



Garcia River Forest Case Study

Future Forests II – February 11, 2009

The Conservation Fund

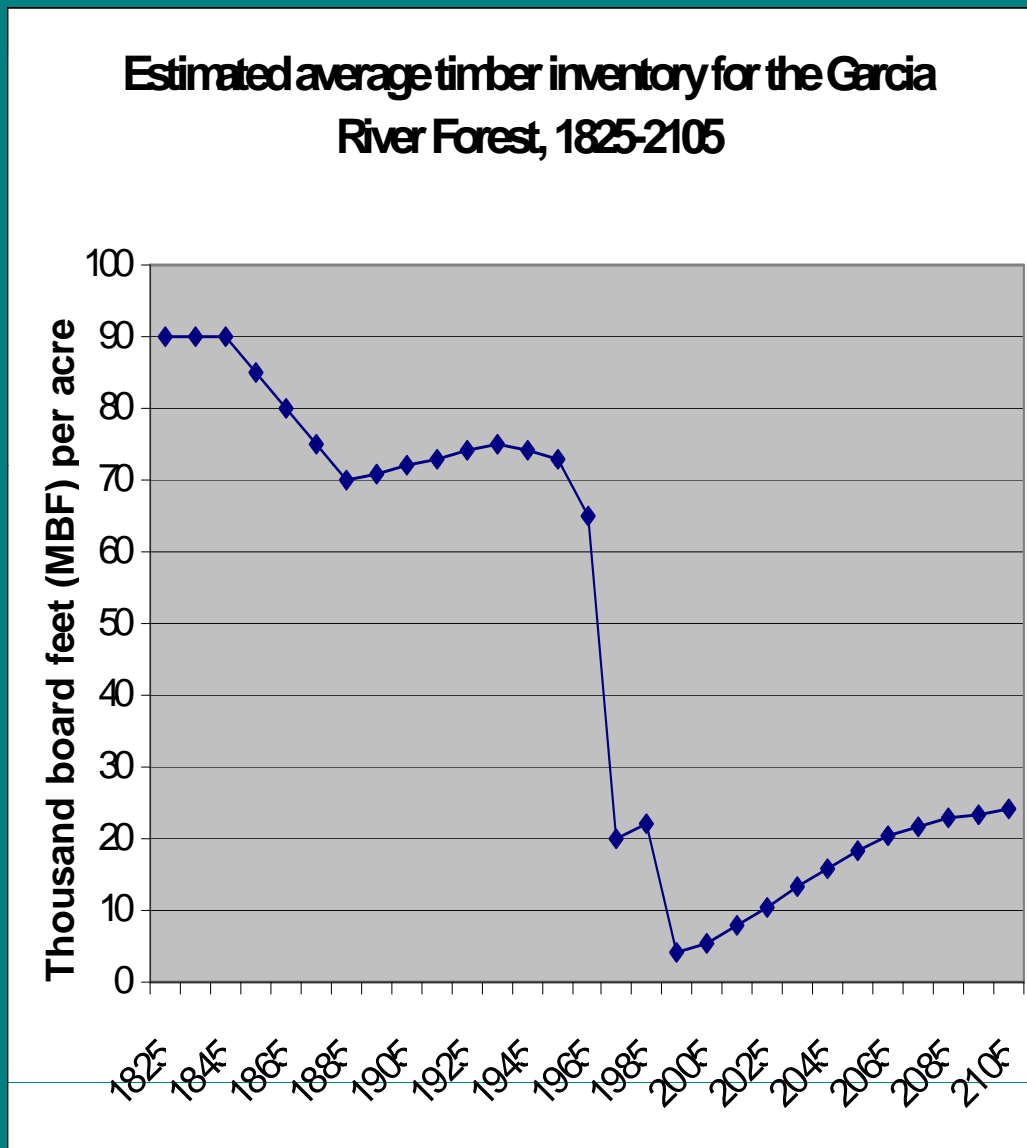


Conservation Values

- Large size (+24,000 acres)
- Diverse natural communities
- 40% of watershed
- 35 miles of fish-bearing streams
- 10 NSO activity centers



Forestry Values



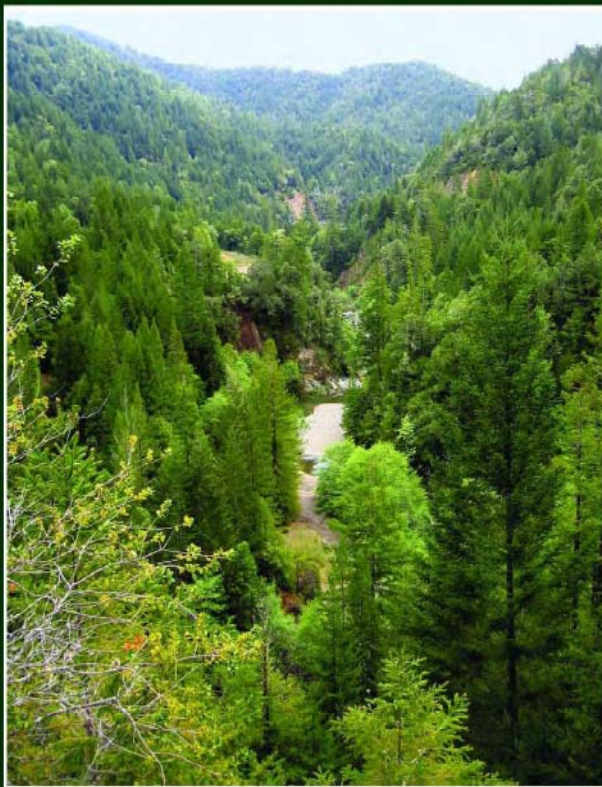
- Fairly typical mixed redwood/douglas fir coastal forest
- Severely depleted but well stocked with dense stands of young trees
- Good road system
- Close to mills





GARCIA RIVER FOREST

*A project of The Conservation Fund in partnership with
The Nature Conservancy, State Coastal Conservancy, Wildlife
Conservation Board, and California Department of Fish and Game*



INTEGRATED RESOURCE MANAGEMENT PLAN

AUGUST 2006

Management Objectives for Garcia River Forest:

- Grow inventory by cutting substantially less than growth
- Improve structure and growth by thinning dense young stands
- Implement restoration, primarily sediment reduction projects
- Support local economy
- Obtain FSC certification



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 managed 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.



