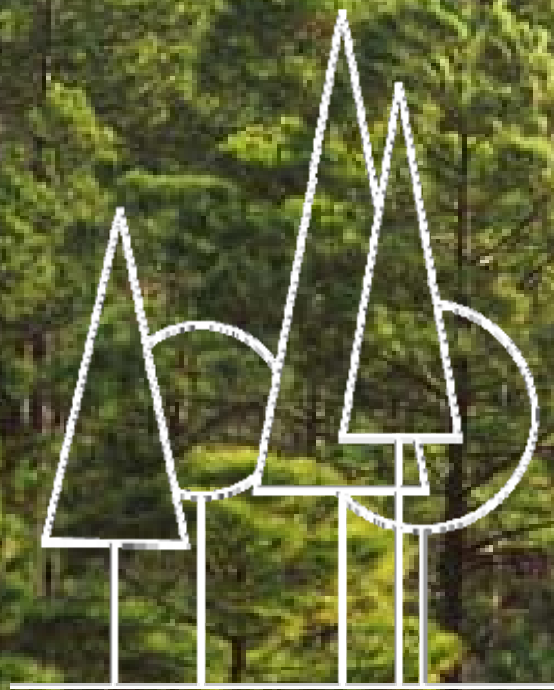


Rick Larkin CWB, CF<sup>®</sup>

Manager, Wildlife & Environmental Services

American Forest Management Inc.

Charlotte, NC



American Forest  
MANAGEMENT

# AFM

AFM is currently a CCX approved Verifier  
(think auditor)

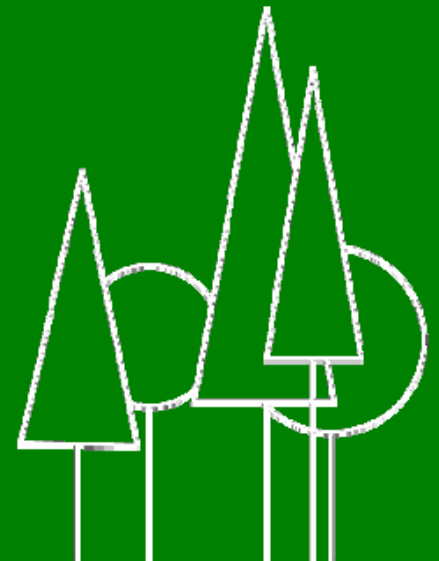
AFM is considering partnering with a CCX  
approved aggregator – to provide this  
service to clients

AFM does not see the carbon market as  
being a significant money maker for our  
company



# AFM

I am not here to sell you on the idea of entering the carbon market!!!

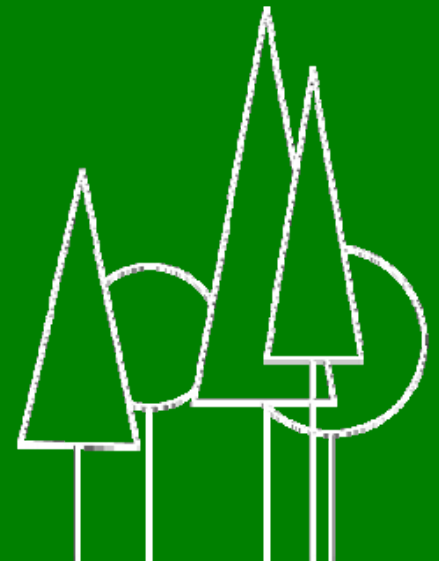


# Background

The interest in capturing and storing atmospheric carbon is increasing

Why?

