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Forest Carbon in California: creating compliance credits

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Belem, Brazil

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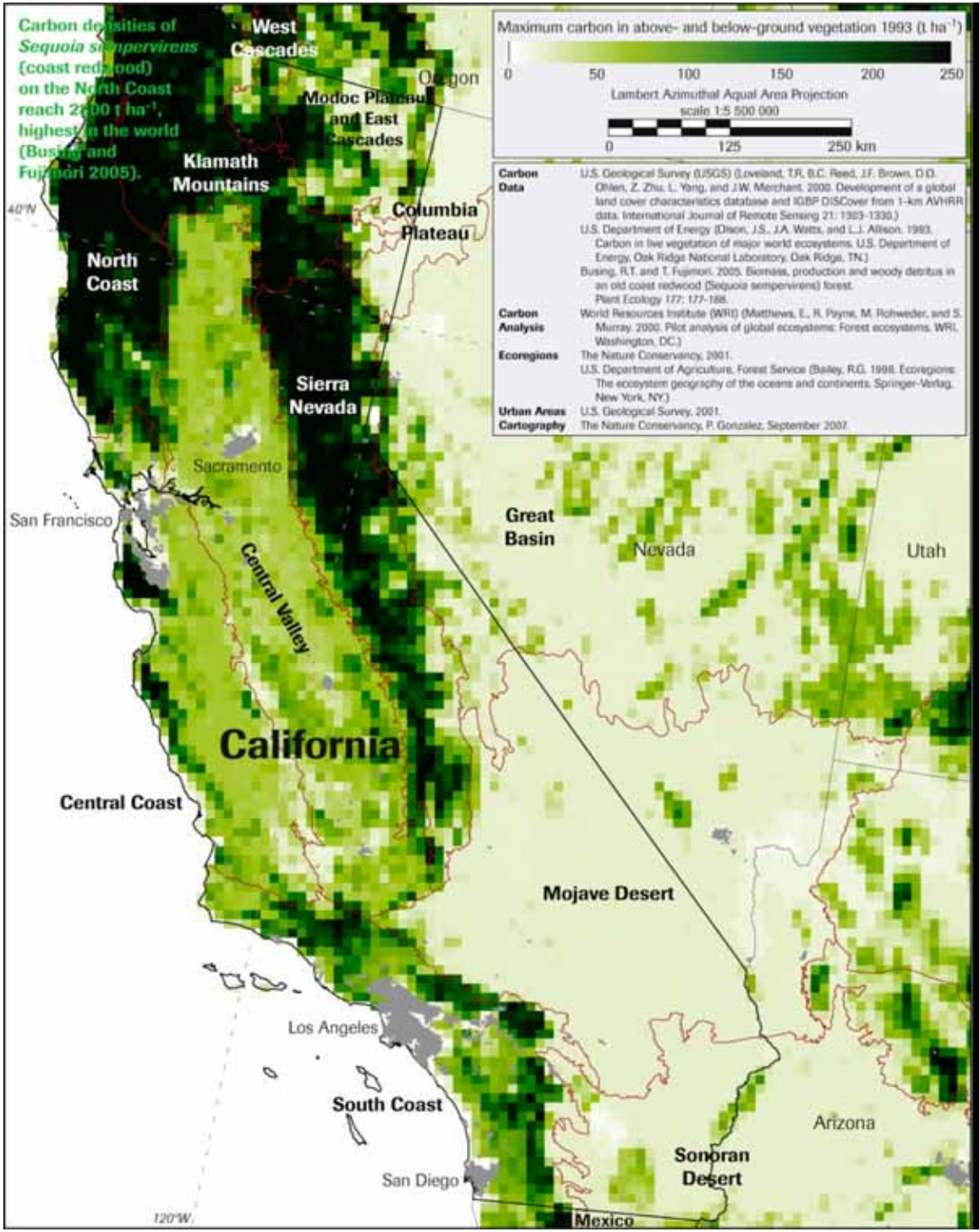
CA Forest Resources

- 12.7 million hectares of forestland
- 6.7 million ha of timberland
- 3.6 million ha public owned timber
- 3.0 million ha private owned



High-Carbon Forests

Coast Redwood forest, California

1600–2800 t ha^{-1}

highest carbon in the world at Humbolt Redwoods State Park (Busing and Fujimori 2005)

