

Climate Action Reserve Special Topics Series

Webinar will begin shortly

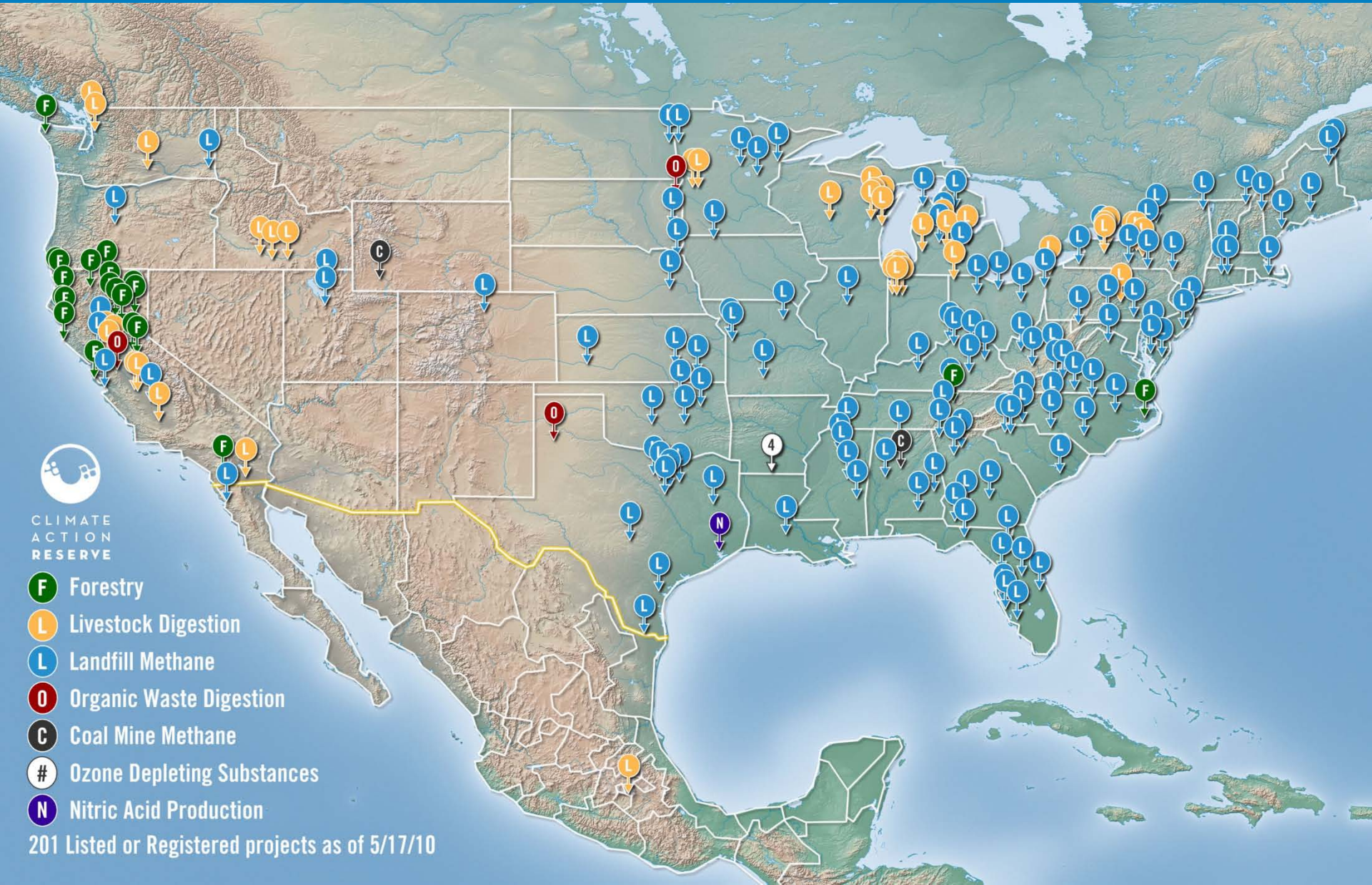
For audio, use your computer speakers, or dial (484) 589-1011

Access code: 617-838-236



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Listed & Registered Projects





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Reserve Stats

Launch date	May 2008
CRTs registered	5 million
Account holders	328
Projects submitted	351
Exchanges	CRT futures are traded on: <ul style="list-style-type: none">• Chicago Climate Futures Exchange (CCFE)• Green Exchange
Recent prices	\$4-8 per CRT