Global Warming – Increase in Greenhouse Gases



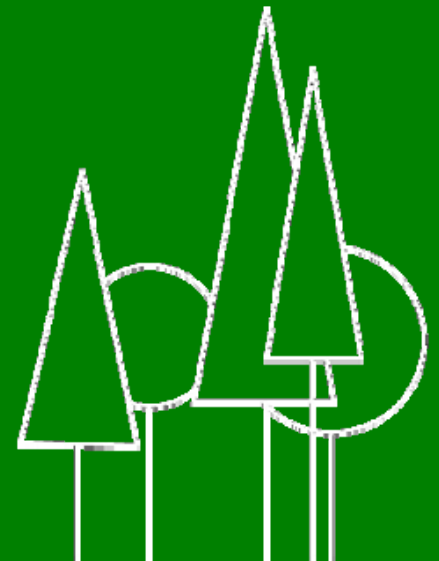
# Background

Benefits of storing carbon

Offset global warming

Kyoto Protocol

Forestry is potential method



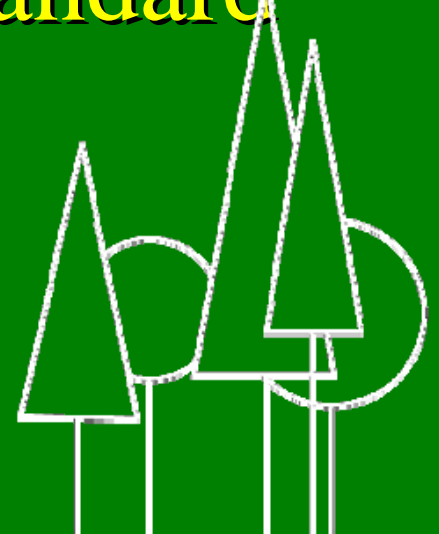
# Carbon Sequestration

Not as easy as some make it sound.

Costs may outweigh income (at current prices)

Long-term Commitment – 15 to 100 years depending on Carbon Standard

Risks?



# Carbon Sequestration

Numerous Carbon Standards – may vary widely in price and requirements

Federal Legislation likely in 2009 or 2010

Afforestation, Managed Forests, Preservation

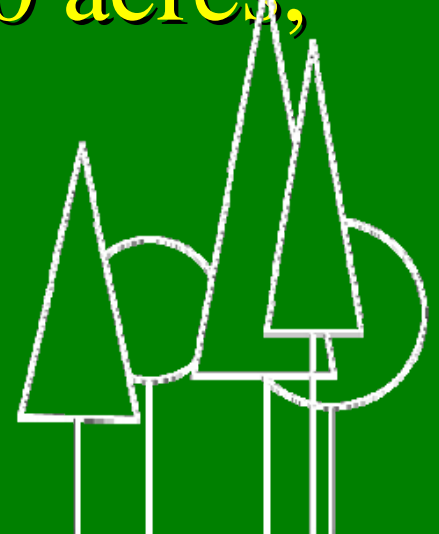


# Definitions

## Aggregator

Company registered with Carbon market (CCX) that can sell carbon credits

Landowners with less than 5,000 acres, must use an Aggregator



# Definitions

## Additionality

The project must provide a positive net change in carbon storage.

Afforestation – Easy to understand.

Managed Forest Projects – Managed forest projects can sequester more carbon over the same long term planning horizon as an afforestation project.



# Definitions

## Additionality cont.

When harvesting occurs, the recognition of harvested wood products that have long-lived life cycles is a legitimate carbon pool associated with managed forests.

Additional carbon can also be sequestered through a change in rotation length or in harvesting less volume than planned.



# Definitions

## Leakage

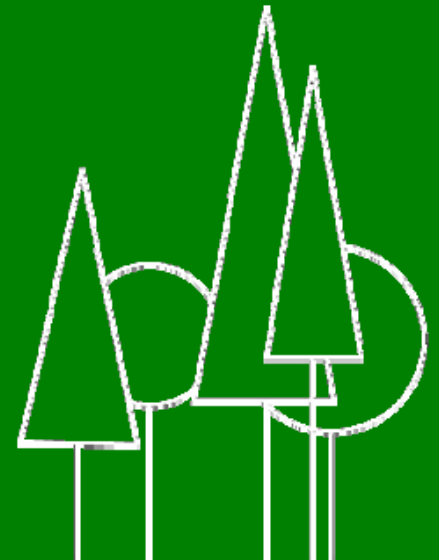
Leakage is a term that addresses the impact that the project might have, i.e. an increase or decrease in sequestered carbon, outside the boundaries of the project, and can be difficult to measure for forestry projects.



# Definitions

Leakage cont.