320 ± 150 t ha^{-1}

Mailliard Redwoods State Reserve (this research)

100 ± 40 t ha^{-1}

Garcia River forest (this research)

Sierra Nevada conifers, California

160 ± 3 t ha^{-1}

(this research)

Amazon rainforest

170 ± 9 t ha^{-1}

(Baker et al. 2004)

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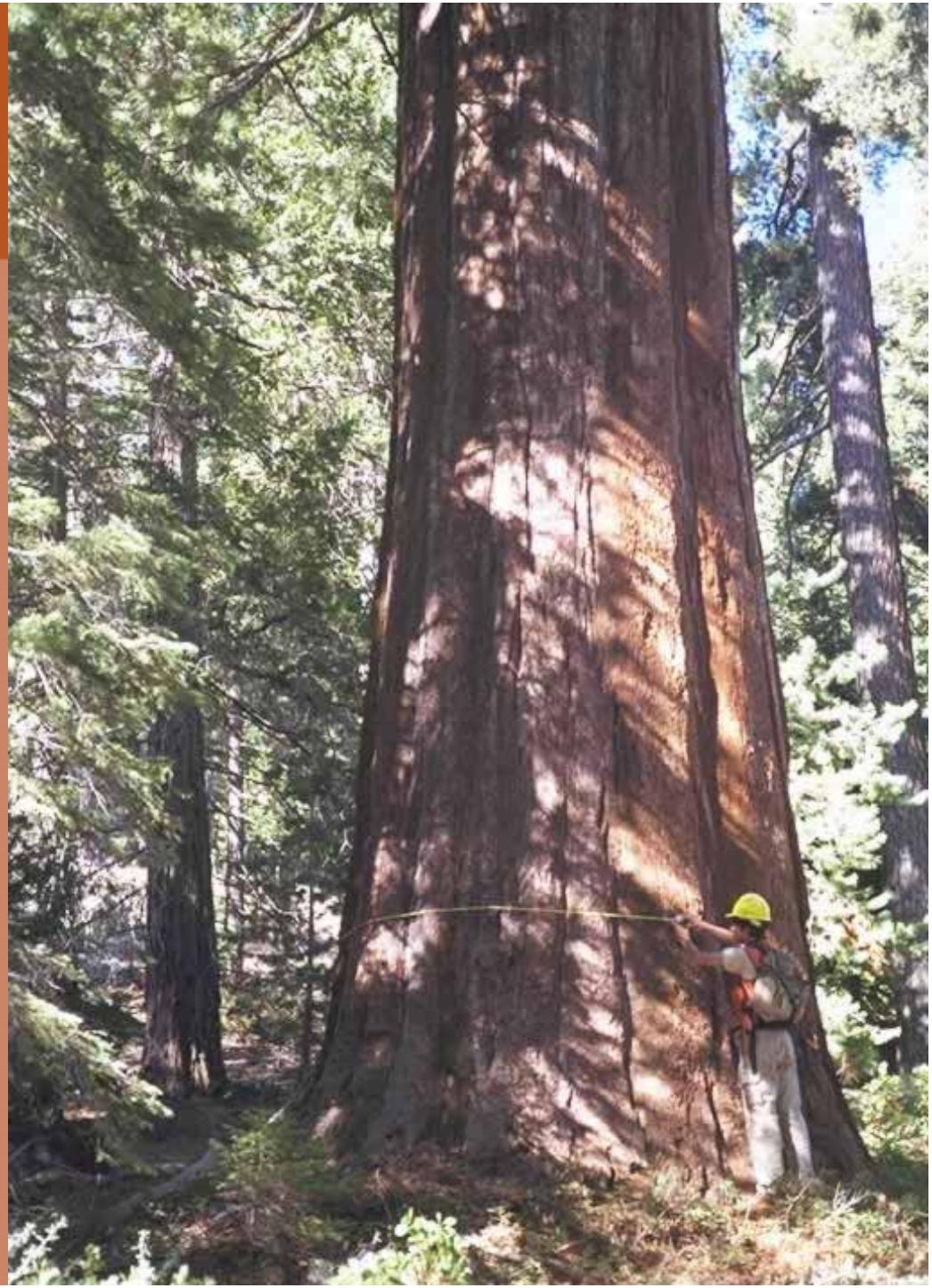
1200 year old, 200 ton

Giant Sequoia

8 m diameter, 78 m height

79,600 kg Carbon



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Deforestation and Degradation in California

- About 95% of primary “old growth” forest has been cut.
- 10,000 ha of forestland are converted annually.
- Clearcut logging on private forests in the Sierra Nevada has increased over the past decade.