Reserve Webinars

- Overview of the Climate Action Reserve
 - 1st week of each month
- Project Developer and Verifier Training
 - 2nd week of every other month
- Special Topics Series
 - 3rd week of each month
- Announcements go to mailing list during the last week of each month
- **Event calendar:** <http://www.climateactionreserve.org/news-and-events/events/event-calendar/>



Special Topics Series

- Guest speakers and staff discussing new protocols or interesting topics regarding projects or protocols
- We assume that you have at least attended the Overview webinar and have a general understanding of our program

TODAY:

- John Nickerson
- Reporting requirements for forest projects, including inventories and baseline modeling
- Slides will be posted online after the presentation



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A Road Map to Address Reporting Requirements for Forest Carbon Projects

John Nickerson

Webinar

May, 2010



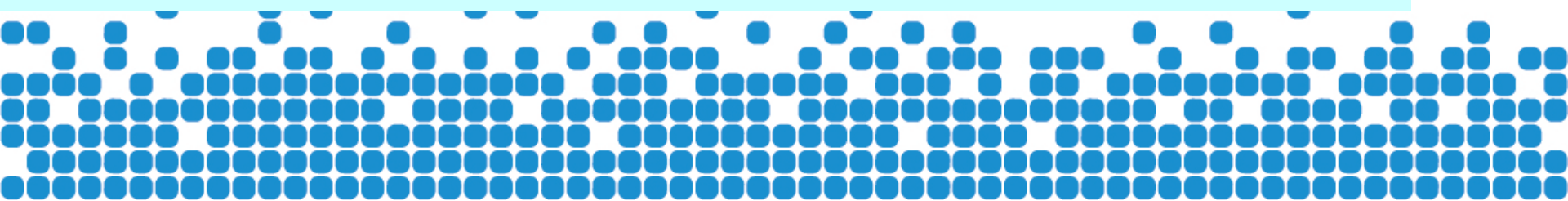
Background - Project Registration



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- Project submittal is reviewed by Reserve staff.
- If the review is satisfactorily completed the project is “listed” on the Reserve.
- The public can access the project submittal forms from the Reserve.
- Project verification can not occur until project is listed.