From Tree Farming to Carbon Farming

CCAR Forest Project Protocols:

Forest Conservation

Reforestation

Conservation-based management

Verification = CRTs

CRTs = \$\$\$\$\$

Conservation-based Forest Management

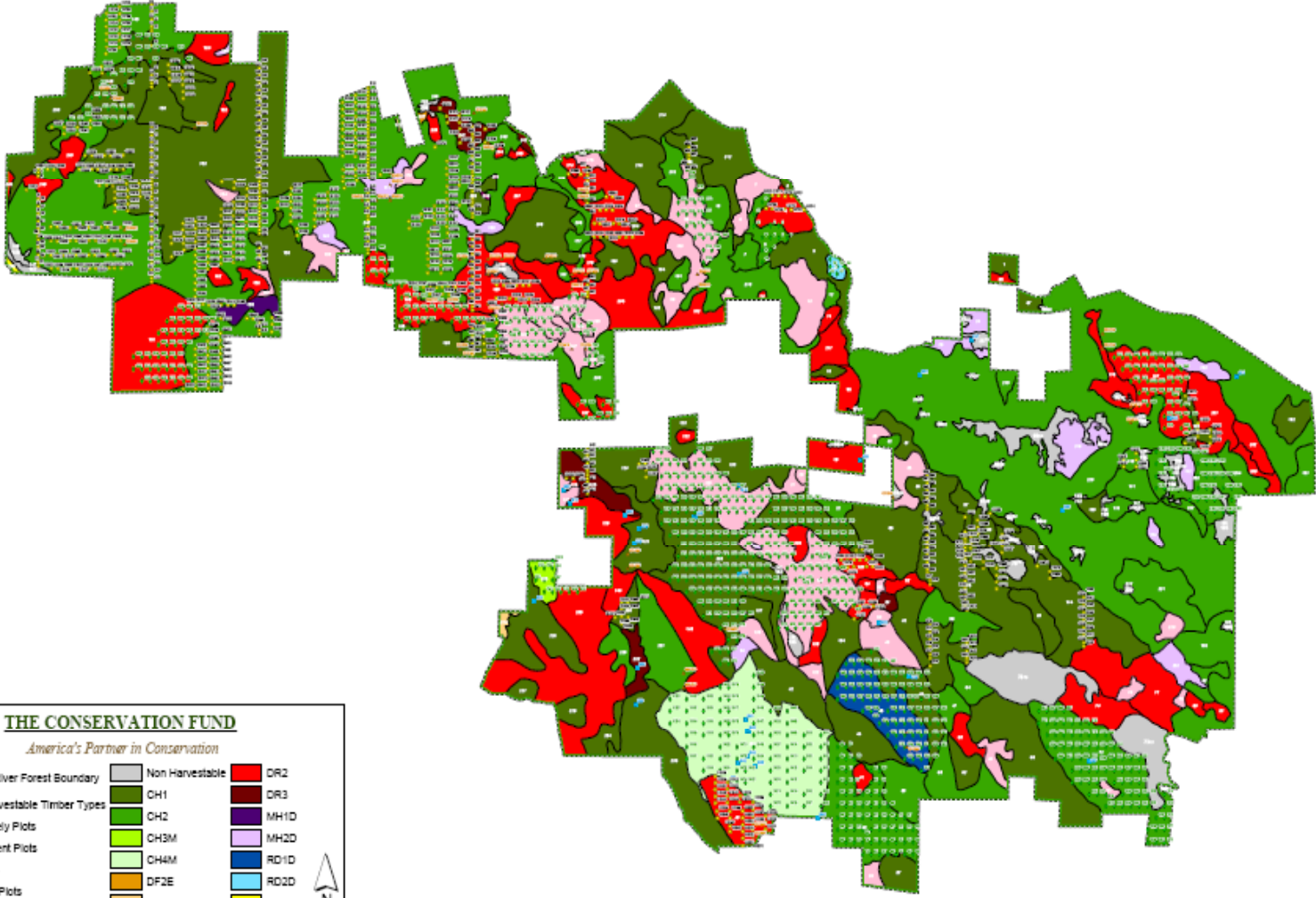
Harvest and regenerate native trees using natural forest management practices



Forest Project Development

- Conduct forest inventory
- Model property baseline
- Develop project activities –
 - *Example - Thin Overstocked Coniferous Stands*
- Model project activity
- Conduct independent audit and submit verification report
- Receive CCAR Verification
- CRTs are issued and traded

Inventory Plots



THE CONSERVATION FUND
America's Partner in Conservation

Garcia River Forest Boundary	Non Harvestable	DR2
Non Harvestable Timber Types	CH1	DR3
UC Berkeley Plots	CH2	MH1D
Permanent Plots	CH3M	MH2D
TV Plots	CH4M	RD1D
Pioneer Plots	DF2E	RD2D
	DF3E	RW3D
	DR1	TO2D