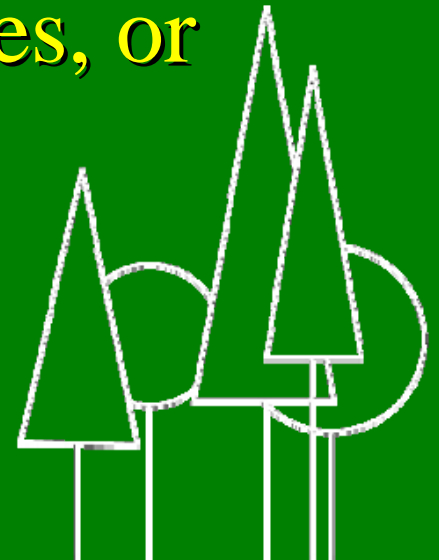
Projects may shift activities in ways that were not intended, e.g. an afforestation project in one location may displace an afforestation project in another area, or a Landowner may shift harvest to a different property.



# Definitions

## Permanence

Ensuring that a forestry project is permanent can be difficult since the amount of carbon sequestered might be “emitted” through natural disasters such as wildfire, insects, and hurricanes, or through management activities.



# Definitions

Permanence cont.

When these events occur, some registries require that the reduction in sequestered carbon be included in the net change calculations so that credits previously issued can be paid back and no additional credits can be issued until the net change in carbon stocks is again positive.



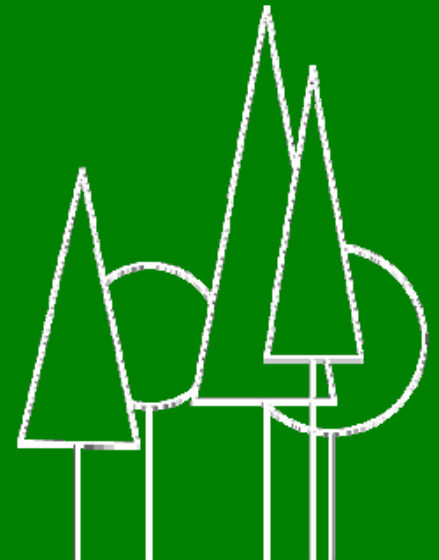
# Entering The Carbon Market

Numerous Carbon Standards

All Standards are voluntary (currently)

Each Standard is different

Simple Huh?



# Entering The Carbon Market

## Managed Forest Projects

Property must be certified as being sustainably managed

SFI, ATFS or FSC

Must have inventory to establish baseline (90% CI) – cost?

Landowner must maintain forest under sustainable management (15 years for CCX)

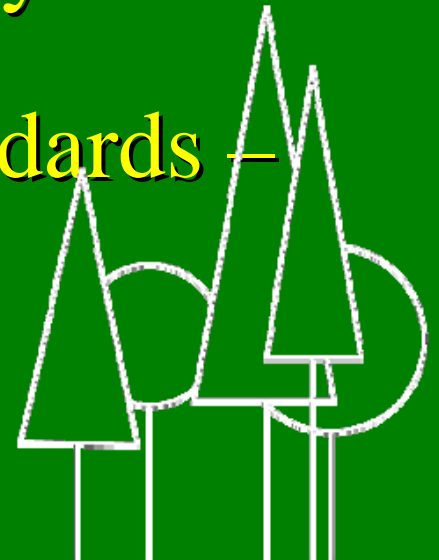


# Entering The Carbon Market

Must be able to track and report carbon stocks annually

Must disclose any changes to carbon stock  
i.e. harvest, fire, insect loss

Allow verifiers to visit your property to  
verify carbon storage – annual  
verification required by most standards –  
expensive

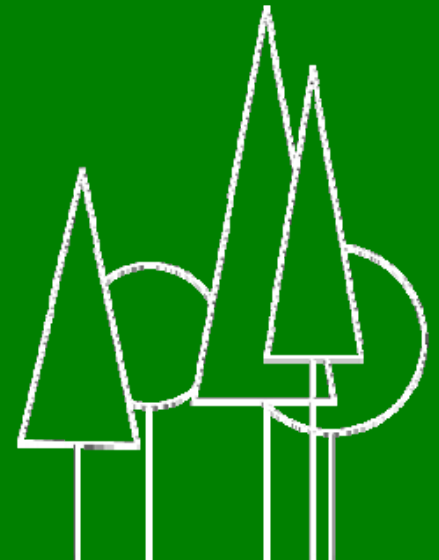


# Entering The Carbon Market

CCX requires that participants place 20% of carbon credits into a reserve pool.

