

Carbon Inventory Potentials in California's National Forests

California Air Resources Board
Forest Inventory Symposium
October 19, 2009

*Bruce Goines, US Forest Service, PSW Region
Ecosystem Services Group Leader*

Overview

- ❑ Brief background and context for analyzing public forest carbon
- ❑ Present teams findings
- ❑ Discuss program implications

Forest Service Lands in California



- 20 Million acres in CA
- Half of California's forest lands
- Managed for multiple resource values

Why Analyze California NF's Carbon Capabilities?

- Forest Service Chiefs Emphasis Areas
- California-Global Warming Solutions Act
AB32=Aggressive GHG Goals
- Speak of forests in contemporary,
ecologically relevant terms
- Assess potential to participate in emerging
carbon markets

Report Goals and Objectives

- Respond to California forest-based climate change mitigation goals
- Explore Region 5 national forests to provide carbon sequestration and emission reduction benefits
 - How much CO₂ could forests sequester?
 - At what cost?
 - What market value?
 - What associated ecosystem benefits?

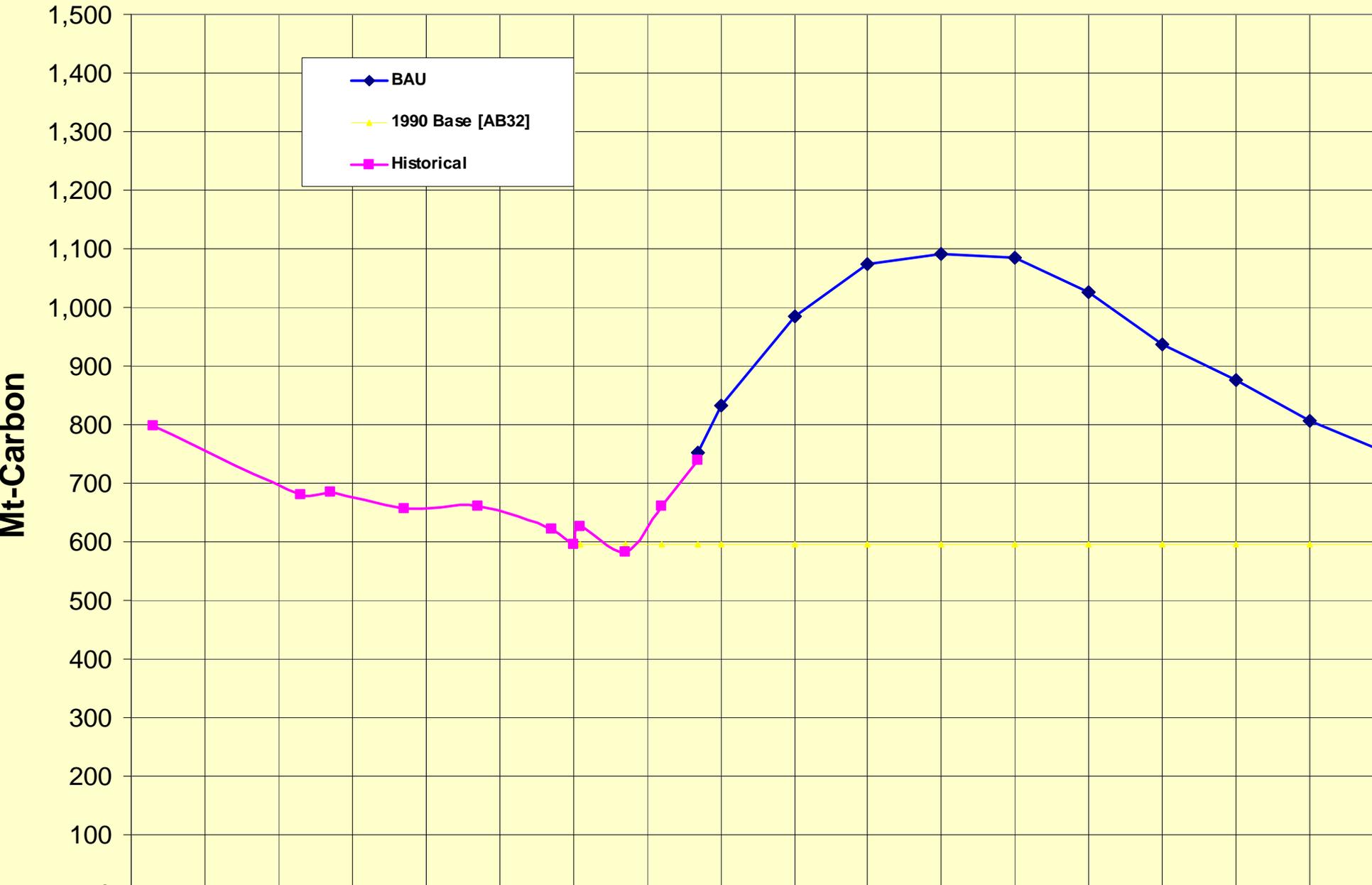
Report Goals and Objectives

- Use best available science and readily available data “Quick Assessment”
- Analyze forests over 100-year timeframe
- Analyze a range of management scenarios to test the “bounds of possibilities”
- Deliver findings and recommendations to Regional Forester and PSW Research Station Director

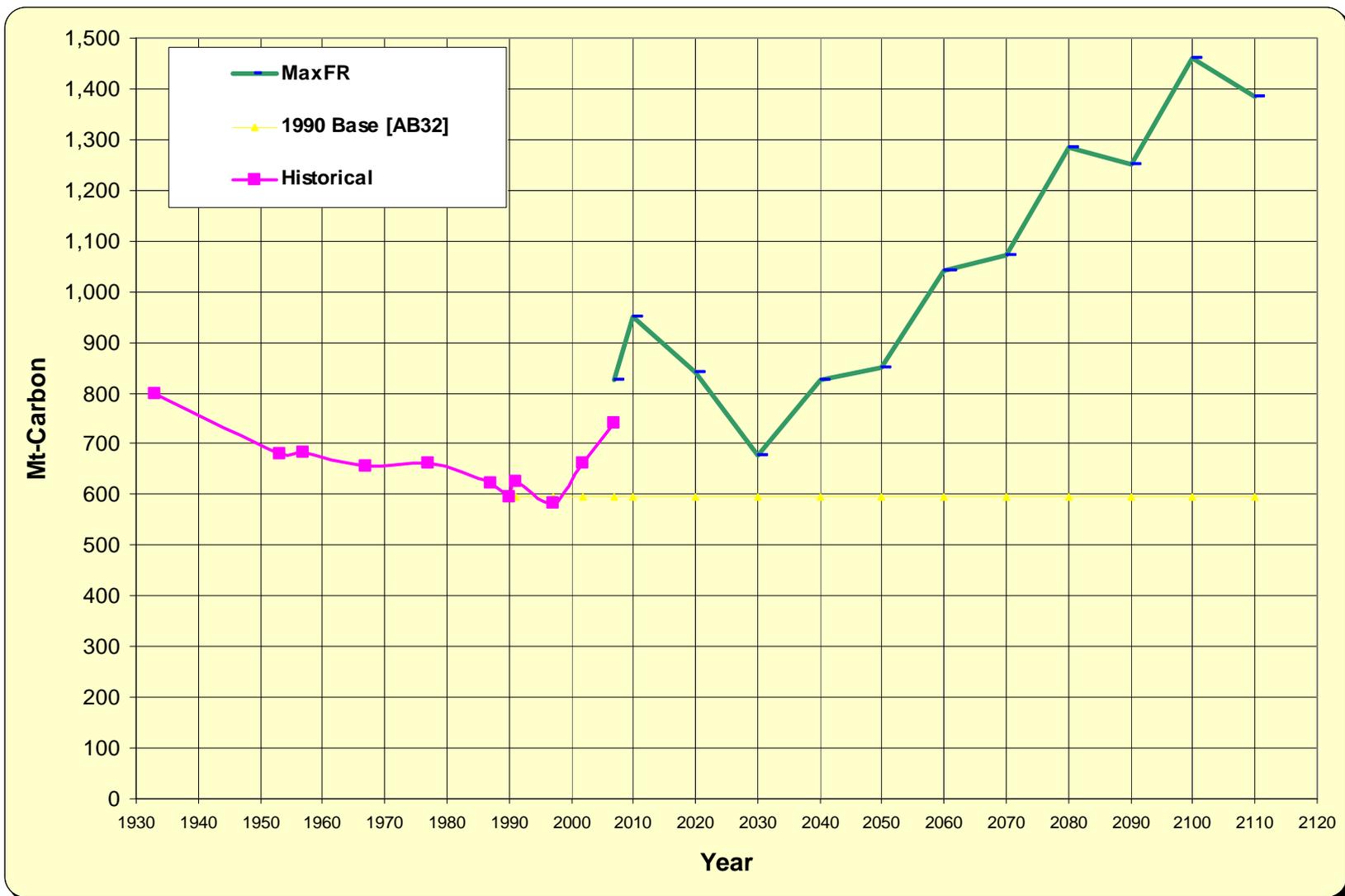
Management Scenarios

- Business as Usual-Current Management
- Business as Usual +Additional Reforestation
- Implement LMP's as Written and Amended
- Maximize Forest Resilience & Resistance to Disturbance