1:24,000

0 0.375 0.75 1.5 2.25 3 Miles

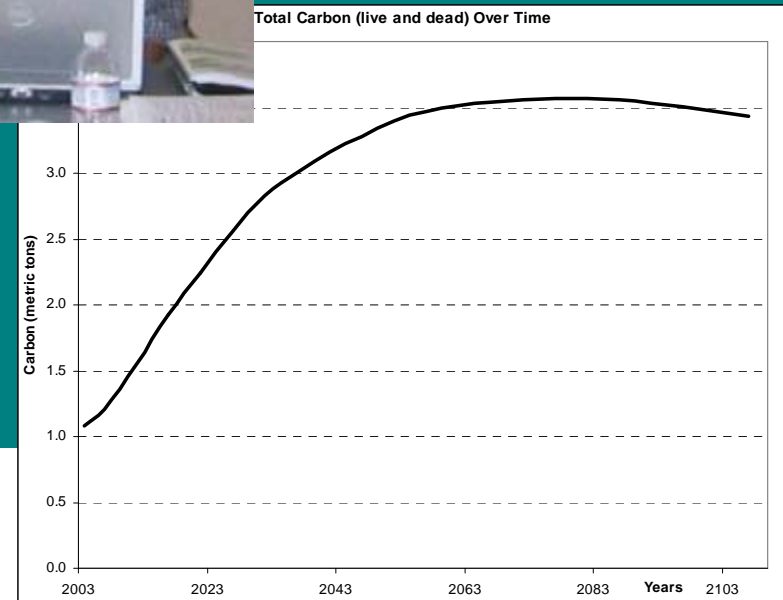
November 13, 2007 UC

Timber Cruise and Inventory



Measuring the Forest: Data Input and Modeling

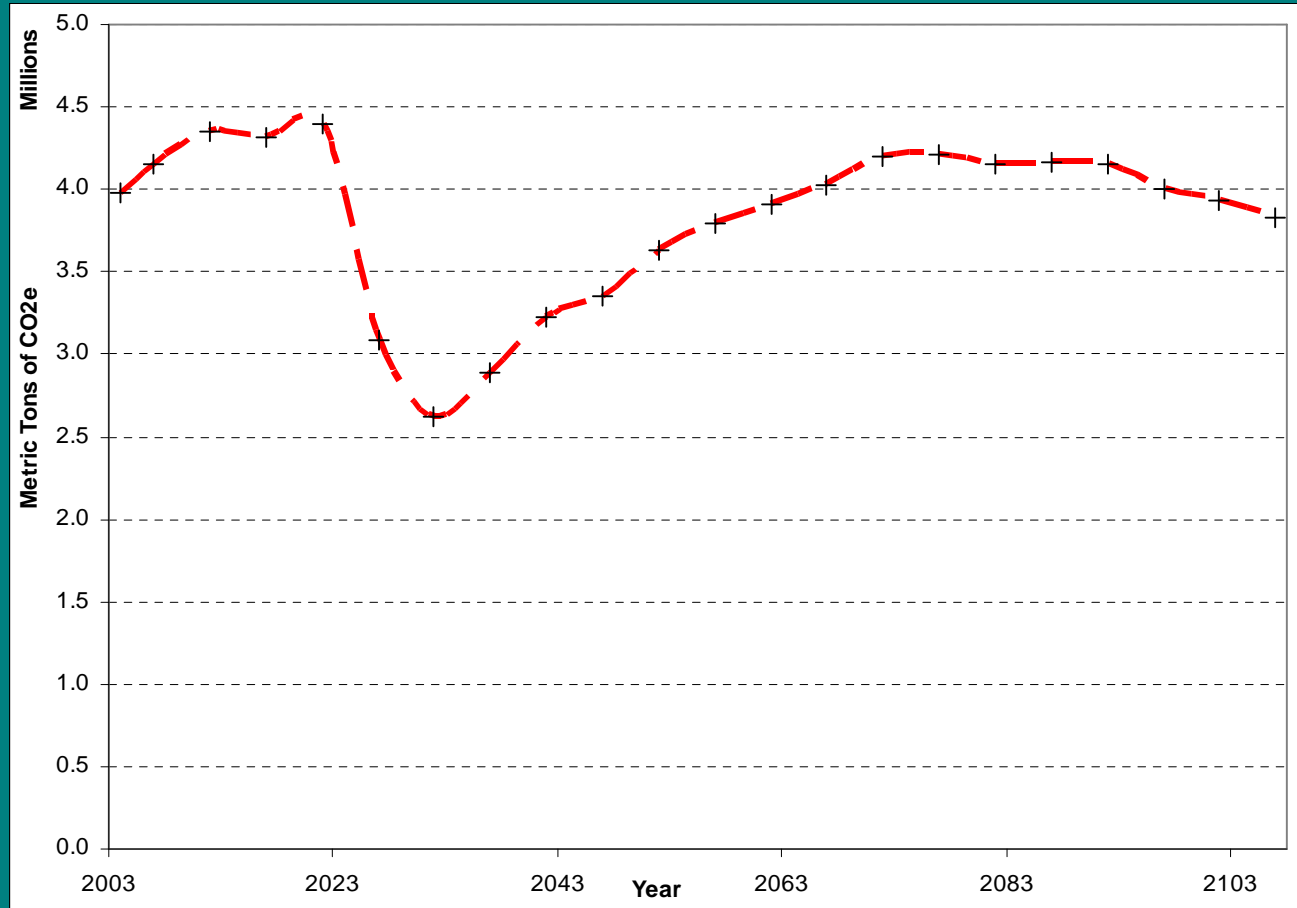
- Import data into forest growth and yield model
- Determine management regimes
- Determine buffer areas
- Apply regimes to forest and grow out 100 years



Equation 1: Overall Mean $= \bar{y}_o = \frac{1}{N} \sum_{h=1}^L N_h \bar{y}_h$

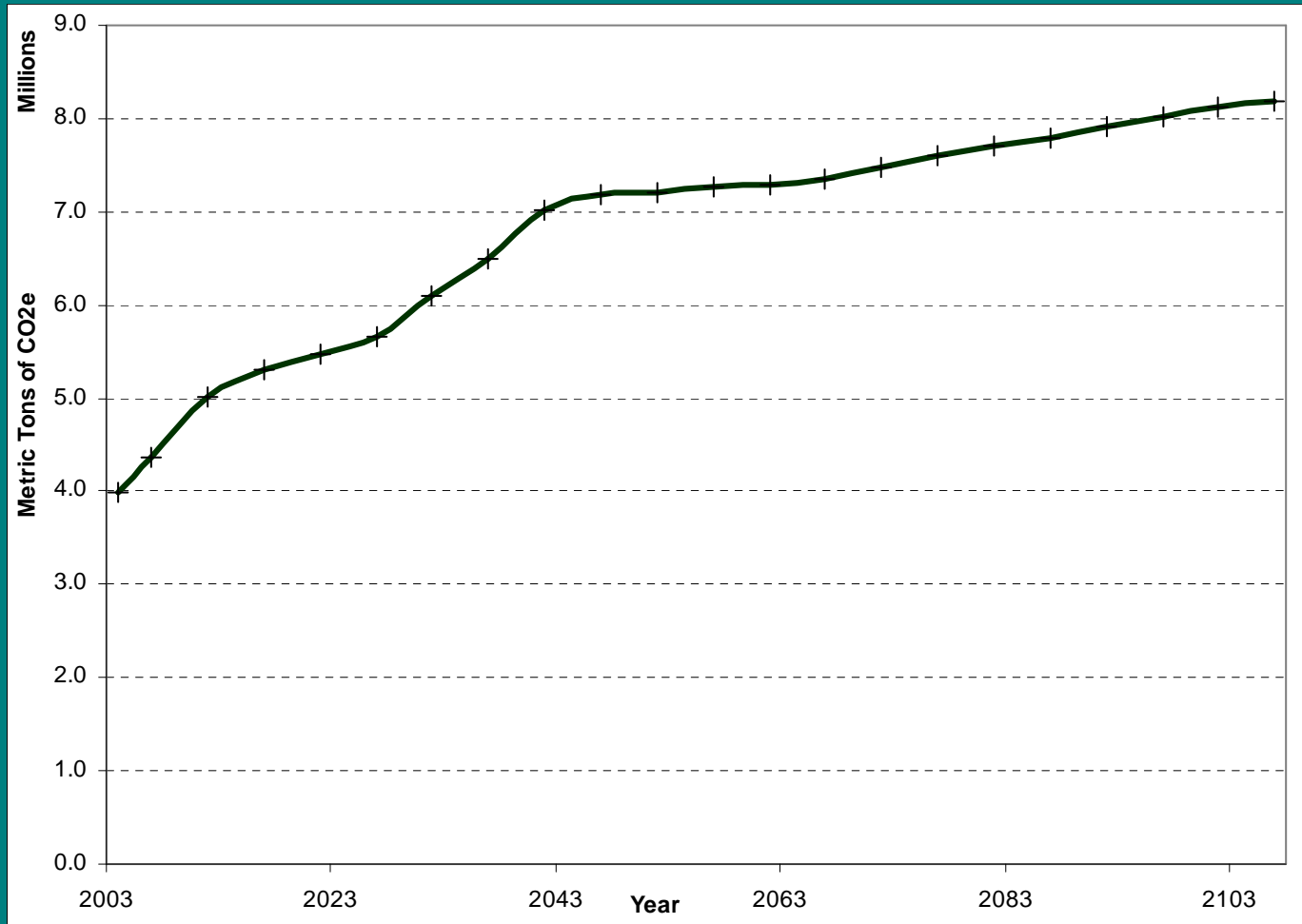
Equation 2: Overall SE $= SE_o = \sqrt{S_{y_o}^2} = \sqrt{\sum_{h=1}^L \left(\frac{N_h}{N}\right)^2 \left(\frac{S_{y_h}^2}{n_h}\right) \left(\frac{N_h - n_h}{N_h}\right)}$