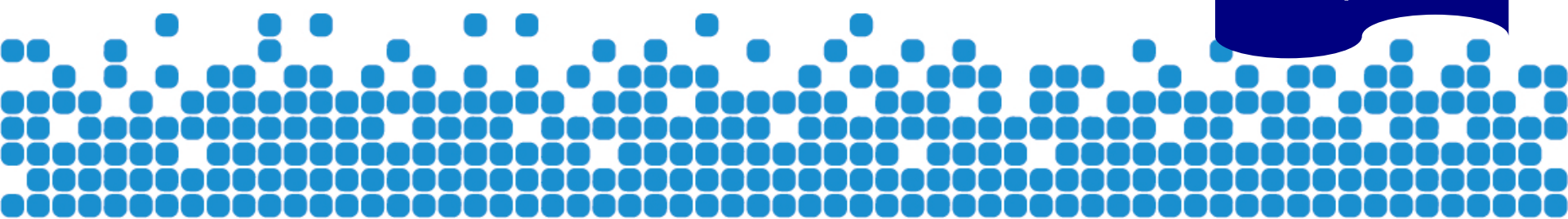
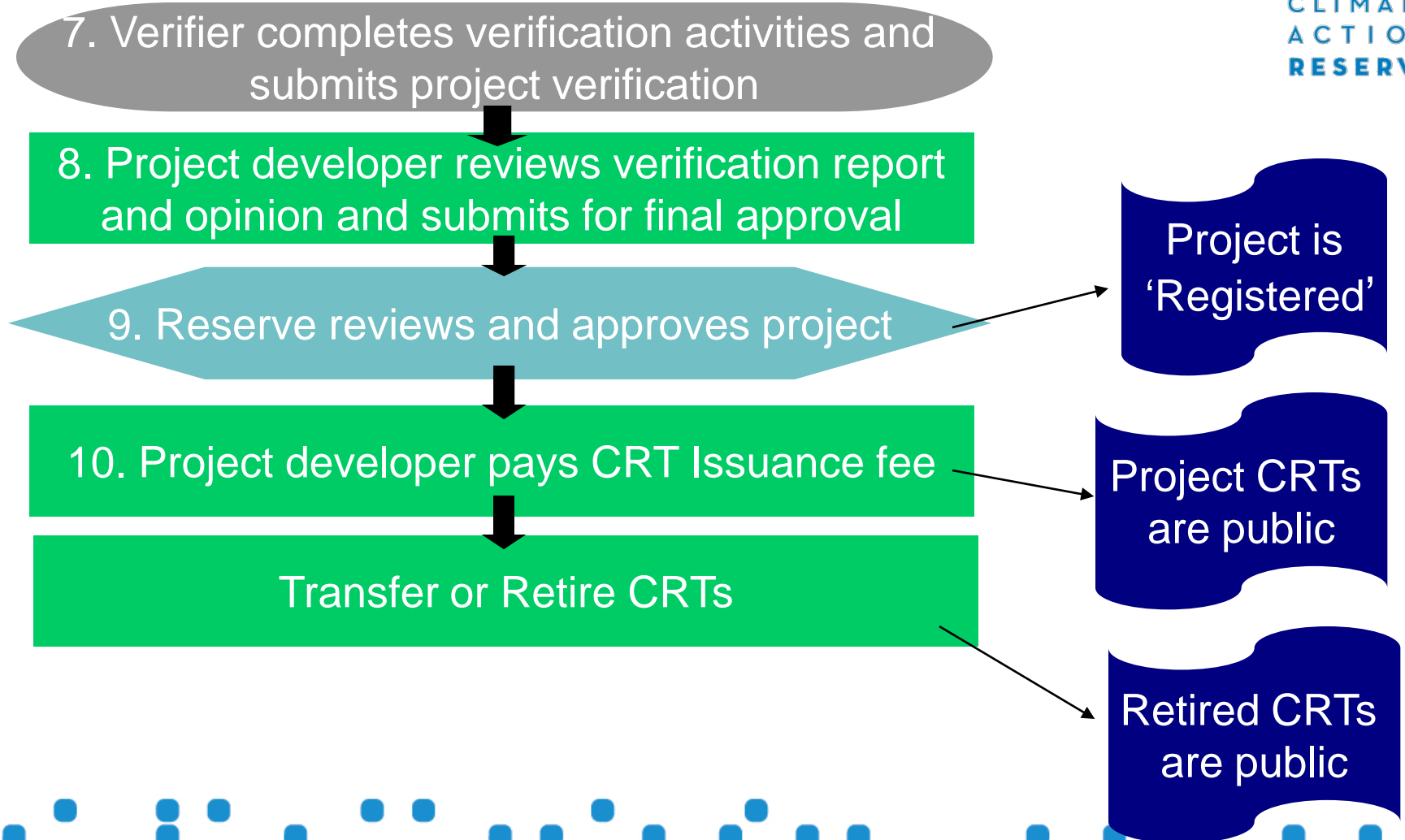
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Background - Project Registration



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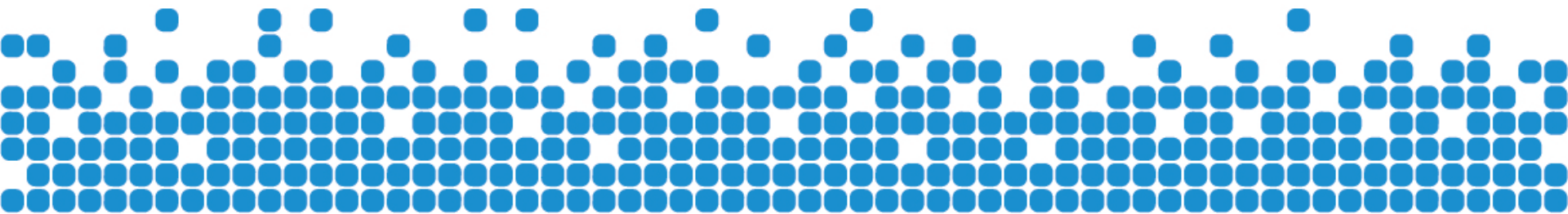


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Focus of Webinar

Preparation of Project Documentation

Purpose is to Identify an Outline to Facilitate Project Development





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Project Design Document

1. Moving toward guidance to standardize requirements in Section 9 of the Forest Project Protocol (Reporting Requirements)
 - ✓ Facilitate verification
 - ✓ Assist to ensure all required elements are addressed in a structured form
2. The example today focuses on Improved Forest Management
3. Additional effort will be added to broaden guidance for other project types