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Sierra Nevada Clearcuts

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Forest degradation

Clearcuts near South Grove of Calaveras Big Trees State Park

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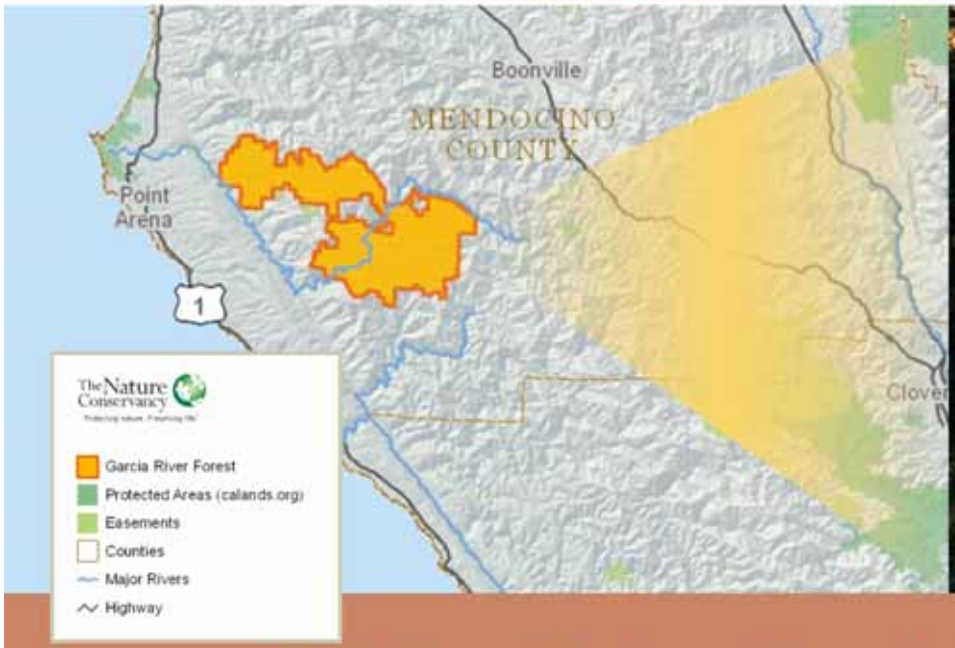
Forest degradation

Context for Forest Offsets

- Strong governance, with private ownership
- State cap & trade law – AB 32
- Forest project protocols (CAR)
  - Avoided deforestation
  - Reforestation
  - Improved forest management
- State adopts forests protocols for voluntary action
- Success in voluntary market

Improved Forest Management Project
Garcia River Forest



- 10,000 Ha of Redwood-Douglas Fir forest in Mendocino County California
- Demonstrates sustainable forest management is compatible with addressing climate change and conserving biodiversity
- Garcia River Forest is certified to Climate Action Reserve protocols
- Generated $2 mil. carbon revenue
- Demonstrates market demand and confidence in certified credits

Forests in AB 32 Plan

- Offsets up to 49%, potential role for forests
- Potential international forest credits
- -5 mt CO2e target for forest sector - "No Net Loss" policy
- Potential natural resource adaptation funding
- Local land use regulation

Next steps for CA

- Regulations to implement plan
- Criteria for compliance offsets
- Integrate international forest credits
- Improving inventory and monitoring methods
- Tracking multiple scales – e.g., state and project
- CAR update to forest protocol

Offsets Factors for Compliance

- Real
- Quantifiable
- Permanent
- Verifiable
- Additional
- Enforceable

Real

- Conservative assumptions
- Account for leakage at both project and program levels
- Registry function for clear accounting

Quantifiable

- Science-based, accurate accounting methods
- May use CAR as model
- May allow some flexibility in methods if accuracy level is met

Permanent

- 100 year term for projects
- Could include contract, conservation easement or other legal tool
- Could include reserve buffer pool or insurance

