

Carbon Credits

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Today

- Carbon Credits – where it all began
- Carbon Offsets
- What could it mean for a landowner?

Where it all began...

- Earth Summit
- Green House Gases
- Global Warming
- Kyoto Protocol

Kyoto Protocol

95 percent of 1990 emission levels by
2008-2012

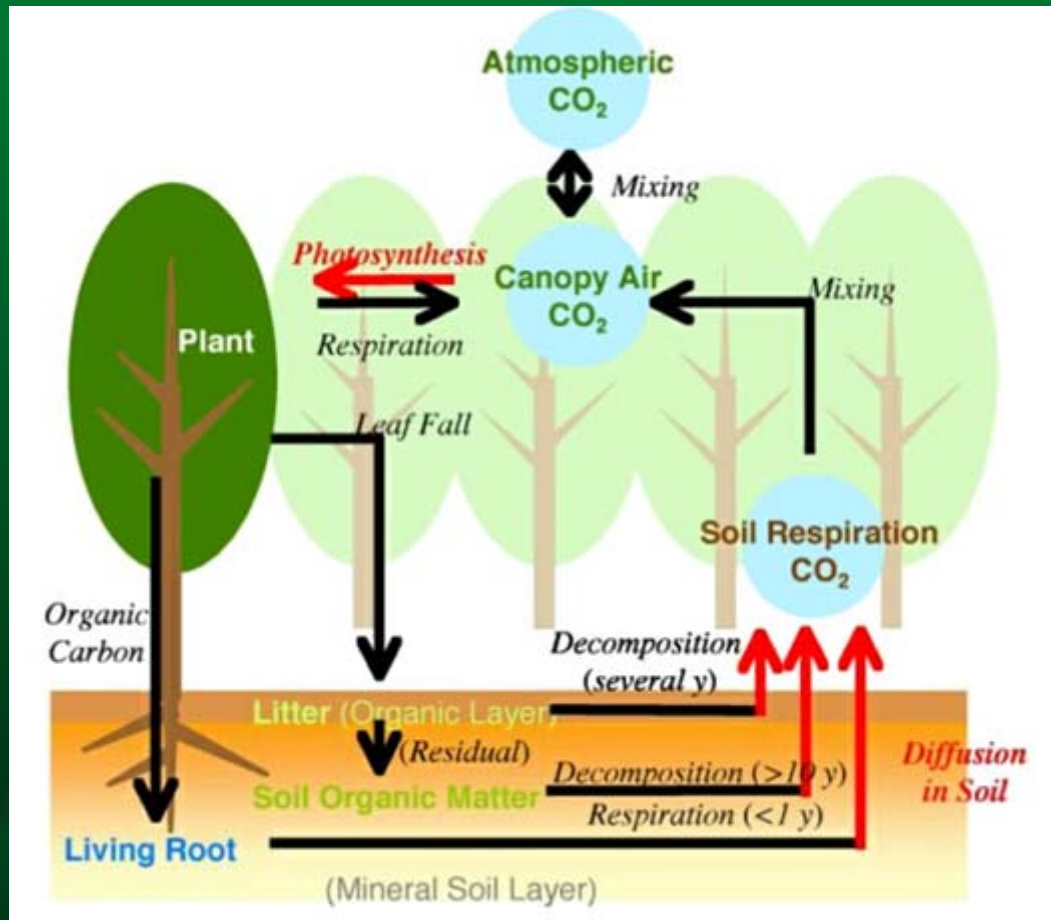
Gas	Alternate Name	Formula	1998 Level	Increase since 1750
Carbon dioxide		(CO ₂)	365ppm	87 ppm
Methane		(CH ₄)	1,745ppb	1,045ppb
Nitrous oxide		(N ₂ O)	314ppb	44ppb
Tetrafluoromethane	Carbon tetrafluoride	(CF ₄)	80ppt	40ppt
Hexafluoroethane		(C ₂ F ₆)	3 ppt	3ppt
Sulfur hexafluoride		(SF ₆)	4.2ppt	4.2ppt
HFC-23*	Trifluoromethane	(CHF ₃)	14ppt	14ppt
HFC-134a*	1,1,1,2-tetrafluoroethane	(C ₂ H ₂ F ₄)	7.5ppt	7.5ppt
HFC-152a*	1,1-Difluoroethane	(C ₂ H ₄ F ₂)	0.5ppt	0.5ppt