Baseline Management



Even-aged management starting
with 60 year old stands

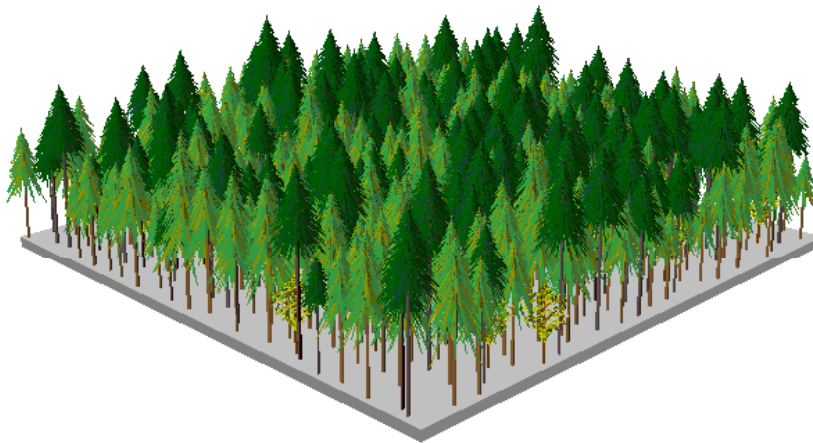
Project Management



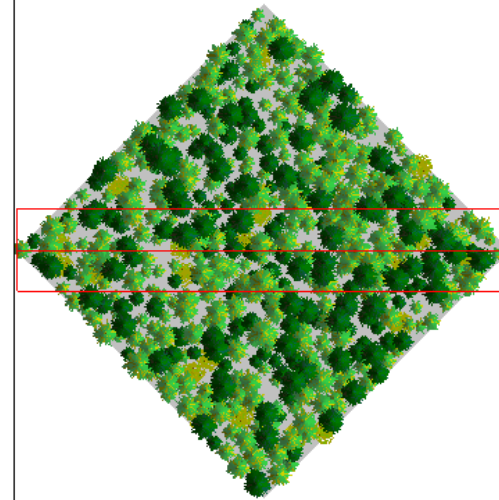
Project management cuts less than growth, retains large trees.

