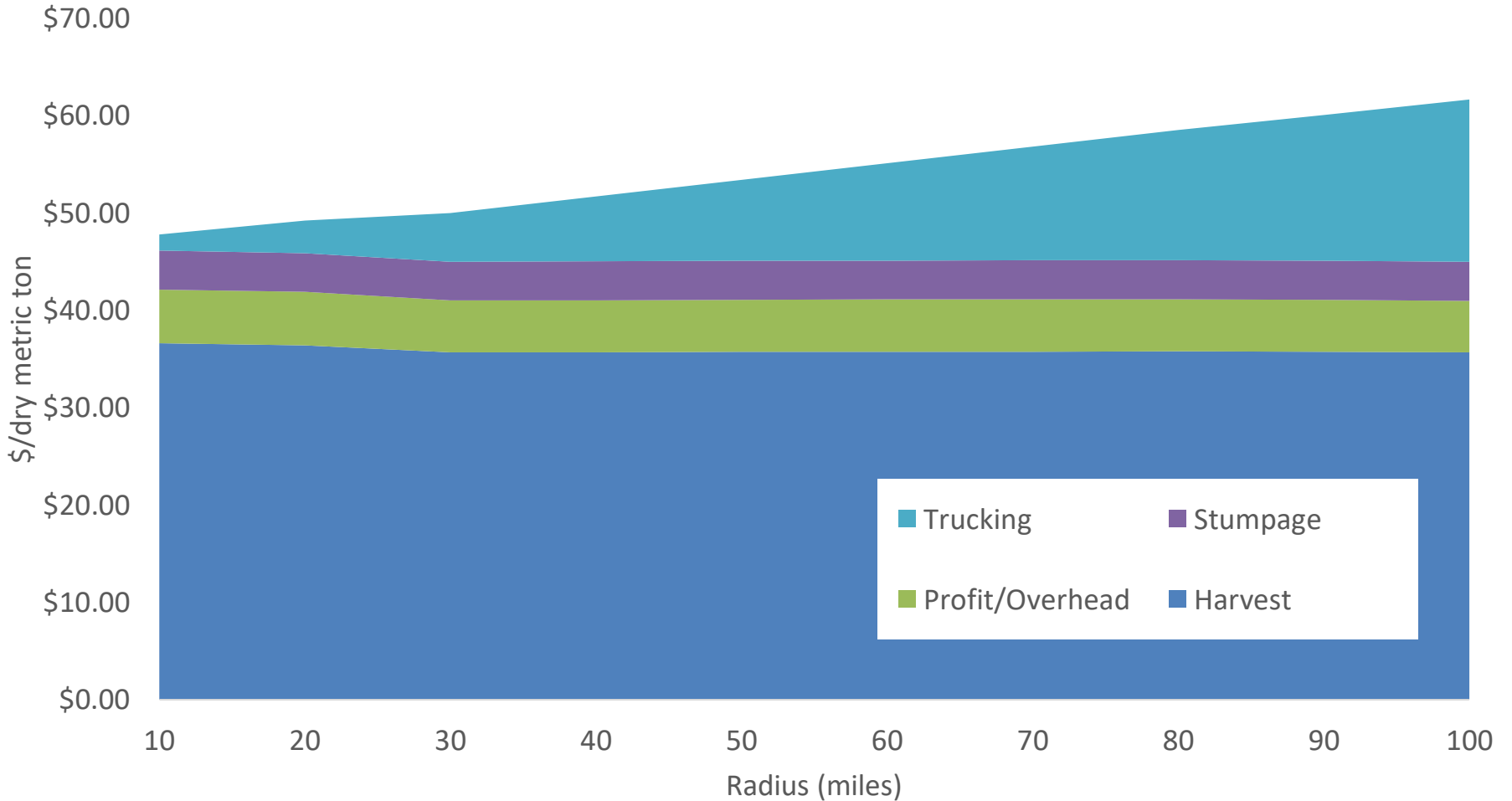
# Millinocket Biomass Supply Potential

Total Annual Biomass (metric dry t/yr)



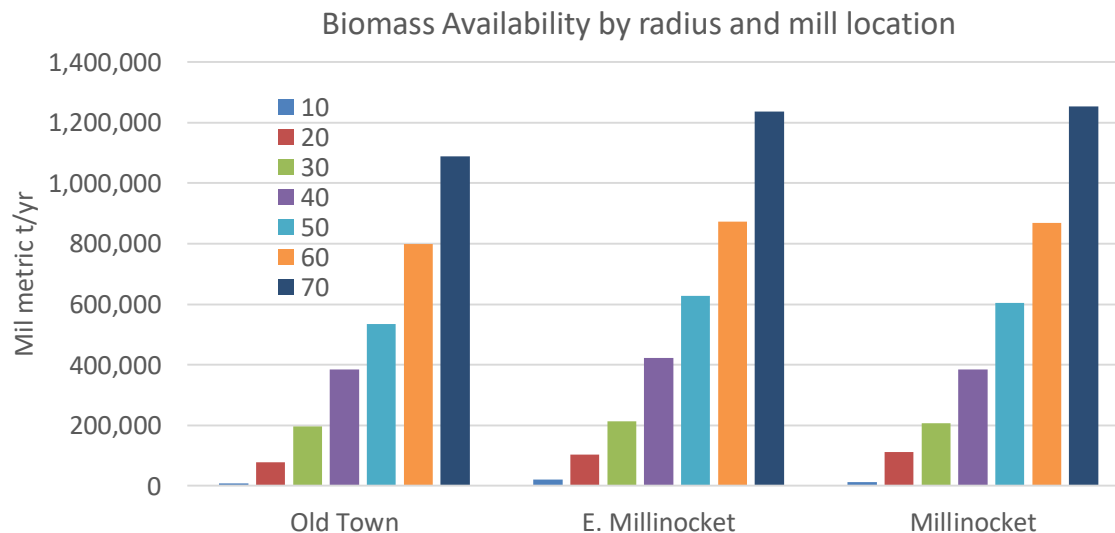
**DRAFT – DO NOT CITE OR QUOTE**

### Biomass Cost (\$/dry metric ton), Harvest to Gate Millinocket Estimate



# Preliminary Findings

- Relatively abundant ‘sustainable’ biomass available for region
  - 30 mile radius: 1,100 metric dry tons/day
  - 50 mile radius: 2,500 metric dry tons/day
- Costs vary primarily by transport distance, average tree diameter
  - Mean delivered cost of \$55/dry metric ton
- Still need to consider other competition for biomass, especially with large radius



# References

Rubin, J., Neupane, B., Whalley, S., & Klein, S. (2015). Woody Biomass Supply, Economics, and Biofuel Policy: Maine and Northeastern Forests. *Transportation Research Record: Journal of the Transportation Research Board*, (2502), 108-115.

Whalley, S., Klein, S. J., & Benjamin, J. (2017). Economic analysis of woody biomass supply chain in Maine. *Biomass and Bioenergy*, 96, 38-49.