The California Forest Project Protocol

Derik Broekhoff
Vice President, Policy
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CLIMATE ACTION RESERVE

Climate Action Reserve

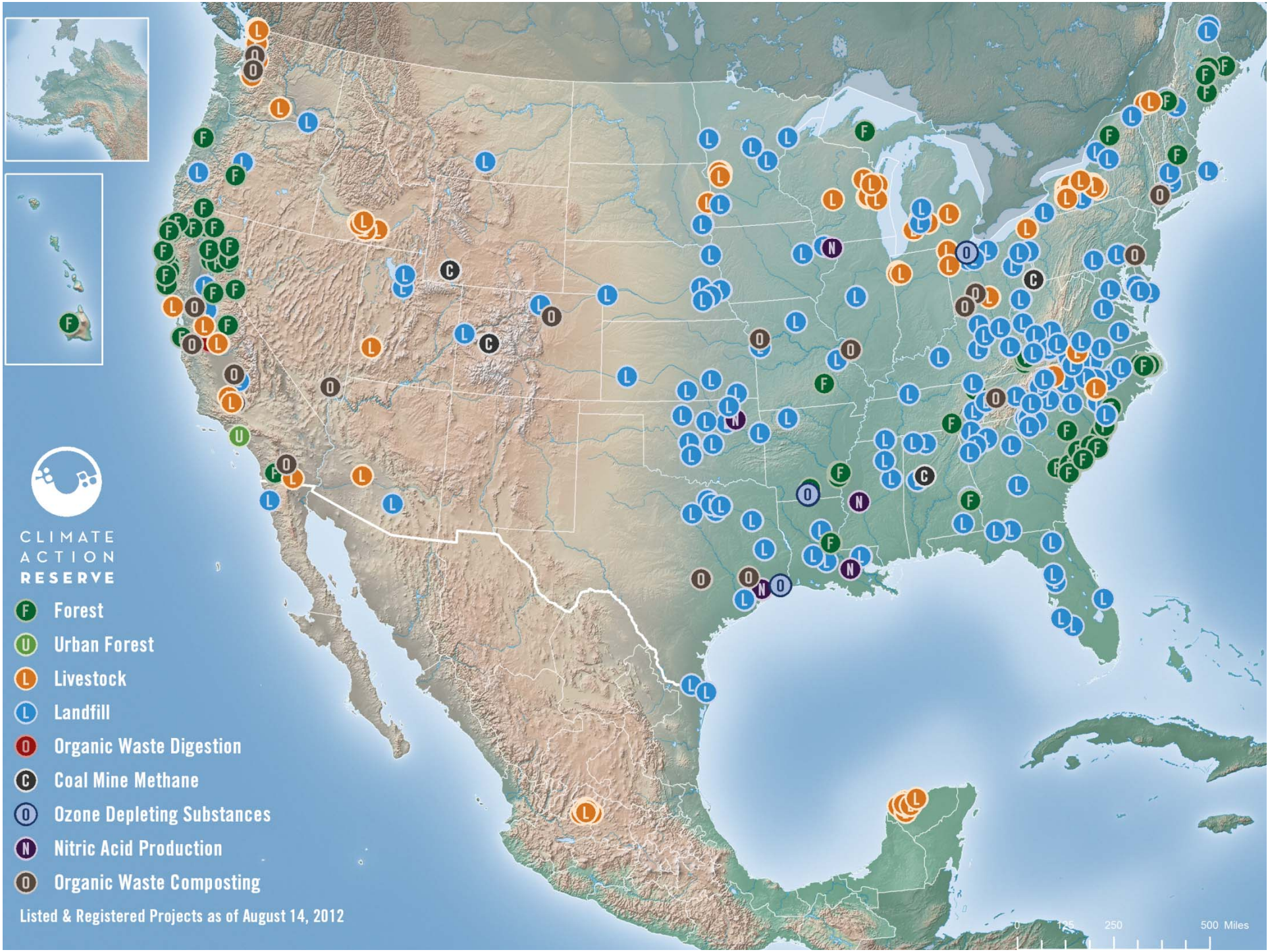
- Non-governmental organization created by California state legislation in 2001
- Currently functions as a voluntary carbon offset program
  - Sets standards (offset “protocols”/methodologies)
  - Oversees verification
  - Operates registry and issue credits
- Will serve California cap-and-trade program