Carbon Offsets



Botany 101

Carbon Cycle

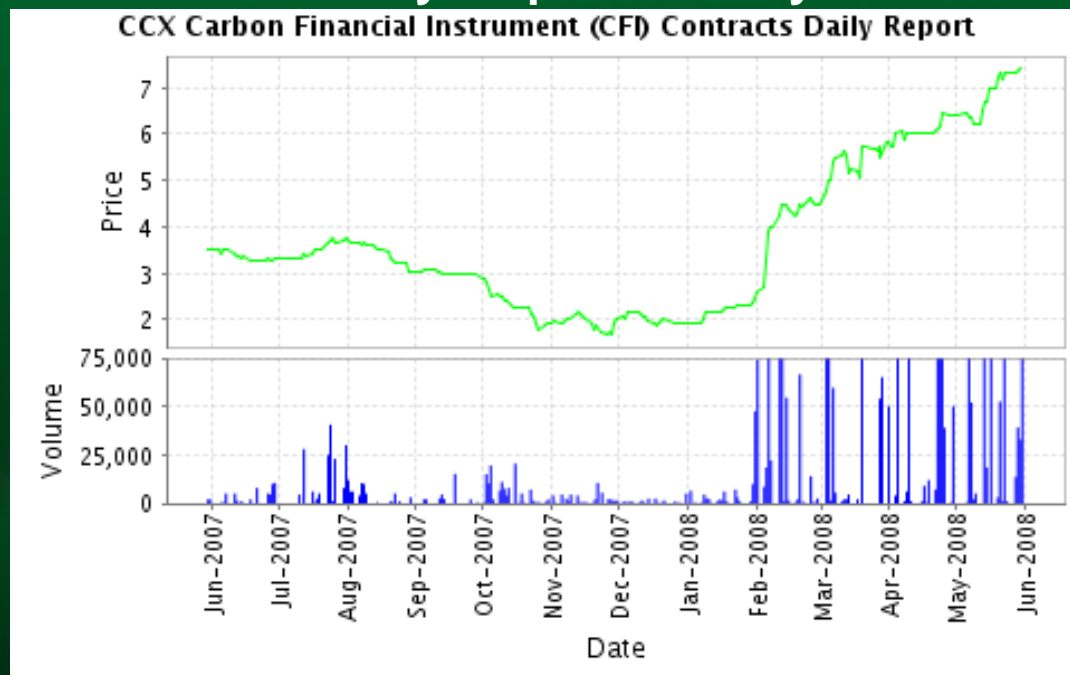


Carbon Trading

Chicago Carbon Exchange (CCX)

<http://www.chicagoclimatex.com>

CCX CFI Vintage 2008 One year price history



Landowners?



What are Forest Projects?

Forestry projects must meet the following specifications to qualify as a forestry offset project.

- Afforestation and forest enrichment projects initiated on or after January 1, 1990 on unforested or degraded forest land may qualify.
- Forest conservation projects may be eligible if they are undertaken in conjunction with afforestation on a contiguous site.
- Demonstration that entity-wide forest holdings are sustainably managed.
- Demonstration of long-term commitment to maintain carbon stocks in forestry.
- Use of approved methods to quantify carbon stocks
- Where required, the carbon stocks must be independently verified by a CCX-approved verifier.