Project Design Document

1. Components of the Outline Include:
 1. General Description of Project Activity
 2. Start Date
 3. Project Area Definition and Description
 4. Eligibility Requirements
 5. Natural Forest Management
 6. Inventory Methodology
 7. Inventory Analysis
 8. Baseline Modeling
 9. Reversal Risk Calculation
 10. Wood Products
 11. Calculation Worksheet

Forest Project Design Document

Project Activity and Start Date



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Improved Forest Management Example

1. Identify Project Type and describe general project activities are consistent with project definition
 - ✓ Describe management activities that will increase sequestration or decrease emissions (or both)
 - ✓ Identify and justify the project start date (date commitment made to secure carbon associated with management activities above with a carbon project, for example)
2. Discuss the project's regional setting (State/County) and provide a low resolution map that displays the project within its regional context. Regional context to include:
 - ✓ Large water bodies
 - ✓ Large roads
 - ✓ Cities and towns

Forest Project Design Document

Project Area Definition



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1. Identify the project's area
2. Provide a general description, with text supported by maps, aerial photos, imagery, etc., of the project's attributes, including:
 - ✓ Forest species (ID, proportion, trends, etc, in project area)
 - ✓ Historical, current (zoning), and projected land use (within project and surrounding area)
 - ✓ Indigenous use (past and present)
 - ✓ Wildlife species
 - ✓ Recreation use
 - ✓ Water bodies (domestic water uses, rivers and streams, and lakes)
 - ✓ Topography

Forest Project Design Document

Eligibility Requirements

Improved Forest Management Example



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1. Describe how project meets eligibility requirements, including:
 - ✓ Compliance with greater than 10% canopy closer requirement
 - ✓ Employment of natural forest management (describe generally here and in more detail later)
 - ✓ Project compliance with prohibition of broadcast fertilization restriction
 - ✓ Project does not overlap with a previous registered project, unless the previous project was terminated due to an Unavoidable Reversal

Forest Project Design Document

Natural Forest Management

Improved Forest Management Example



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1. Discussion of how project meets, or plans to meet, demonstration of sustainable management requirement (if commercial harvesting is planned or ongoing) through the following options:
 - ✓ Certification (FSC/SFI) where harvest levels can be permanently sustained
 - ✓ Agency approved long-term management plan that demonstrates harvest levels can be permanently sustained
 - ✓ Demonstration of management that limits canopy openings.
2. Quantification of current species condition (by basal area) that demonstrates compliance to compositional requirements (from Appendix F)
3. Quantification of standing dead wood and qualification of lying dead wood. Discussion to include comparison to requirements for retention/recruitment.

Forest Project Design Document

Inventory Methodology

Improved Forest Management Example



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1. Identification of the carbon pools included in the quantification methodology.
2. For each pool sampled, a description of:
 - ✓ Plot site location (grid/clumped/random/systematic)
 - ✓ Stratification (pre and post sampling) rules (if applicable) to include map of vegetation strata, results (area by strata) of stratification, tools for application (GIS, aerial photos, etc). Discussion to include how boundaries are determined.
 - ✓ Plot monumenting processes
 - ✓ Data management (collection, storage, analysis)
 - ✓ Quality control (ex. check cruising methodologies)
 - ✓ Inventory update process for disturbance, growth, new plots
 - ✓ Regression methodologies and results (for tree heights)

Forest Project Design Document

Inventory Analysis

Improved Forest Management Example



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1. Description of biomass equations used
2. Demonstration of application of biomass equations on a subset of data to address the 'black box' challenge
 - ✓ Should be able to demonstrate that the appropriate equations are incorporated in any 'black box' approach
3. Description of methodology and results of statistical error and confidence calculations.
 - ✓ Must be able to demonstrate statistical error calculations are appropriate for sampling design (show references)
4. Present results of inventory analysis for all pools included in project