Reserve Offset Protocols

- Forestry
- Urban Forestry
- Livestock Methane Capture
- Ozone Depleting Substances (US)

Adopted for California Compliance

- Landfill Gas Capture
- Organic Waste Digestion
- Organic Waste Composting
- Coal Mine Methane
- Nitric Acid Production
- Rice Cultivation
- Nitrogen Fertilizer Management
- International: Mexico Livestock and Landfill; Article 5 ODS
- Future Development: Grasslands, Wetlands, EE/RE in Mexico


CLIMATE ACTION RESERVE
Forest
Urban Forest
Livestock
Landfill
Organic Waste Digestion
Coal Mine Methane
Ozone Depleting Substances
Nitric Acid Production
Organic Waste Composting
Listed & Registered Projects as of August 14, 2012
0
125
250
500 Miles

Forest Project Protocol

CLIMATE ACTION RESERVE

- **Goal: Create Incentives for Enhanced Carbon Sequestration in U.S. Working Forests**

- **Three Eligible Project Types:**
  - **Reforestation:** Tree planting on land with less than 10% canopy cover for at least 10 years, or following a significant natural disturbance that has removed at least 20% of the trees
  - **Improved Forest Management:** Activities that increase forest-based sequestration and/or decrease emissions
  - **Avoided Conversion:** Removing a significant conversion threat to non-forest use and dedicating the forest to continued forest cover

Carbon Accounting

- Credits issued for net gain in carbon stocks relative to baseline
- Carbon stock accounting:

Carbon Pool	Accounting
Standing Live (living trees)	Required for all project types
Standing Dead	Required for all project types
Lying Dead	RF site preparation emissions only
Shrubs & Herbaceous Understory	RF site preparation emissions only
Litter and Duff	RF site preparation emissions only
Soils	Site preparation emissions (if any) Avoided emissions for AC projects
Harvested Wood Products (HWP)	Required for all project types