Includes 20% of all growth above baseline (annually)

Pool released near the end of the contract



# RISKS

Non-compliance

Failure to comply with Aggregator or CCX requirements

Landowner would be required to return a quantity of carbon credits accrued and sold, or pay an amount equal to the cost of credits sold.

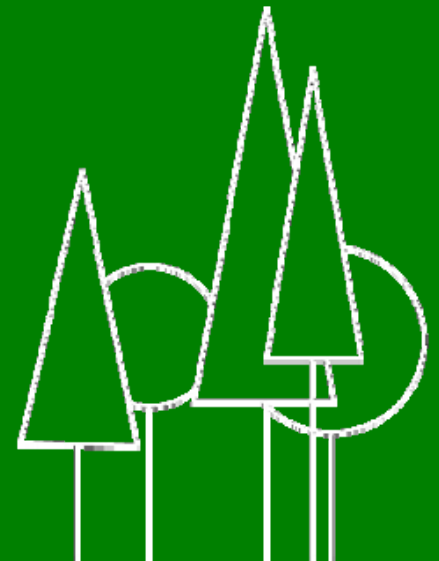
Landowner may not be allowed to further participate in the CCX.



# RISKS

Catastrophic Loss – Hurricane, Fire, etc.

CCX will deduct credits from Reserve Pool to compensate for loss or landowner can purchase credits to make up for loss at current market value.



# RISKS

Landowner can only lose 20% held in reserve pool, but the landowner must replace credits surrendered from pool.

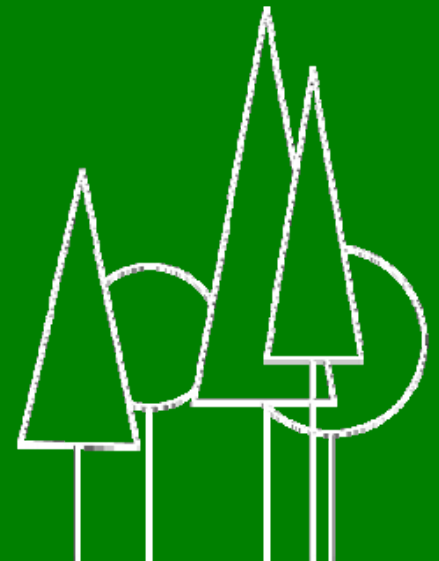
Landowner required to purchase credits equal to loss, or replace credits from carbon management on property – rate of 1.2 credits per credit lost.



# RISKS

Net Emissions – harvest surpasses annual growth

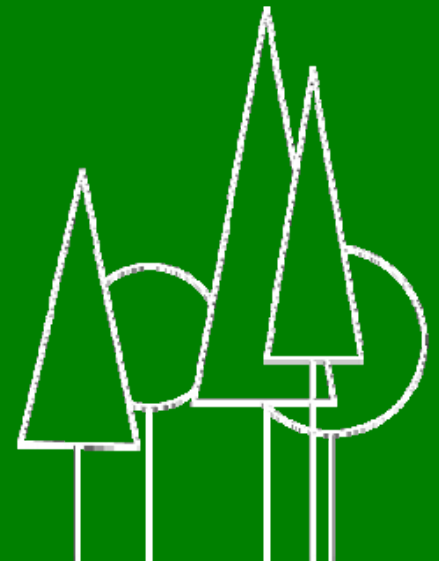
Landowners required to compensate the market financially or with banked credits.



# Income

Credits currently selling for \$1.25 to \$8.00  
depending on Carbon Standard

CCX market peaked in 2008 at around  
\$6.00 per metric ton CO<sub>2</sub>



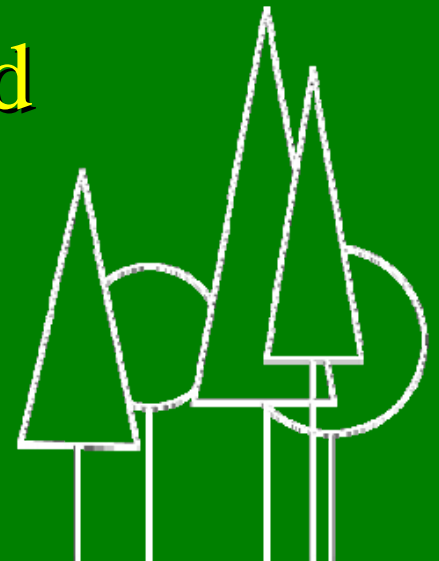
# Costs

Initial inventory for 100 acre property – approximately \$1000.00.