Forest Project Design Document

Baseline Modeling – Step 1

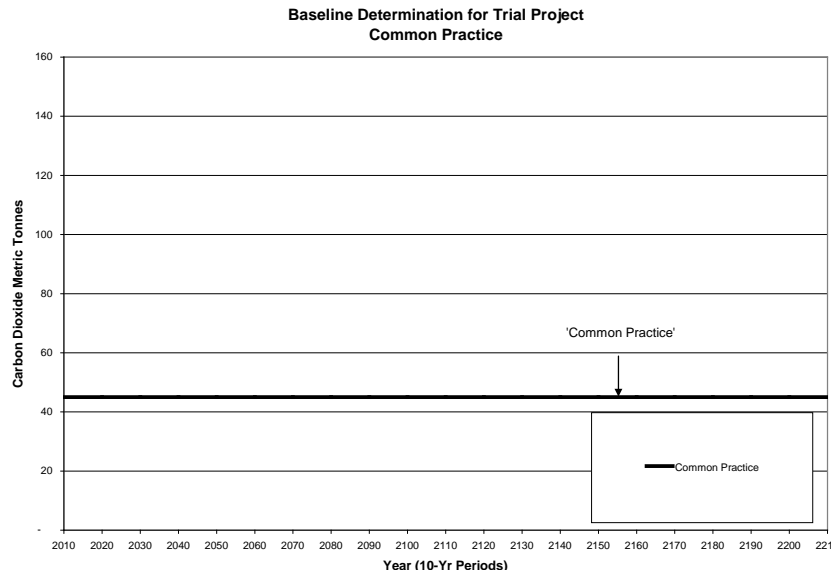
Improved Forest Management Example



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Determine the Common Practice statistic of standing live above-ground CO₂ tonnes for the project's Assessment Area:

- ✓ Produce a map that displays the project together with the Ecosession/Supersection to demonstrate correct selection of Assessment Area data
- ✓ Identify and document the Common Practice Statistic from Appendix F (available on website)
- ✓ Documentation should include per acre inventory values (for comparison to Appendix F) and expanded value to project area



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

Baseline Modeling – Step 2

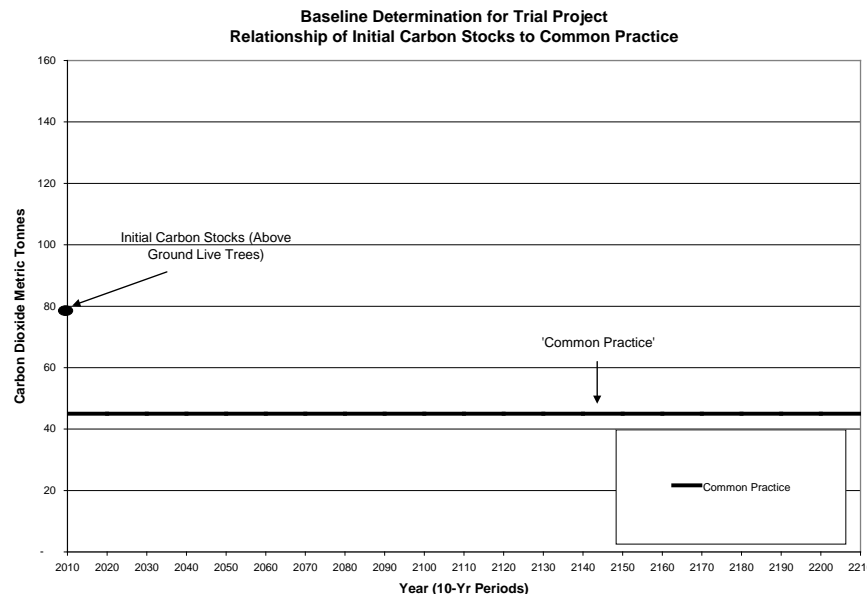
Improved Forest Management Example



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Determine if the project stocks are above or below Common Practice:

- ✓ Chart the comparison of current stocks of CO₂ in above-ground live trees (from inventory analysis to Common Practice chart).



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

Baseline Modeling – Step 3

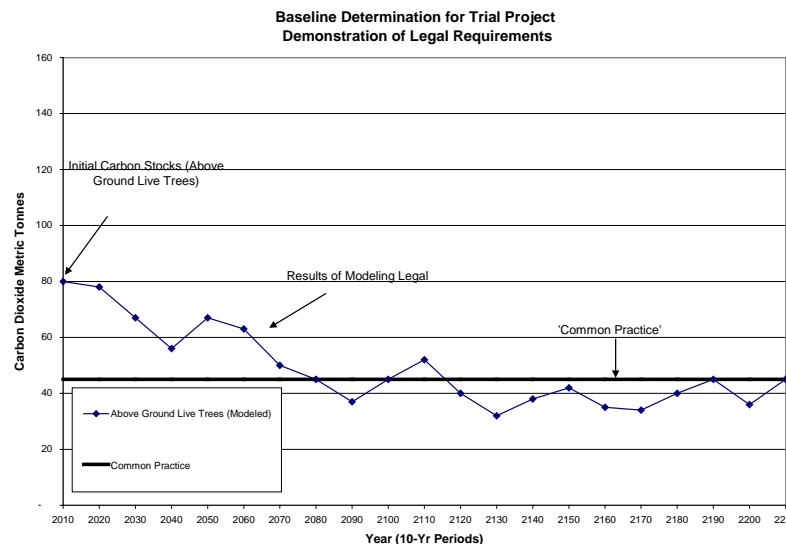
Improved Forest Management Example



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Perform computer simulation of growth and harvest, taking into consideration legal and financial constraints