Model Project Activity – Pre-Commercial Thinning Current Condition

Stand Visualization System

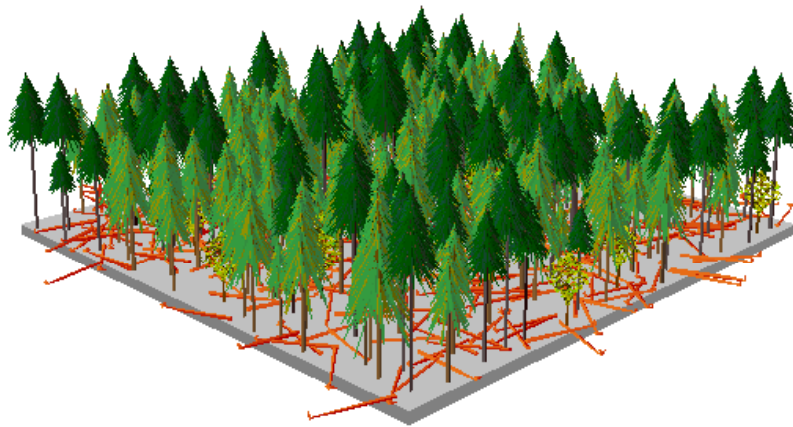


PRE THIN.SVS

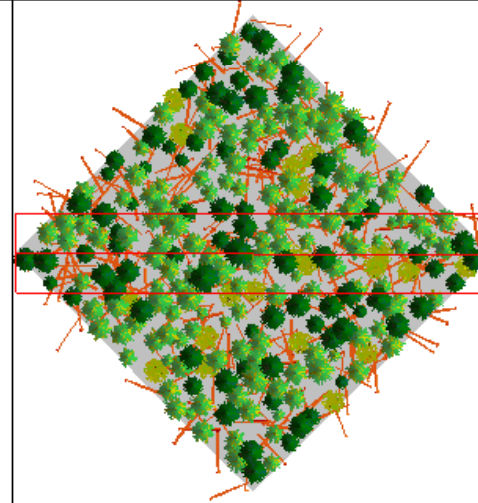


Model Project Activity – Pre-Commercial Thinning Immediately Post- Harvest

Stand Visualization System

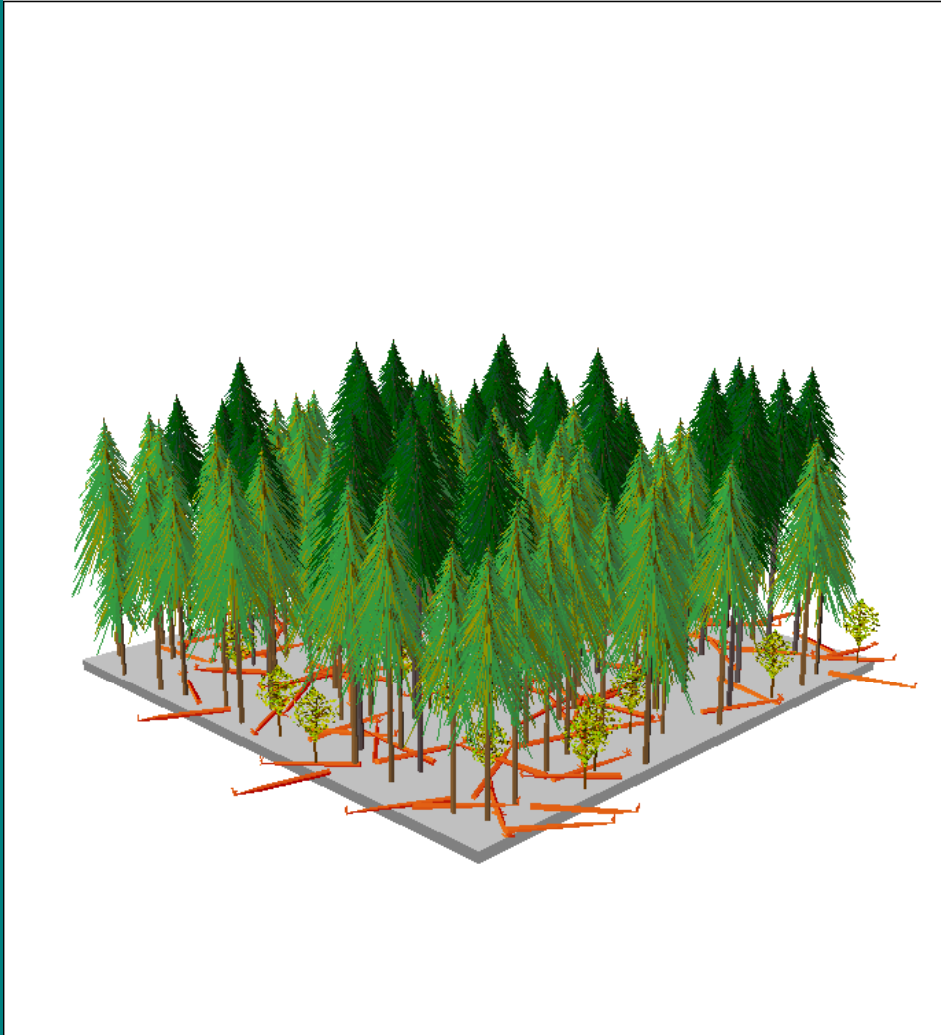


POST THIN.SVS

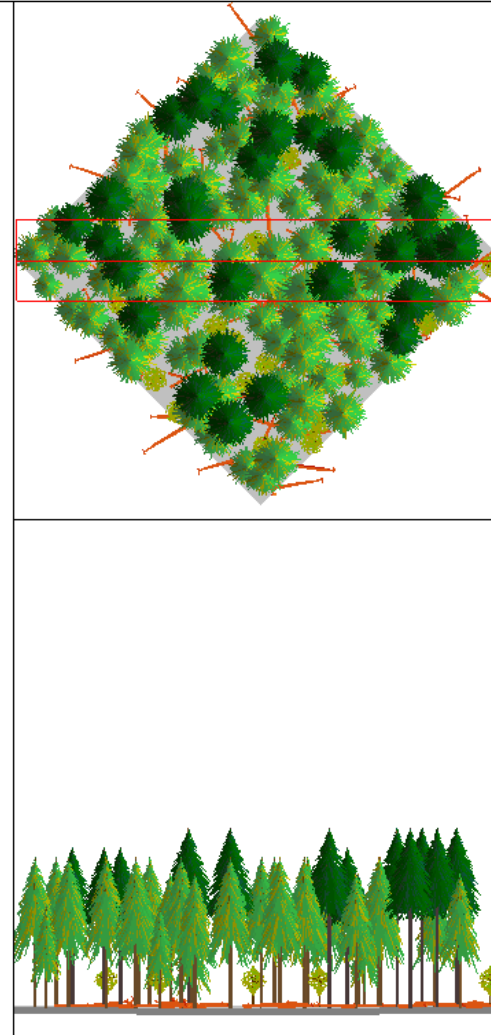


Model Project Activity – Pre-Commercial Thinning Thinned Stands 20 Years Later

Stand Visualization System

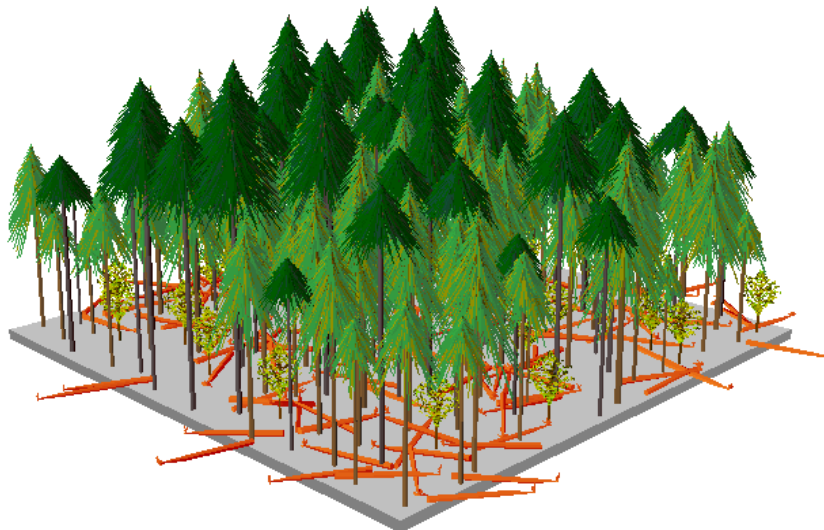


POST THIN 20YR PCT.SVS

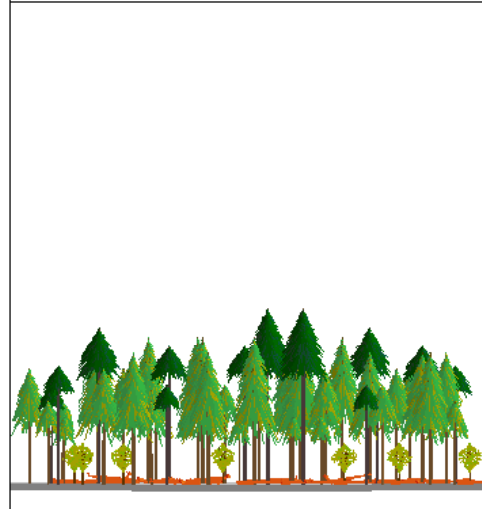
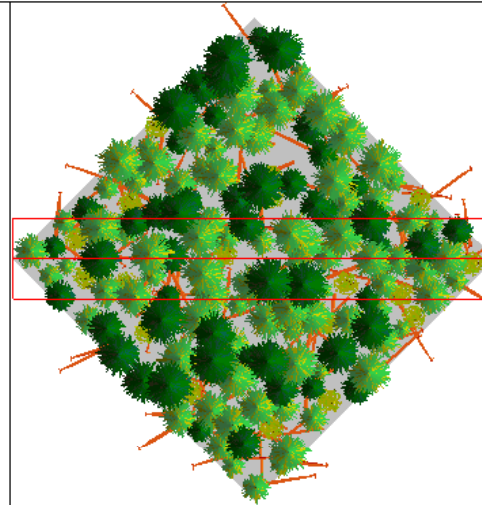