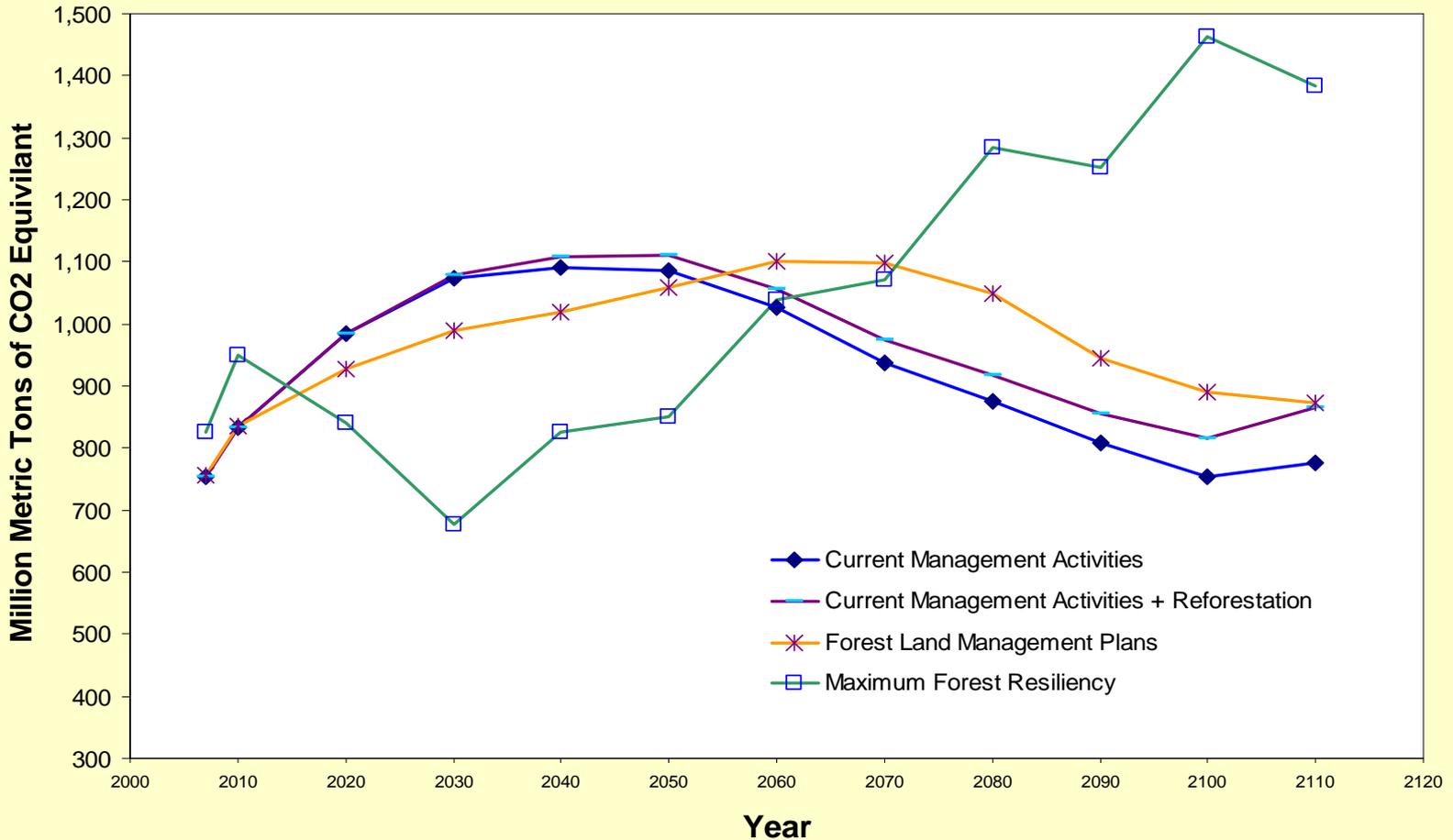
Key Findings-Current Practices:



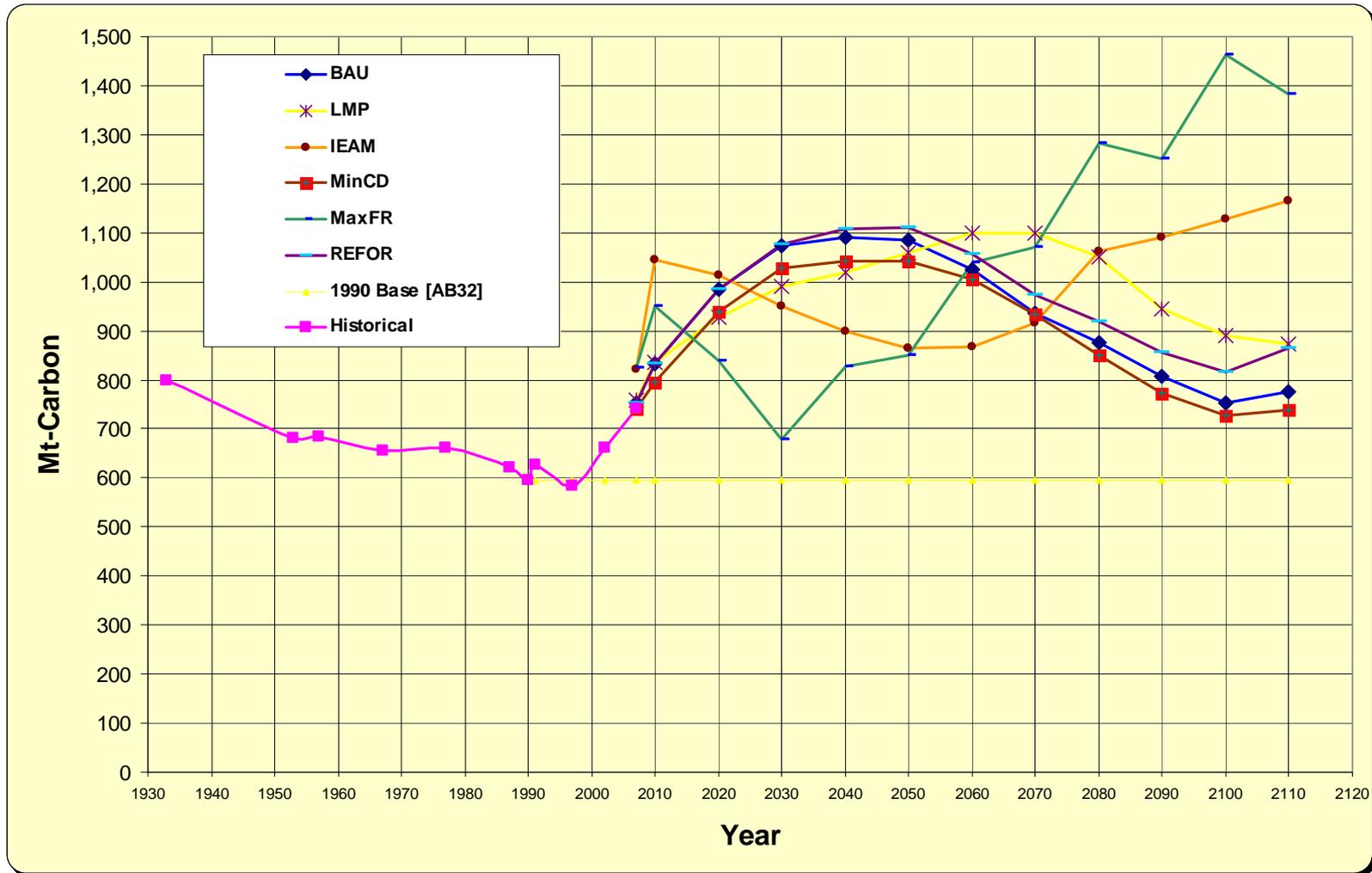
Maximum Forest Resilience Scenario (MaxFR)