Aggregator Cost – 10% to 20% of gross revenue

CCX Cost – \$0.20/credit sold

Verification Cost – \$0.20/credit sold

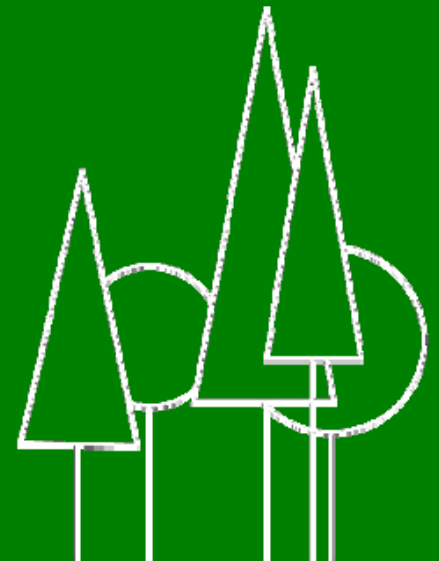


# Costs

If you decide to enter the carbon market  
and partner with an aggregator

**Read your contract very carefully**

**Know what your costs will be**



# Example

100 acre property in pine plantation on good site, growing 5 tons of wood per acre per year

This equals 2.5 tons CO<sub>2</sub> per acre or 250 tons per year for the property

At \$2.00 per ton = \$5.00 per acre per year gross revenue.

At \$8.00 per ton = \$20.00 per acre per year



# Example

250 CO<sub>2</sub> Credits – 50 credits (20% for Reserve Pool) = 200 credits available for sale.

Credits selling for \$2.00/credit = \$400  
gross revenue

\$400 – \$80 (Aggregator Fee) – \$40 (CCX fee) – \$40 (Verification Cost) = \$240 per year

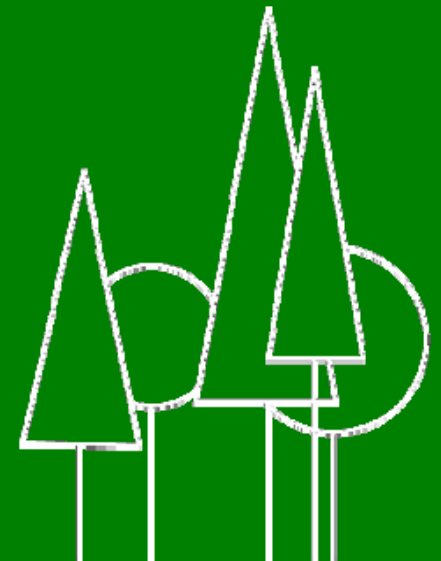
\$2.40 per acre per year.



# Example

At \$2.00 per ton CO<sub>2</sub> It would be the 5<sup>th</sup> year before you began showing a profit.

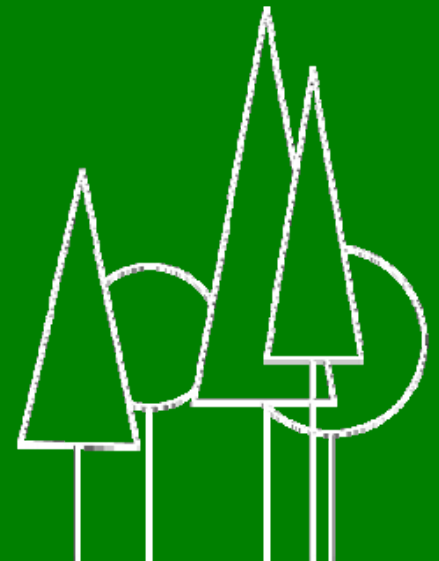
Net Revenue ( $\$2.40 * 100 * 5$ ) = \$1200 -  
\$1000 (Inventory Cost) = \$200.00



# Example

At \$6.00 per ton CO<sub>2</sub> It would be the 2<sup>nd</sup> year before you began showing a profit.