Verifiable

- Offset credit only issued after it is created
- Third-party verification likely

Additional

- Combination method to set baseline includes:
  - Standardized method, and
  - Some project-specific analysis
- Considering variety of approaches
- Unclear on favored approach

Enforceable

- Must be backed by regulations – legal process
- Must include tracking system
- Unclear how CA could detect and take action against violations for international offsets

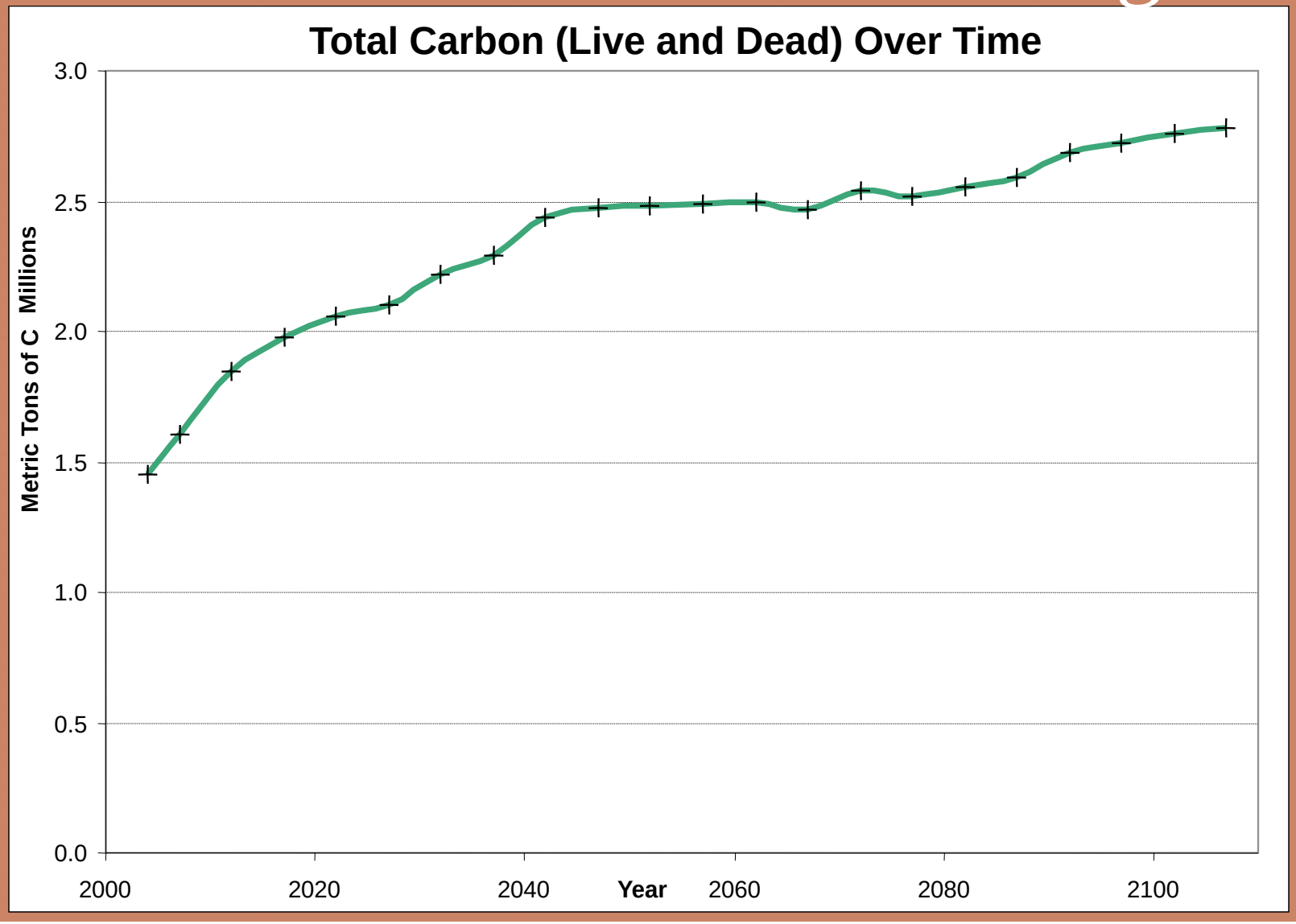
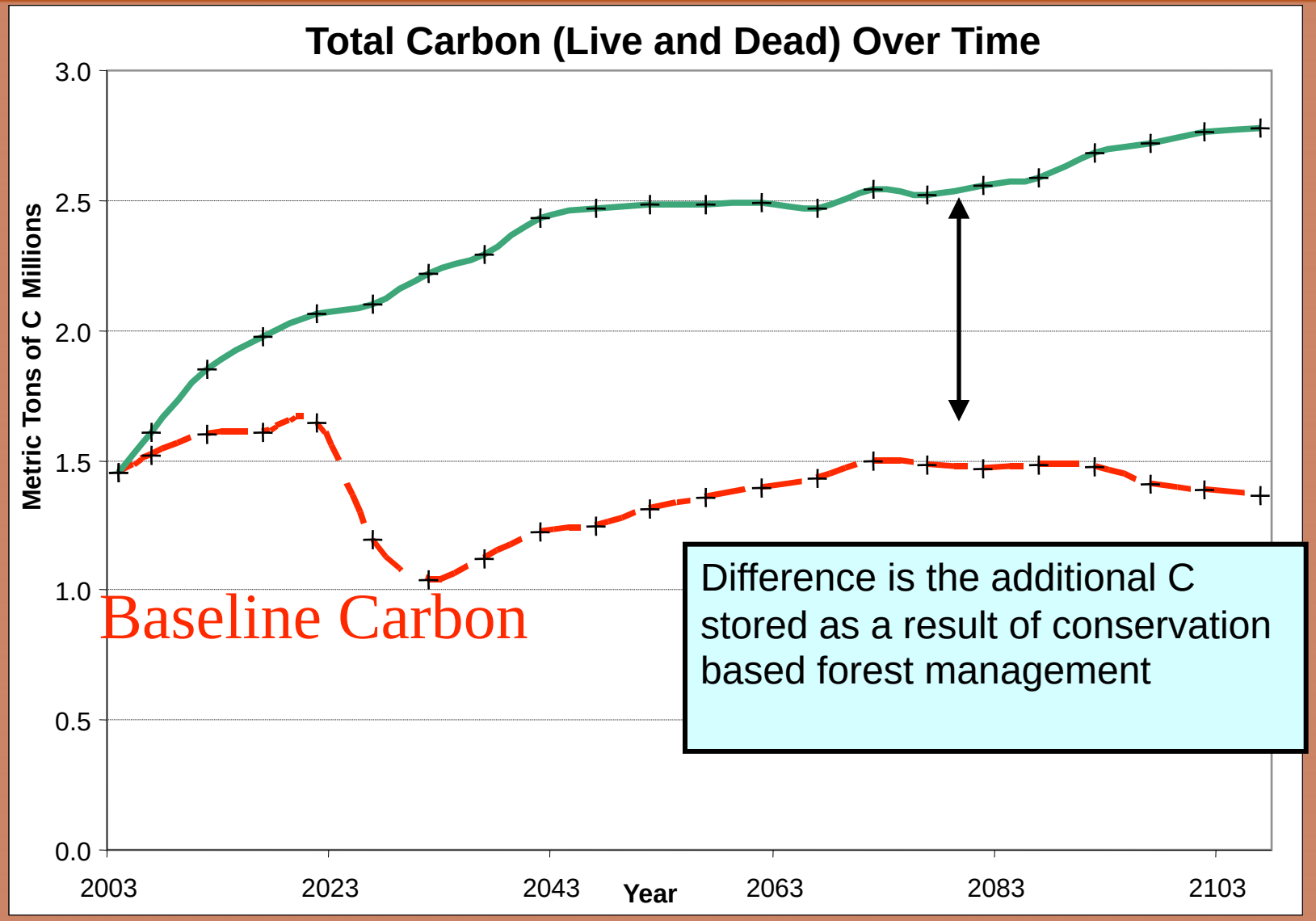
Key issues to consider

- Governance – land registry & tenure, carbon ownership
- Accounting methods
- Compatibility of CAR protocols internationally
- MOU mechanism for enforcement

Conclusion

- CA has good foundation
- MOU process important
- Chance to advance REDD+
- Model for federal and UN
- Important to succeed

Modeling results: Project carbon with management



Baseline carbon added