Comparison Stands w/o Thinning - 20 Years Later

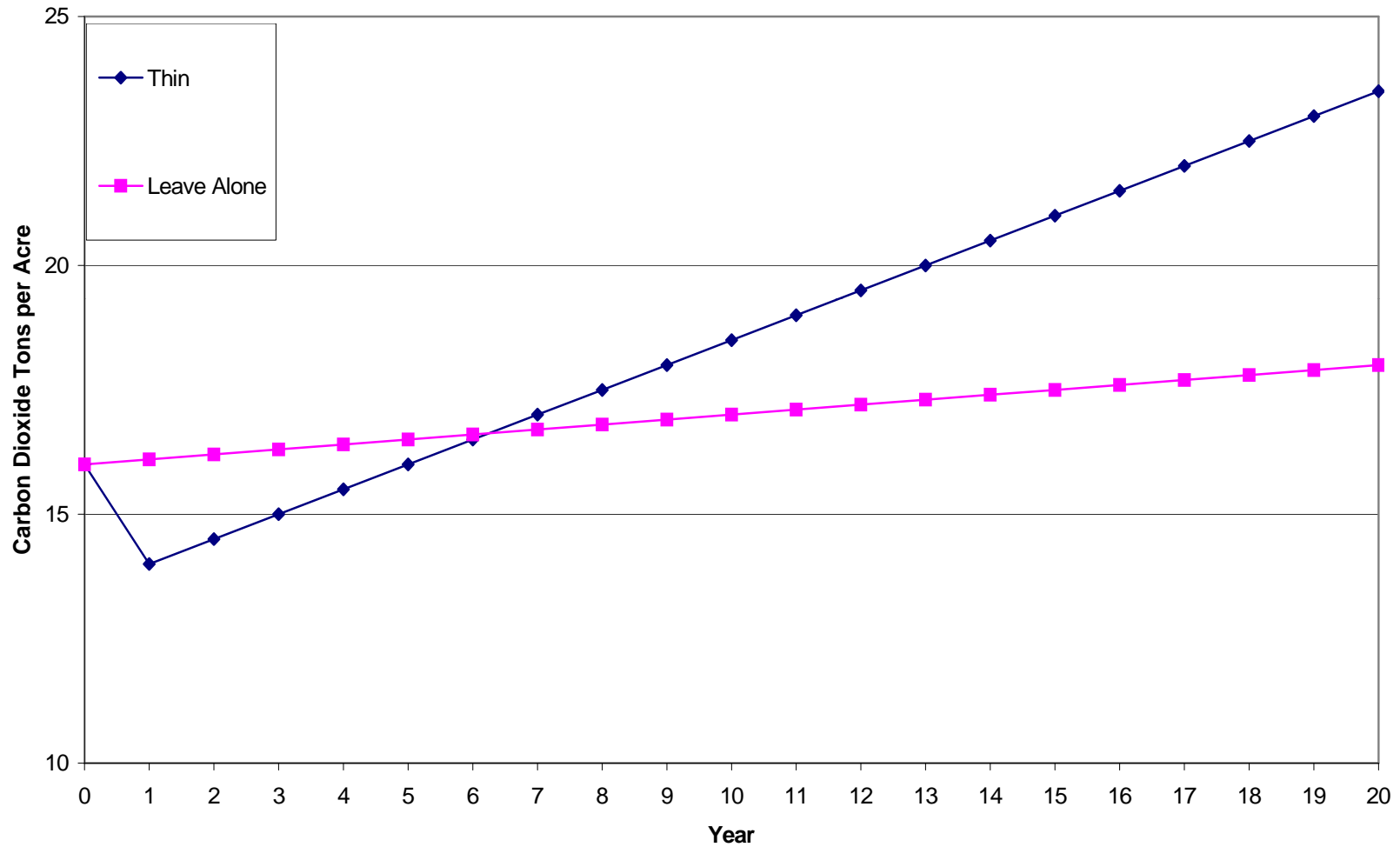
Stand Visualization System



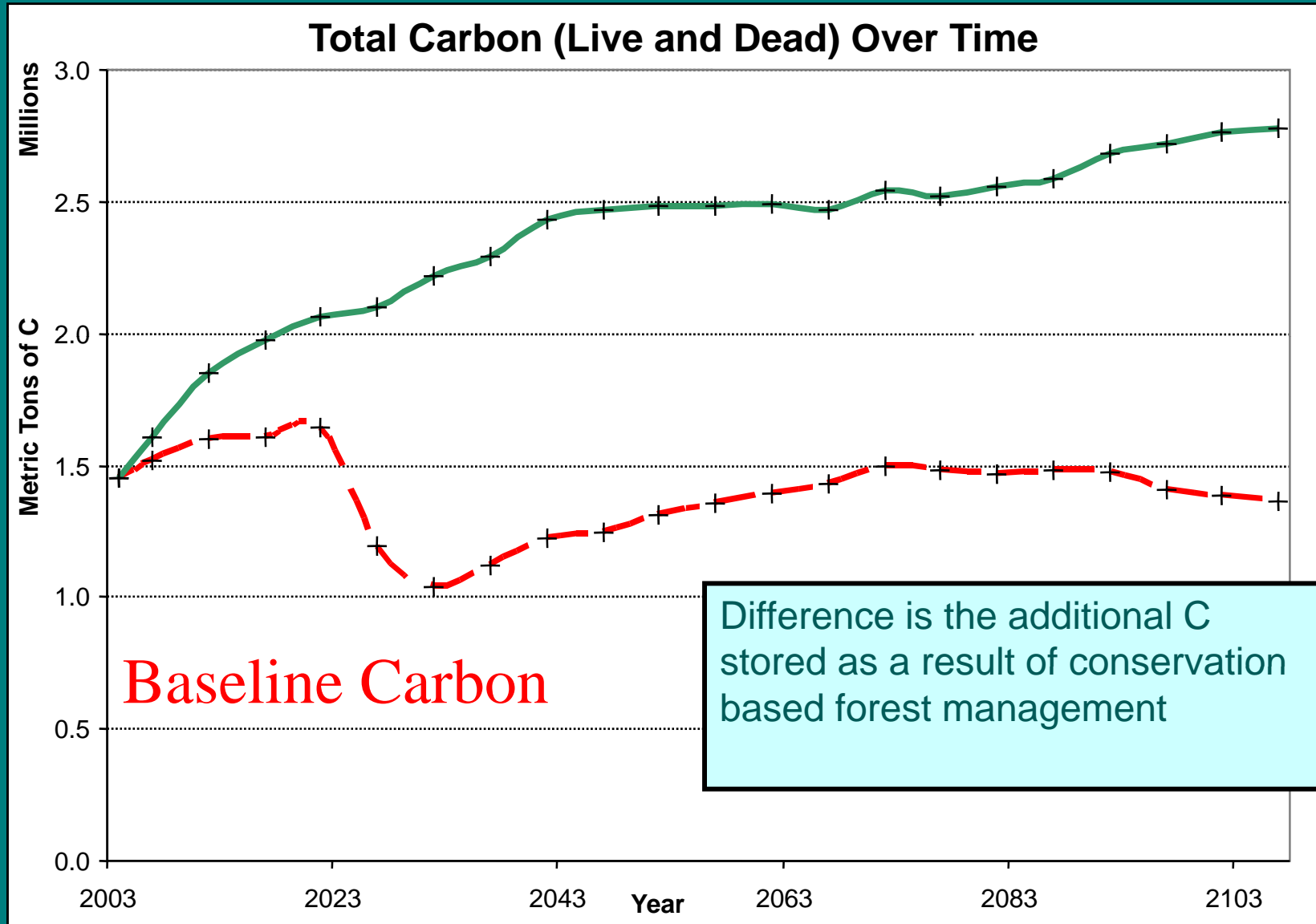
POST THIN 20YR_NOTREATMENT.SVS



Comparison of Carbon Dioxide Equivalent Tons Stored with Thinning Activity versus Leaving Stand Alone



Baseline/Project Management





PROJECT SUMMARY WORKSHEET

All information in this report will be publicly available.

This project summary must be submitted to the Registry and Certifier in the first year of reporting at the time of certification. In some cases, it may be necessary to update parts of the Project Summary Worksheet in subsequent years.

If you have already submitted a pre-screening worksheet and none of the information in the worksheet has changed since its submission the Registry, you may provide this worksheet in lieu of Section I. However, you must fill out the remainder of the project summary information, starting with Section II.

Name of Entity:	The Conservation Fund
Name of person completing summary:	Evan Smith
Telephone	(503)407-0301
Email:	esmith@conservationfund.org
Address:	The Conservation Fund, 14951 "A" Caspar Road, Box 50, Caspar, CA 95420
Date of initial reporting year:	2004
Date Forest Entity Description submitted to Registry:	July, 2005
If different than above:	
Project start date (month/year)	Feb, 2004
Project end date (month/year) (expected)*	July, 2104
Project Developer Name:	Evan Smith
Title:	Forestry Projects Director
Telephone number:	(503)407-0301
Email:	esmith@conservationfund.org
Project Mailing address:	The Conservation Fund, 14951 "A" Caspar Road, Box 50, Caspar, CA 95420
Relationship to Entity:	Employee
Geographic scope of your report:	California <i>(Only California projects may be registered)</i>

**For consistency with entity reporting requirements a 100-year project lifetime is recommended.*

Verification Process

- Field visit
 - Plot re-measurement
 - Stratification verification
 - Stocking overview
- Desk Review
 - Sampling Accuracy Assessment
 - Conversion methodology
 - Modeling design Assessment
 - Option C Baseline assessment
 - Leakage Assessment