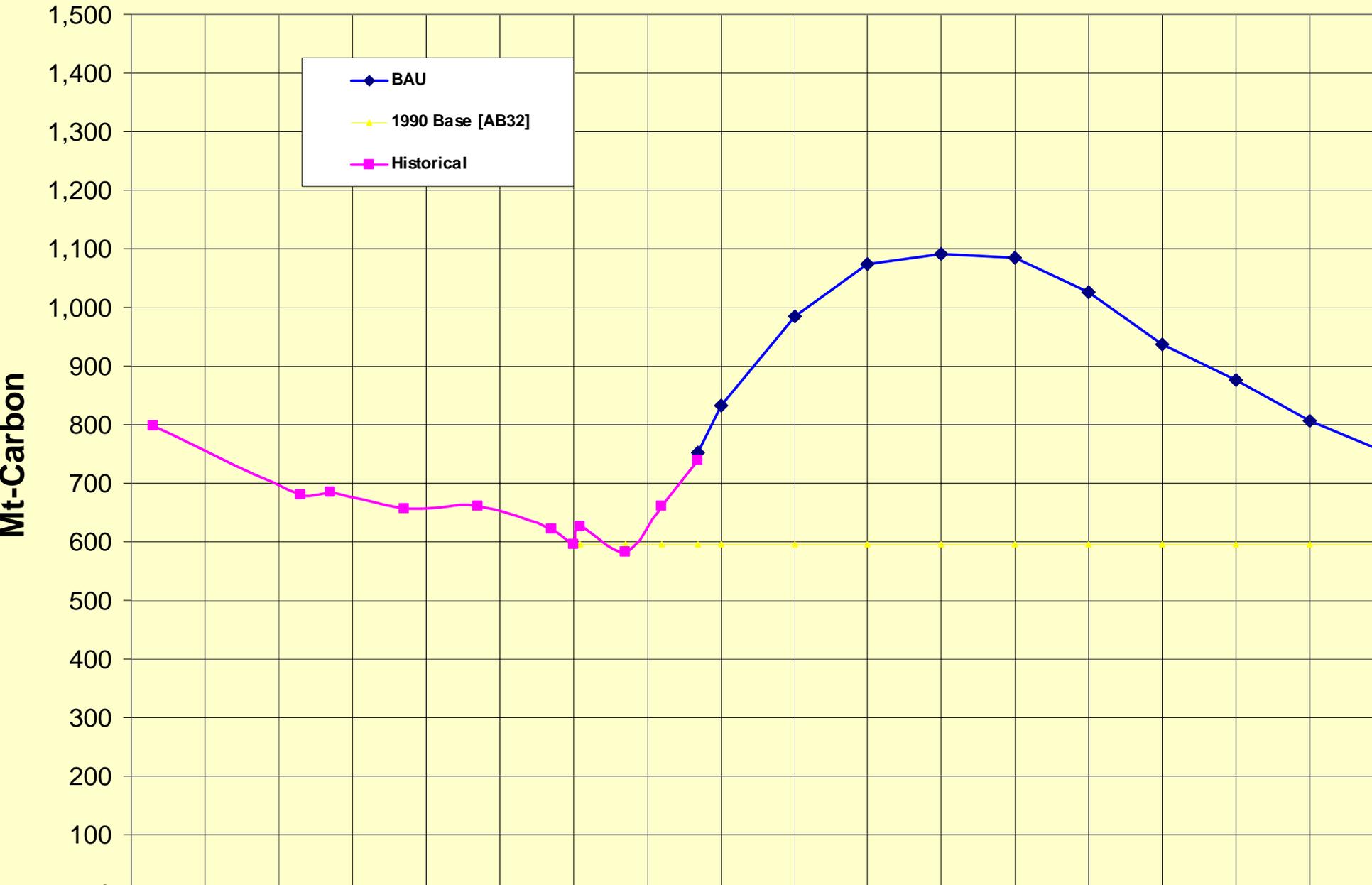
Reforestation, LMP Implementation



All Scenarios with Wood Products and Bioenergy



Key Findings-Current Practices:



Key Findings

1. Two Pathways
 1. Near-term C storage with increased future disturbance
 2. Long-term C storage with long-term resiliency
2. Current practices become unsustainable sometime around mid-century
3. Substantial investment required under all scenarios (carbon values not likely to pay for required management)
4. Need comprehensive analysis of all carbon pools and processes (including wildfire GHG emissions)
5. Unable to analyze ecosystem values (Air, H₂O, Biodiversity, T&E etc)

Take Home Messages

- Current management activities have very little impact on CO₂ storage or disturbance regimes over the next 50-100 years
- Preliminary analysis raises significant questions regarding sustainability of NFS ecosystems under current management practices and program levels
- Opportunity to engage partners/public in sustainability/resiliency discussions/feed into Forest Land Management Plan revisions
- Research investing \$420K for a more comprehensive effort by a nationally-recognized team of experts

Report Available: www.fs.fed.us/r5/climate