- ✓ Document similar activity to modeling scenario that has and is occurring within Assessment Area and on similar landscapes (maps, reports, aerial photos, etc.) to address financial constraints
- ✓ Identify and document legal constraints that affect management activities on the project area. Constraints to harvest should be identified in qualitative terms and quantified as to modeling logic (silviculture constraints)
- ✓ Add the periodic modeling outputs of standing live above-ground CO₂ tonnes



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

Average of Baseline Modeling of Standing Live Trees – Step 4

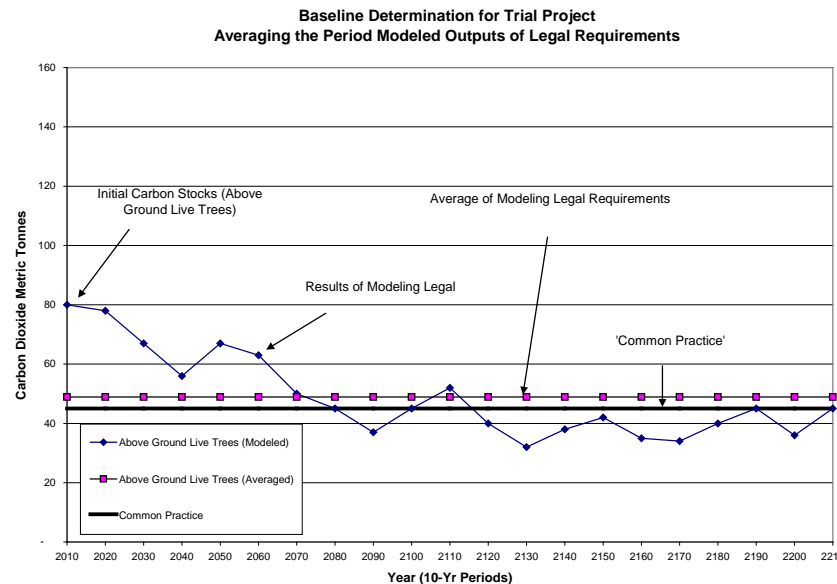
Improved Forest Management Example



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Calculate the average of the periodic modeled outputs of standing live above ground CO₂

- ✓ The average must be at or above the Common Practice line (for this example with starting stocks above Common Practice). If not, additional silviculture constraints must be added to the modeling and re-modeled
- ✓ Add the periodic averaged outputs to the chart



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

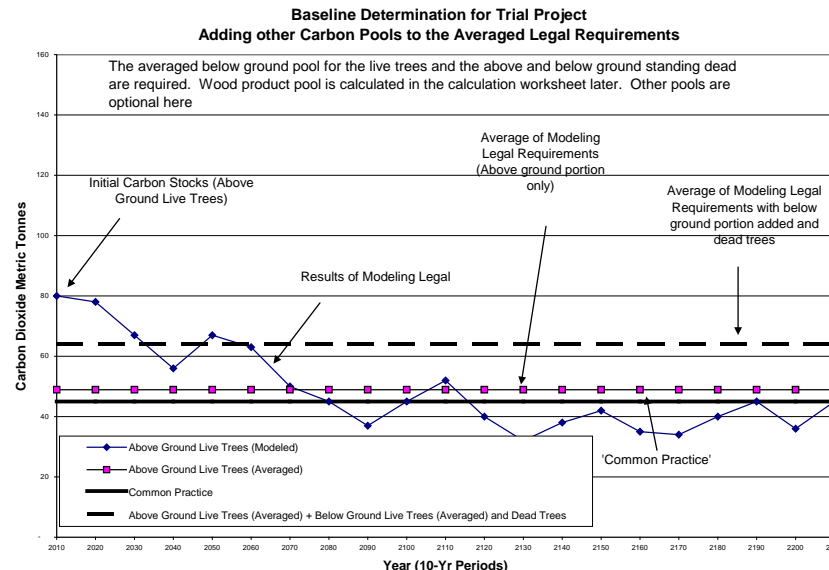
Average of Baseline Modeling plus other Averaged Required and Optional Pools – Step 5 Improved Forest Management Example