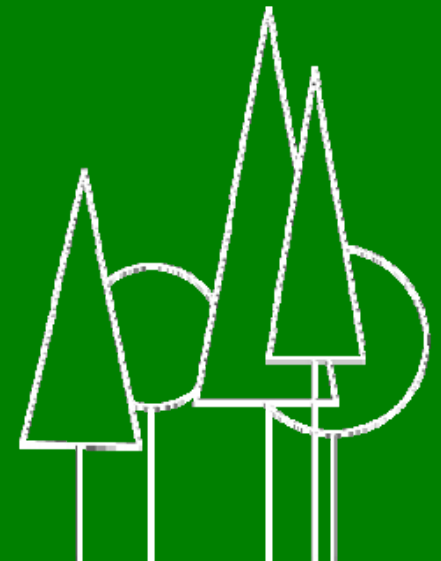
Net Revenue ( $\$8.80 * 100 * 2$ ) = \$1760 –  
\$1000 (Inventory Cost) = \$760.00



# Example

At \$12.00 per ton CO<sub>2</sub> you would show a profit in year 1.

$$\text{Net Revenue} = (\$18.40 * 100) = \$1840 - \$1000 \text{ (Inventory Cost)} = \$840.00$$



# Conclusion

Federal Legislation likely no later than 2010  
– will likely change the playing field significantly

Legislation will likely (hopefully) create one system and level the playing field

Legislation may (will) eliminate the voluntary Carbon Markets

Legislation may allow “early action credits”



# Conclusion

Forestry opportunities may or may not play a significant role?

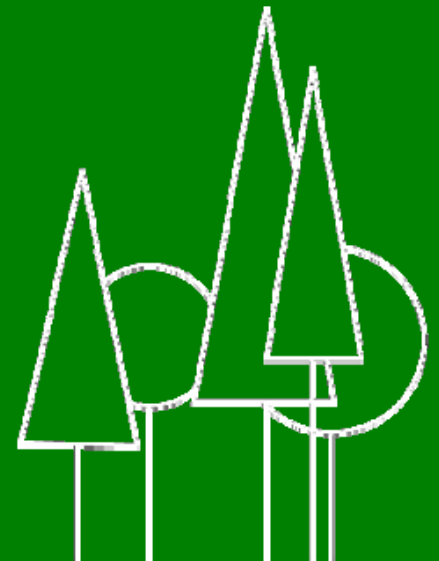
Forestry not recognized in European cap and trade program

Forestry is part of current legislation:  
Waxman and Markey American Clean Energy and Security Act



# Conclusion

*Waxman and Markey American Clean Energy and Security Act similar to California Climate Action Registry*

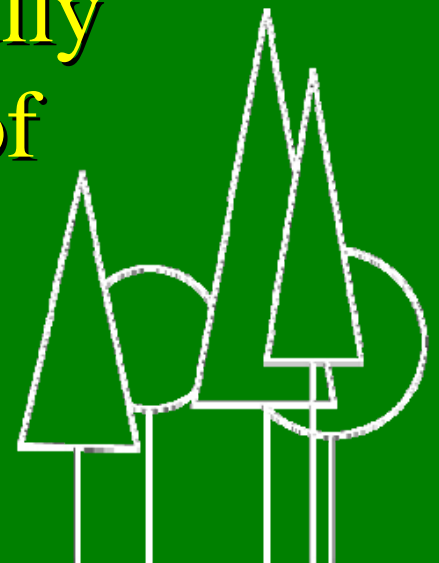


# Recommendations

## Tread Carefully

Get ready for Carbon Market by:

- Inventory Property
- Have property Certified (ATFS)
- Plan future harvest very carefully
- Monitor legislation and price of carbon credits



# Recommendations

Get ready for Carbon Market by:

- Some landowner are getting set up for carbon market to hopefully take advantage of increased prices after legislation passes
- Prices on CCX spiked last summer when legislation was introduced in Congress



Questions?

