



Forestry Protocols

*Jeanne Panek, PhD.
September 6, 2007*



California Air Resources Board

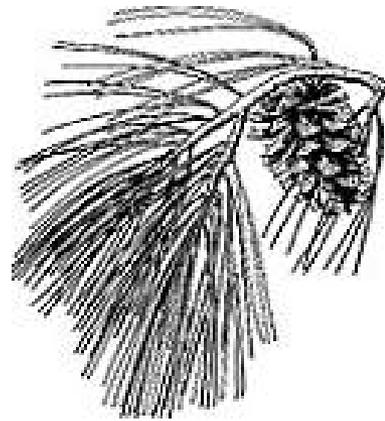
California Environmental Protection Agency



Overview

- Background
- Forestry Protocols
- Forest project protocols in practice
- Next steps

Background





Where does forestry fit in?

- Forestry sector actively removes CO₂ from the air by sequestering carbon
- Forest fire, harvesting and development reverse that benefit
- Forest projects consider multiple benefits, including ecosystem, human, and carbon benefits



What is a forestry protocol?

- Methodologies to measure GHG emissions and/or reductions from the forest sector
- Non-biological emissions measured from human activity
- Biological emissions/*reductions* measured as carbon stock loss/*growth*



Why are forestry protocols important?

- Provide accurate and standardized accounting
- Forestry accounting must meet internationally recognized rigorous standards
- Uncertainty in forestry sector must not exceed that of other sectors
- Forests are highly variable natural systems
- Well-defined criteria to maintain multiple benefits



International context for Climate Action Registry protocols

- International need for standardized forestry protocols to make project approval more efficient
- Need to make protocols “user-friendly”, prescriptively detailed, and tailored to California forests

International context



California Climate Action Registry (CCAR)

- Meet international standards for accounting quality and conservation principles

Other forest protocols:

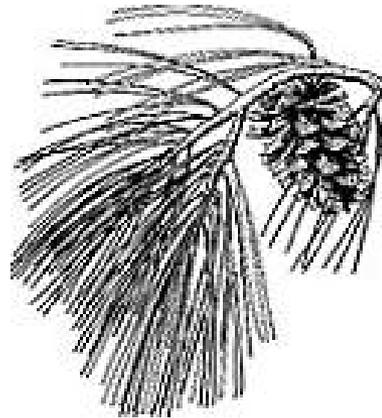
- WRI/WBCSD
- Draft version: Georgia

Other forest GHG reduction efforts

- New South Wales
- New Zealand
- Canada
- Denmark

CCAR Forestry Protocols

Protocol Description





Protocol beginnings – SB 812

SB 812 (Sher, 2002)

- Mandated the creation of forestry protocols and their conservation-based criteria
- Incorporates GHG project emission reduction through “protection, restoration and management of California’s native forests”
- Requires carbon reductions be secured with permanent conservation easement
- Requires protocols to recognize only practices that exceed all federal, state and local regulations
- Sunsetting at the end of 2007



Protocol development and process

- Developed over 4-year, multi-stakeholder, public process
- Reviewed by 50 external experts, representing the forest industry, state and federal agencies, NGOs and universities
- Approved by Board of Forestry (2004), adopted by California Climate Action Registry (CCAR) Board (2005)
- Despite extensive public process and approval to date, ARB needs to follow its own public process



CCAR Forest Members

Forest landowners

- Collins Pine Co.
- Van Eck Foundation (Van Eck Forest)
- The Conservation Fund (Garcia River Forest)

Foundations/NGOs/other

- Pacific Forest Trust
- Natural Resources Defense Council
- Environmental Defense

Government Agencies

- California Environmental Protection Agency
- California Dept. Forest and Fire Protection
- United States Forest Service - Pacific Southwest Region
- California Resources Agency