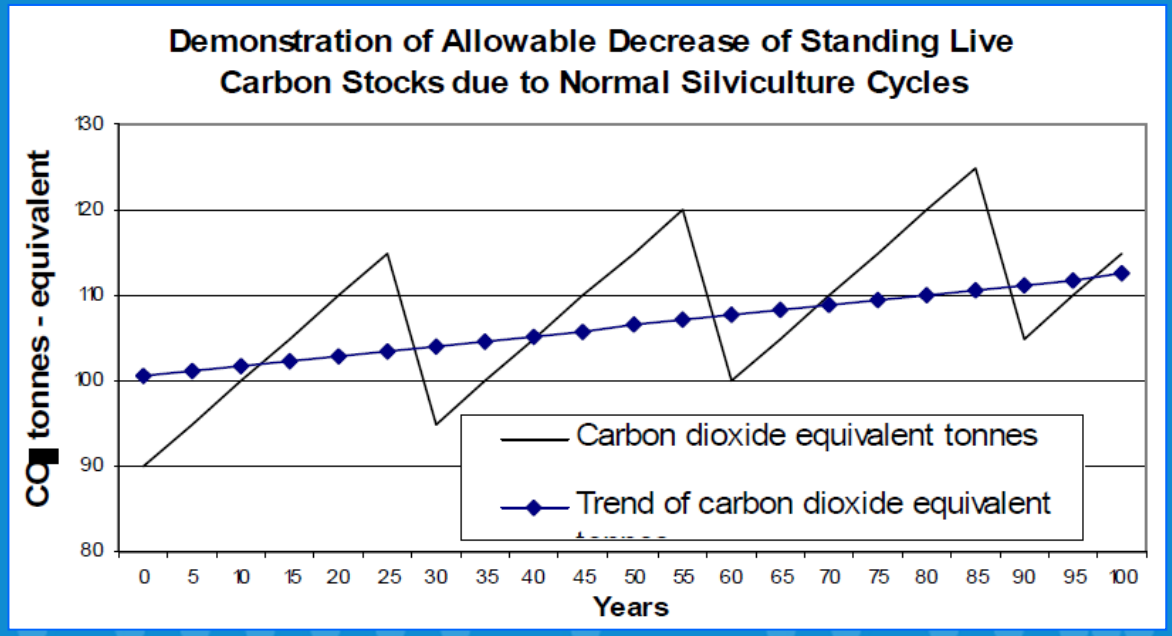
Carbon Accounting

- Other GHG Emission Accounting:

Source / Sink	Accounting
Combustion emissions from site preparation activities	Required for RF projects only
Combustion emissions from transportation/disposal of HWP	Not included (emissions capped, outside accounting boundary)
Emissions associated with HWP substitutes (e.g., alternative building materials)	Not included (emissions capped, outside accounting boundary)
Displaced combustion emissions from bioenergy production	Not included (emissions capped, outside accounting boundary)
Forest carbon “leakage”	Required for all project types

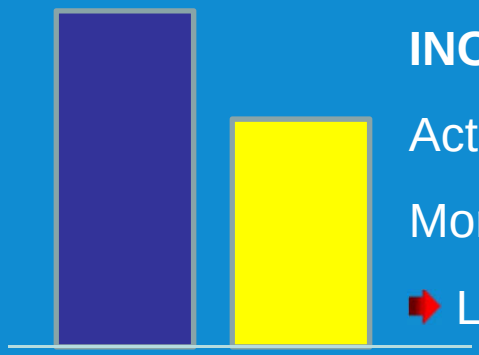
Other Accounting Requirements

- **Quantification Certainty**
  - Carbon stock estimates must have standard error < 20%
  - For SE between 5% and 20%, a “confidence deduction” is applied to project (not baseline) estimates
- **Projects Must Maintain/Increase Live Tree Carbon**



Harvested Wood Products

- Two main “pools” of HWP carbon:
  - Carbon in in-use wood products
  - Carbon in wood products sent to landfills
- Accounting depends on whether wood product production is increased or decreased compared to baseline