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Add the required averaged below ground portion of the live trees (associated with the above ground portion from the last step) and the averaged standing dead pool to the averaged above ground live tree line

- ✓ Any additional optional pools must be included as well if they will be quantified in the project stocks



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

Final Baseline and Initial Project Stocks

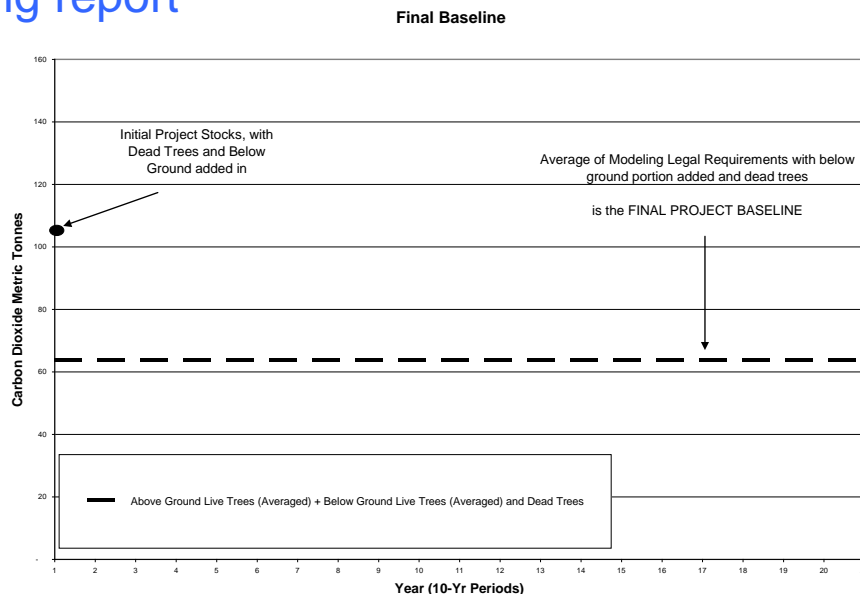
Improved Forest Management Example



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The averaged line of both above-ground and below-ground carbon standing live trees are added to averaged standing dead trees to produce the final baseline (CO₂ tonnes)

- ✓ The current below-ground portion of standing live trees and the current total (above and below-ground carbon) are added to the above-ground live trees to determine the initial project stocks
- ✓ Both values are added to the calculation worksheet submitted as part of the monitoring report



Note: The example displays a project with initial live tree stocks above the Common Practice statistic and legal requirements that allow reduction of stocks. The guidelines vary based on financial, legal and initial stocks.

Forest Project Design Document

Risk Reversal Assessment



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1. Each forest project must calculate its reversal risk rating by following the guidelines in Appendix D of the FPP.
 - ✓ This rating is based on several categories and is used to determine how many CRTs a forest project must contribute to the Reserve's Buffer Pool.
 - ✓ Project Developers should document rationale for inputs into the risk reversal worksheet
 - ✓ Summary result is inserted into the Calculation Worksheet

Forest Project Design Document

Wood Products



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1. Calculation of Wood Products should use the same biomass equations as those used to calculate live tree biomass.
 - ✓ Equations can be broken out into various portions of the tree, including whole trees and the bole without bark
 - ✓ Ensures consistency in values between carbon pools