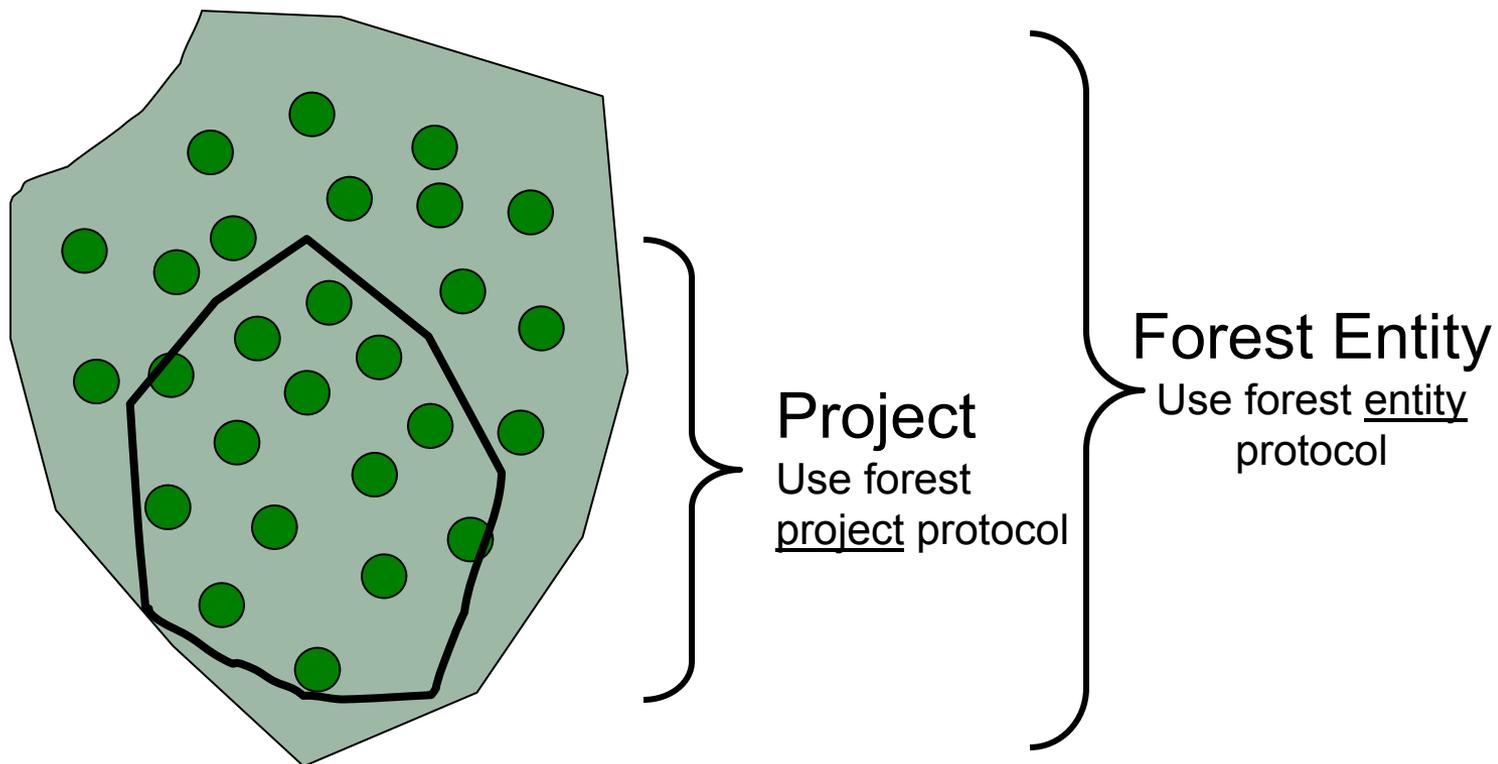
CCAR Forest Protocols: Description

A standardized accounting framework for forest emissions and reductions

3 forest protocols:

1. Entity - used to report entity-wide biological emissions/stocks
2. Project - used for accounting of planned activities to achieve GHG reductions
3. Certification - guidance for certifiers of forest entity and project accounting

CCAR Forestry Protocols: Defining boundaries





CCAR Forestry Protocols: Carbon stock quantification

Quantification Requires Complete Inventory of Carbon Pools

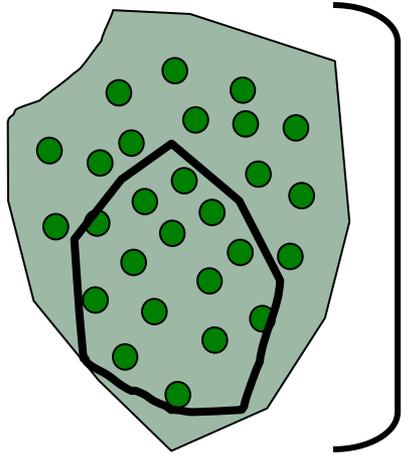
- Required & optional carbon pools
- Guidance and standards for sampling methodology
- Minimum confidence standards



CCAR Forestry Protocols: Carbon stock quantification

- Establish inventory and sampling methodology
- Cruise plots
- Use scaling equations to determine biomass
- Convert to carbon
- Determine confidence
- Use models to project growth over time