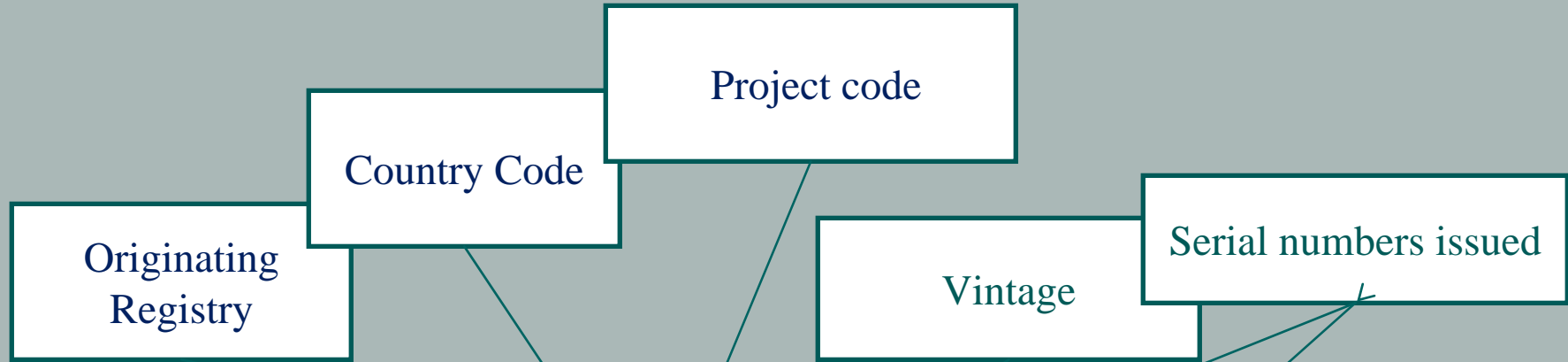


**CLIMATE
ACTION**

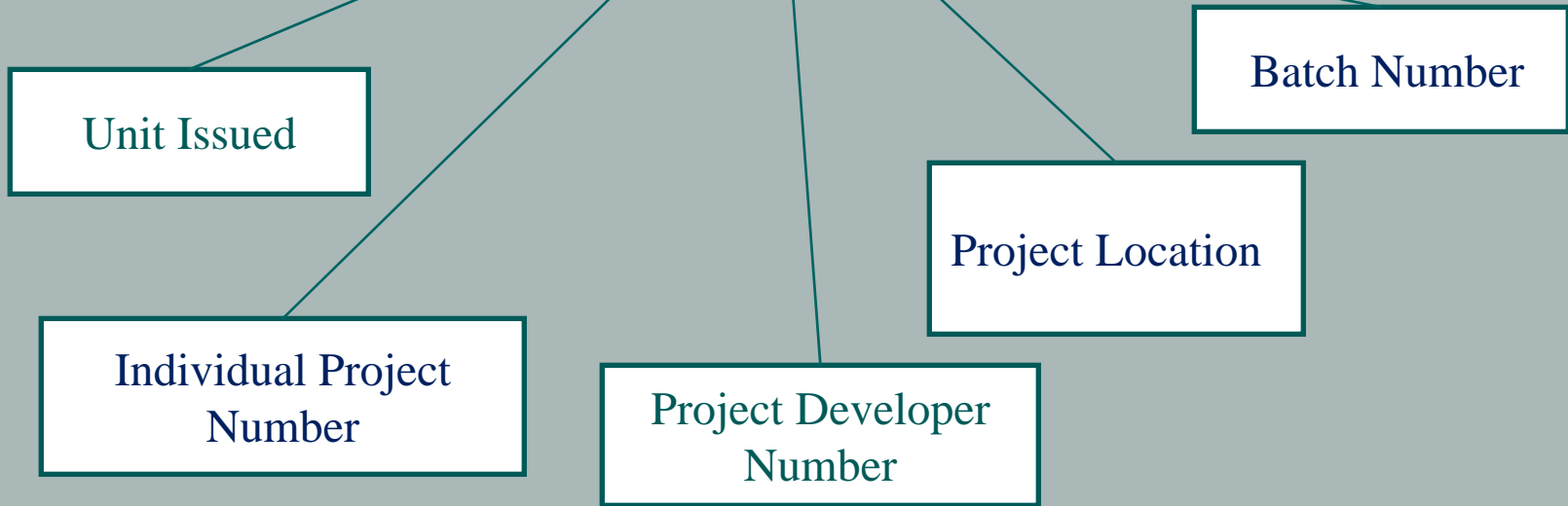
LEADER

TM

www.climateregistry.org



CRT Serial Number(s): CAR-1-US-102-1-102-CA-2005-103-1 to -77040



Garcia Carbon Sales

REUTERS

February 26, 2008

PG&E carbon offsets fund California forest

By BERNIE WOODALL

LOS ANGELES, Feb 26 (Reuters) - Pacific Gas & Electric Co and The Conservation Fund on Tuesday announced the first big sale of carbon dioxide offsets in PG&E's ClimateSmart program that is voluntarily funded by utility ratepayers.

A carbon offset is payment to another party that makes up for activity by a person or a company that causes carbon dioxide (CO2) emissions, the primary greenhouse gas.

In this case, PG&E customers will pay to offset 200,000 tonnes of CO2 emissions by giving an undisclosed amount of money to help The Conservation Fund manage a nonprofit working forest in Northern California. That's about as much CO2 emissions created by 37,000 average PG&E households annually.

PG&E, one of the biggest U.S. utilities, adds a fee to bills of power and natural gas customers who volunteered to offset use. For an average house, that's about \$4.50 monthly into ClimateSmart to be spent on green projects.

The pool of customers has grown to about 17,500. Since the program began last June, customers have paid nearly \$1

million into ClimateSmart, said PG&E, the principal unit of PG&E Corp (PCG.N: Quote, Profile, Research) which is headquartered in San Francisco.

PG&E gets no financial benefit from the transaction to help fund the Garcia River Forest in Mendocino County, which is located about 130 miles north of San Francisco, the company says.