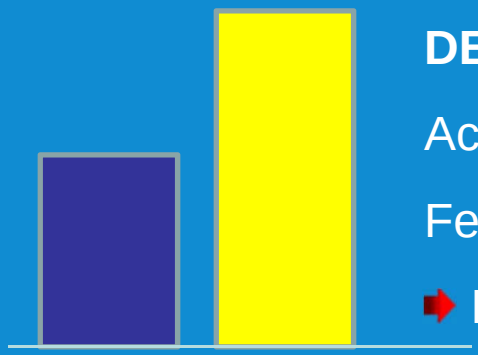


INCREASED

Actual > Baseline

More credit, but…

➧ Landfill Excluded



DECREASED

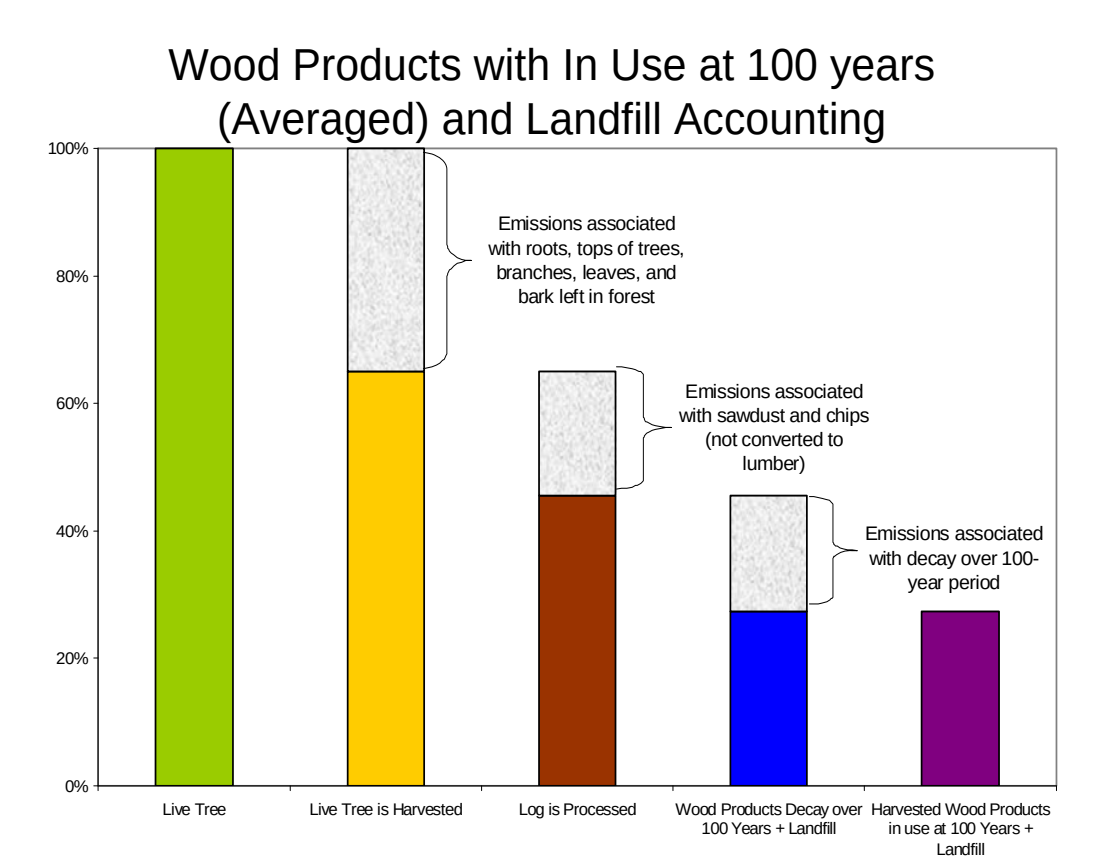
Actual < Baseline

Fewer credits, and…

➧ Landfill Included

Harvested Wood Products

- Accounting is based on the average amount of carbon expected to remain stored in wood products over 100 years (Data from US DOE)



Leakage Accounting

- Actual net change in HWP carbon depends on how the market for wood products responds to changes in production
  - Protocol uses a default 20% market response rate

- Additional leakage accounting requirements apply to Reforestation and Avoided Conversion projects:
  - Reforestation projects must account for displaced agricultural activity, using standard defaults for applicable conditions
  - Avoided conversion projects must account for displaced development activities using standard defaults

Permanence Requirements

- Any net increase in carbon storage must be maintained for 100 years from the year credits are issued
- A ***reversal*** occurs if there is a decrease in the sum of the stored carbon relative to the baseline
  - **Unavoidable Reversals**: fire, pests, disease, wind, etc.
  - **Avoidable Reversals**: over-harvesting, financial failure, project termination
- An insurance buffer pool is used to cover *unavoidable* reversals
- Project developers must compensate for *avoidable* reversals

Monitoring & Verification

- Projects must be verified by accredited, third-party verifiers for full duration of permanence commitment (100 years from last credit issuance)
- Site visits are required at least once every 6 years
  - Desk reviews allowed in interim years
- Sample plots must be re-measured at least once every 12 years
- Aggregation rules allow for reduced sampling and verification costs for small projects (Reserve protocol only)

More Information

- Full Information Available on Our Website
  - http://www.climateactionreserve.org/how/protocols/forest/

- Derik Broekhoff
  - derik@climateactionreserve.org
  - +1 (213) 542-0299