Forest Project Design Document

Calculation Worksheet



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	Year			Notes	
	2010	2011	2012		
Calculating GHG Reductions/Removals for Onsite Carbon Stocks					
1	Actual Onsite Carbon Stocks (tonnes CO2e)			This is the total carbon in all reported pools within the Project Area, reported as a best estimate, regardless of statistical confidence.	Data entered by Forest Owner at each verification
2	Confidence Deduction			The confidence deduction is based on the sampling error of the combined estimate of carbon in all onsite carbon pools (Appendix A, Section A.4). In this example, sampling error is progressively reduced in years 3-5, leading to a lower confidence deduction.	Data entered by Forest Owner at time project is registered
3	Adjusted Actual Onsite Carbon Stocks (adjusted for confidence deduction)			Actual onsite carbon stocks adjusted using the confidence deduction.	Data calculated automatically
4	Annual Increment in Actual Onsite Carbon Stocks (tonnes CO2e)			Difference from prior year (ΔAC_{onsite}). In year 1, prior year stocks are assumed to be zero, so difference is equal to initial adjusted onsite carbon stocks.	
5	Baseline Onsite Carbon Stocks (tonnes CO2e)			Baseline estimates of onsite carbon stocks are not affected by the confidence deduction. Baseline carbon stocks are determined from an initial inventory and are modeled thereafter.	
6	Annual Increment in Baseline Onsite Carbon Stocks (tonnes CO2e)			Difference from prior year (ΔBC_{onsite}). In year 1, prior year stocks are assumed to be zero, so difference is equal to initial (unadjusted) onsite carbon stocks.	
7	Quantified GHG Reductions / Removals for Onsite Carbon Stocks (tonnes CO2e)			Difference from prior year ($\Delta AC_{onsite} - \Delta BC_{onsite}$). May be negative, which would indicate that a reversal has occurred if credits were issued in any previous year. If no CRTs have been issued previously, then any negative amount is added to the "negativ	
Accounting for Carbon Stored in Wood Products					
8	Actual Carbon in Trees Harvested for Wood Products in (tonnes CO2e)			Based on actual carbon in standing live carbon stocks harvested in each year, prior to delivery to mills.	
9	Carbon in Trees Harvested for Wood Products in Baseline (tonnes CO2e)			Based on estimated carbon in standing live carbon stocks harvested each year in the baseline, prior to delivery to mills.	
10	Actual Carbon Stored Long-term in Wood Products (tonnes CO2e)			Calculated in Appendix C using actual harvested carbon values. If actual harvest volumes for the year are less than baseline harvest volumes, then this value will include carbon stored long-term in landfills.	
11	Baseline Carbon Stored Long-term in Wood Products (tonnes CO2e)			Calculated in Appendix C using baseline harvested carbon values. If actual harvesting volumes for the year are less than baseline harvesting volumes, then this value will include carbon stored long-term in landfills.	
12	Difference in Actual and Baseline Carbon Stored in Wood Products (tonnes CO2e)			Difference between actual and baseline carbon stored long-term in wood products in each year ($AC_{wpt,y} - BC_{wpt,y}$). May be negative.	
13	Multiplied by 80% Market Response Factor			The difference is multiplied by 80% to account for market responses to changes in wood product production (see discussion below Equation 6.1).	
14	Quantified GHG Reductions / Removals for Carbon Stored in Wood Products (tonnes CO2e)			Equal to $(AC_{wpt,y} - BC_{wpt,y}) * 80\%$. May be negative.	
Accounting for Secondary Effects					
15	Difference Between Actual and Baseline Carbon in Harvested Wood (tonnes CO2e)	-	-	-	The difference between the values in rows (8) and (9), above.
16	Secondary Effect Adjustment (tonnes CO2e)	-	-	-	Either zero, if the value in row 15 is positive, or 20% of the value in row 15 if it is negative. See Section 6.2.6. This example shows the calculation of SEY for Improved Forest Management Projects. For other project types, different methods and factors
Calculation of Total Net GHG Reductions/Removals and Buffer Pool Contribution					
17	Avoided Conversion Project Discount Factor	-	-	-	Not relevant for an Improved Forest Management or Reforestation Project.
18	Negative Carryover from Prior Year (tonnes CO2e)	-	-	-	This is any negative amount from the prior year's total net GHG reductions/removals that is not due to a reversal.
19	Total Net GHG Reductions/Removals (tonnes CO2e)	-	-	-	Equal to the sum of the values in rows 7, 14, 16, and 18. (The "avoided conversion project discount factor" in row 17 may be ignored for Improved Forest Management Projects.)
20	Total CRTs Issued	-	-	-	Total number of CRTs the Reserve will issue for quantified GHG reductions/removals. CRTs are not issued for partial tonnes.
21	Risk of Reversal %				This value is determined by completing a risk analysis in line with the requirements in Appendix D.
22	Required Buffer Pool Contributions (CRTs)	-	-	-	The number of CRTs that must be contributed to the Buffer Pool each year, based on the risk of reversal. Calculated by multiplying the total net GHG reductions/removals (row 19) by the risk percentage (row 21). Any remainder must be rounded up.
23	CRTs Issued to Project	-	-	-	Total CRTs issued to the project in each year.

Contact



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