CCAR Forest Entity Protocol



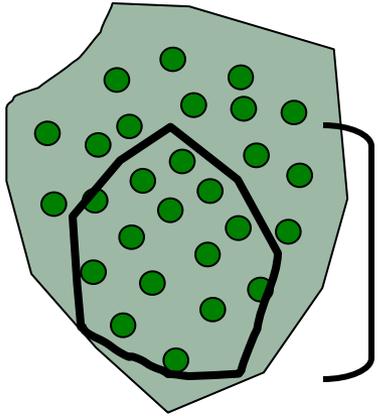
- For entity-wide biological emissions and carbon stocks
- Eligible for entity owning > 100 forested acres
- No emissions *reduction* accounting – reduction requires project protocol



CCAR Forest Entity Protocol

- Entity-wide accounting is required if projects are implemented - accounts for activity-shifting leakage
- Baseline reporting at entity-level is optional
- Wood-product accounting principles detailed - reporting optional
- Non-biological emissions follow CCAR General Reporting Protocol

CCAR Forest Project Protocol



- Project protocol used for carbon *reduction* accounting
- 3 project types
 - Reforestation
 - Conservation Forest Management
 - Conservation
- Protocol requires that carbon reductions from projects be additional and permanent



CCAR Forest Project Protocol

- Permanence: permanent conservation easement held by third party and requirement of continuous carbon stock reporting
- Additionality: projects must be additional to long-term baseline, which is required and defined differently for each project type



Project Baseline Characterization

- Reforestation
 - Out of forest cover (i.e. <10% tree canopy cover)
 - Expected future practices on land
- Conservation-based forest management
 - CA Forest Practice Rules (option C)
- Conservation
 - Immediate site specific threat or
 - Land use conversion trend (FRAP data)



CCAR Forest Certification Protocol

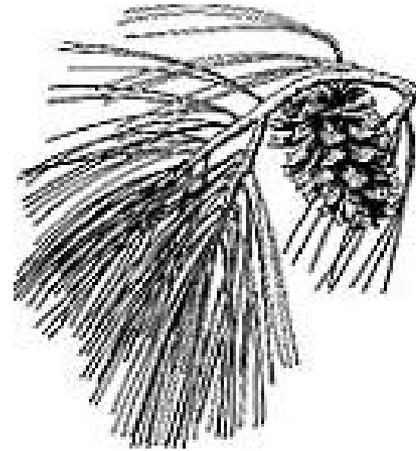
- Ensures completeness, consistency and accuracy of data/methodologies
- Approved certifiers must include a Registered Professional Forester



Certification Components

- Conduct direct sampling (at beginning and end of 6 year intervals)
- Review annual monitoring reports
- Assess methodologies, estimations, models and calculations
- Reported data must be free of material misstatements
- Plot calculations must be within 15% of certifiers

CCAR Forestry Protocols and ARB





Development of Additional Protocols

- New approaches and applications will continue to be developed after ARB endorsement of existing forestry protocols
- Two-stage process
 - Endorse existing forestry protocols for voluntary purposes
 - Support development of new project types to fit continued needs of forest sector



Summary

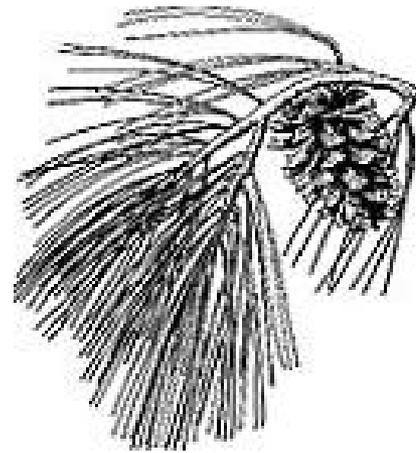
- The Forestry Protocols address the need for accurate and standardized forestry greenhouse gas measurement
- New project types will be developed
- ARB will host a forestry symposium in early 2008
- Will lead to additional workshops to further explore forestry protocol needs

Forestry Project Protocols in Practice

The Garcia River Forest
The Van Eck Forest



Next Steps





ARB Process -Timeline

September

- Workshop September 6, 2007

October

- Board hearing October 25-26

Early 2008

- ARB Forestry symposium
- Begin to explore new project types



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Forestry/Protocol/Climate Links

ARB Climate Change and Forestry Website

<http://www.arb.ca.gov/cc/ccei/forestry/forestry.htm>

CCAR Forestry Protocols

<http://www.climateregistry.org>

California Forestry and Fire Protection Website

<http://www.fire.ca.gov/>

Discussion