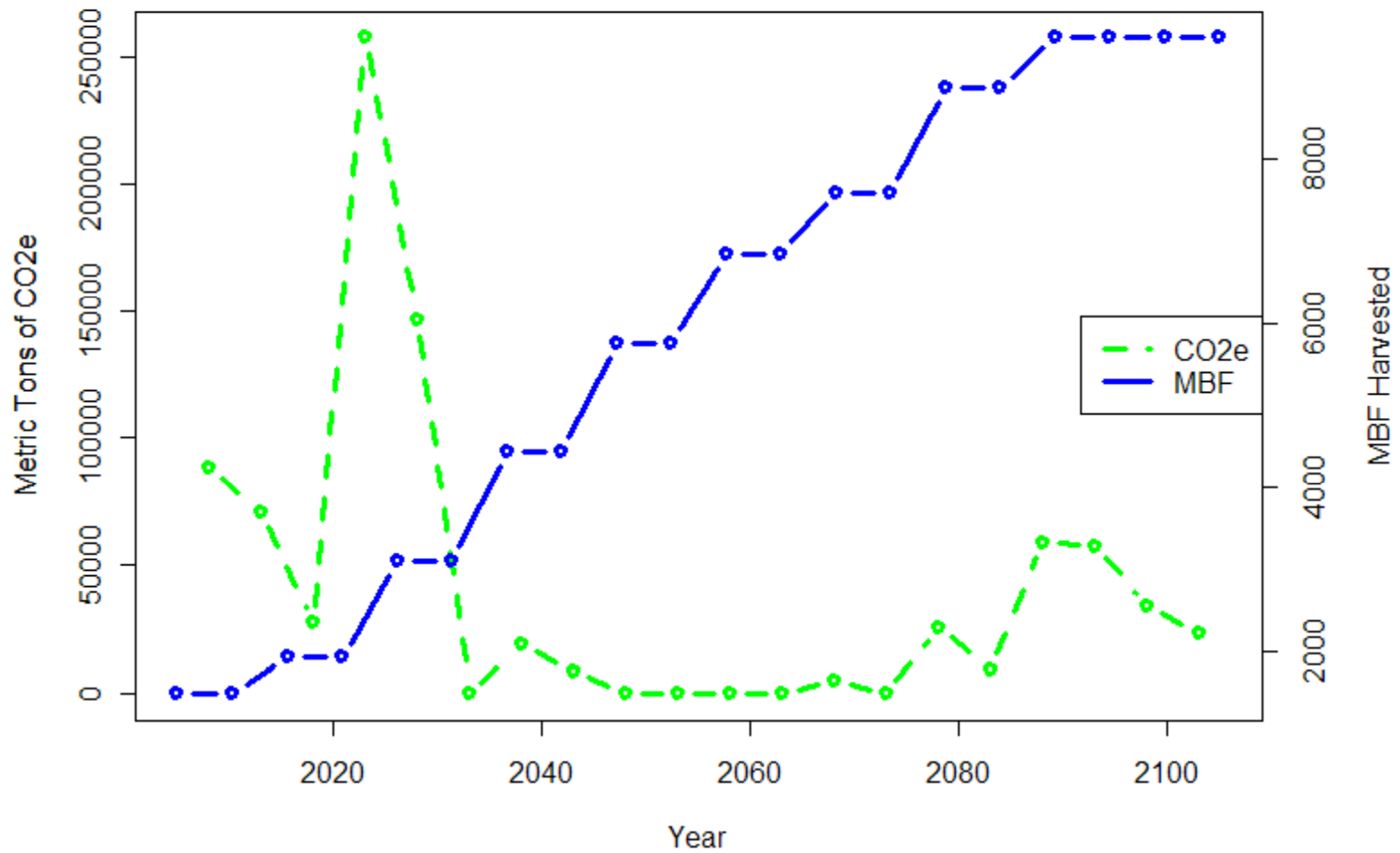
Pulling money together from ratepayers into a huge pool can fund large conservation projects, said PG&E and Chris Kelly, California program director for The Conservation Fund.

In the still-taking-shape world of carbon dioxide (CO2) offsets, the California Public Utilities Commission allowed PG&E to value a tonne of CO2 emissions at \$9.71.

"The offsets are real and induced by your payments," Kelly said, referring to PG&E customers enrolled in ClimateSmart. "PG&E (funding) is allowing us to reduce the amount of timber we bring to a mill each year to about 1 million board-feet or less. Otherwise, we'd have to bring 1.5 or 2 million board-feet to the mill to meet our operating expenses."

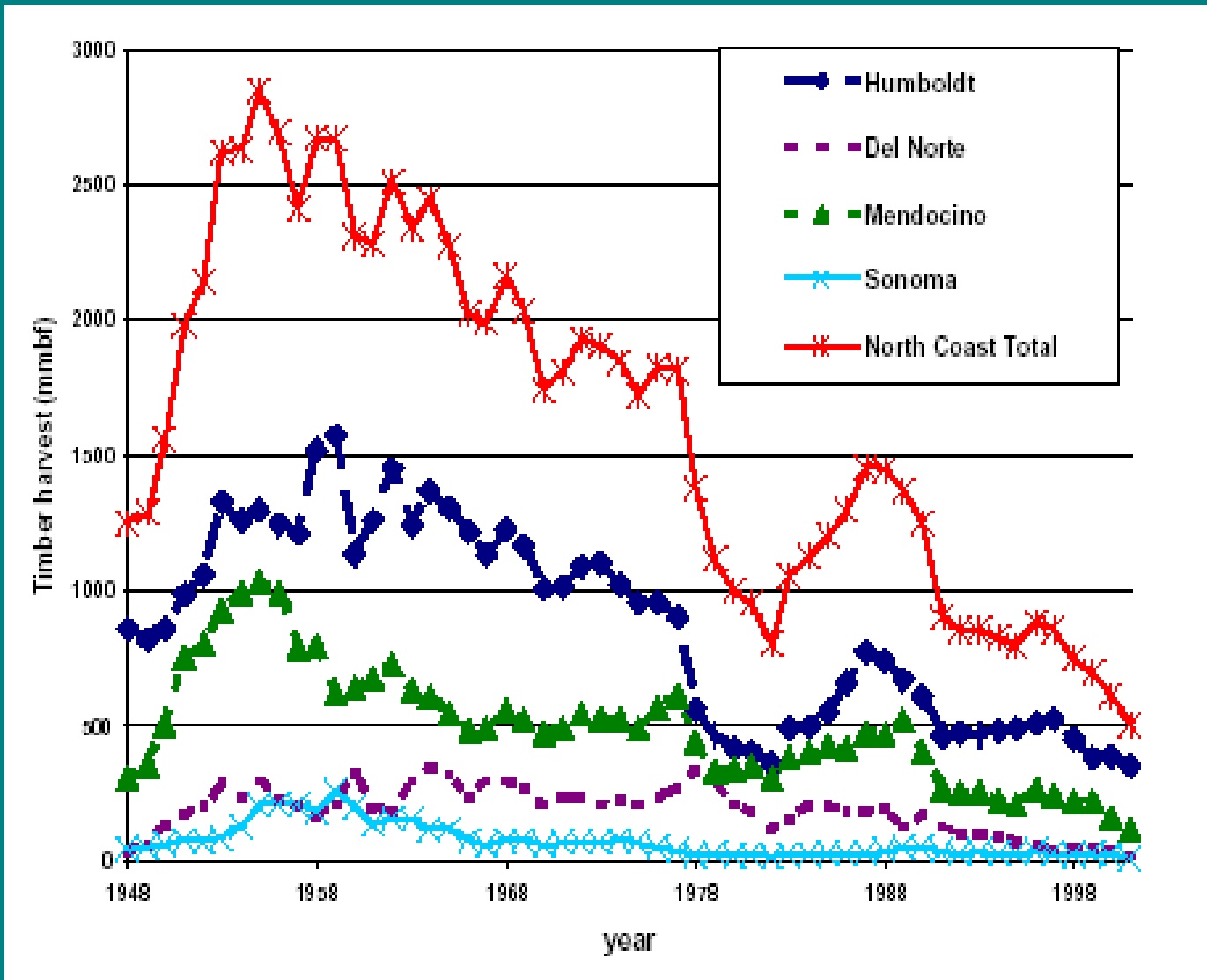
- >600,000 metric tons sold or contracted to date
- Vintages: 2005 – 2012
- Terms: Varied, some current and some forward sales

Garcia River Forest CO2 and MBF of Timber



Estimated Costs for Registration/Verification

- Timber Inventory and Cruise: \$80,000
 - Modeling/reporting carbon: \$90,000
 - Certification of project activity: \$45,000
- Total: \$215,000



(Source: Richard B. Standiford, U.C. Berkeley Cooperative Extension, 2003; copied from Humboldt 2025 General Plan)



Traditional Approach

- Acquire for Public Park or Preserve

Limits of Traditional Approach

- Expensive to buy, expensive to manage
- Reduced property tax base
- Reduced economic activity

NGO-owned “Working Forest”

- Land remains in private ownership
- Land stays on tax rolls
- NGO provides stewardship
- Compatible economic uses permitted