Next Factor

CCX Reforestation Carbon Accumulation Table Dense Planting (>250 stems per acre)

Metric tons CO₂ per acre per year

Years since planting

US Region and Species	0-5	6-10	11-15	16-20
Lake States, white spruce	6.61	4.78	4.66	5.01
Lake States, red pine	2.1	2.45	2.56	4.31

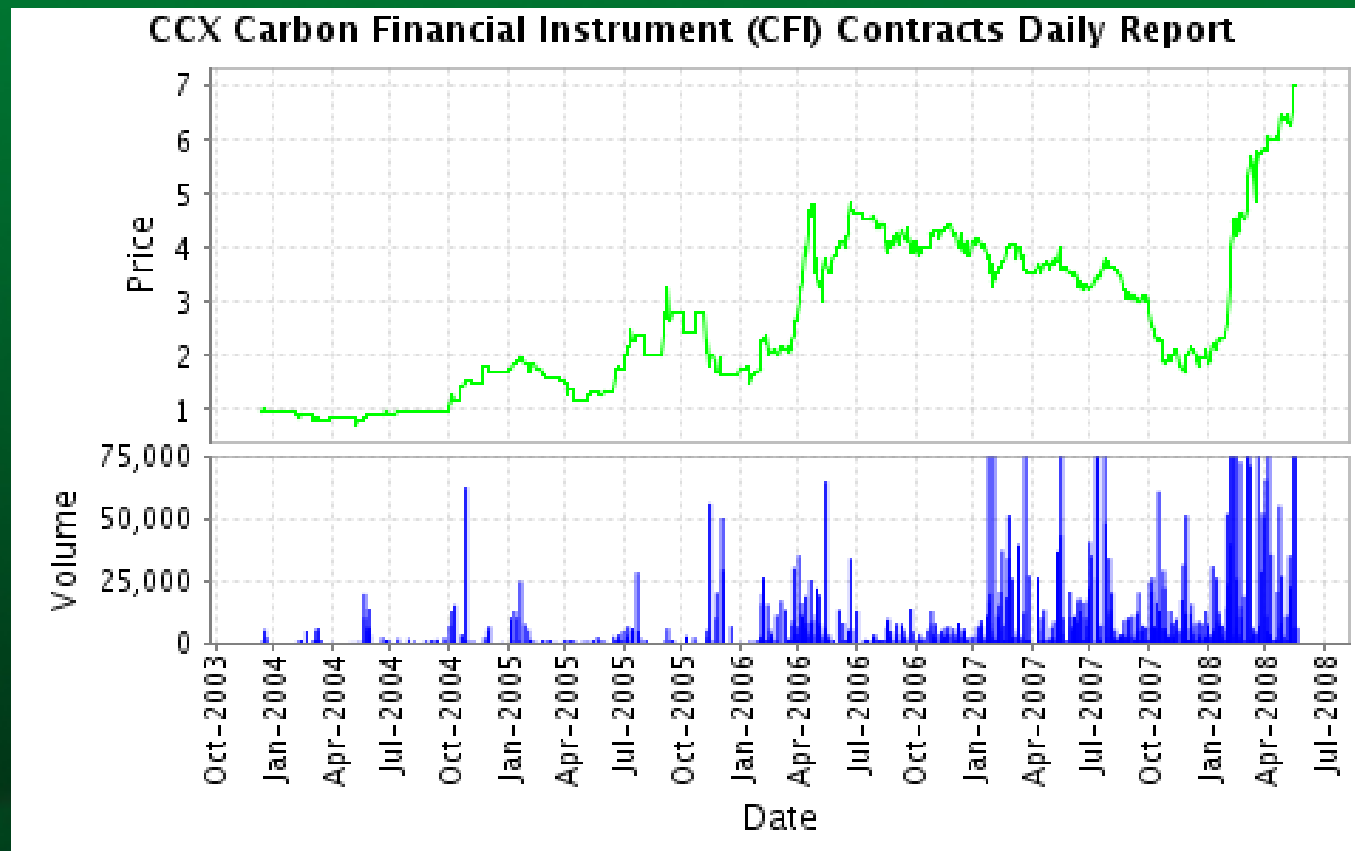
What is the first question...

Is it worth it?

or

How much \$\$\$ are we talking?

Carbon Credit Prices



Example Project

Based on CCX rate table through 2012, the end of the guaranteed contract:

Plant 10 acres of red pine (<250 stems/acre)

1. First calculate how many metric tons of carbon will be sequestered each year:

$$10 \text{ acres} \times 2.10 \text{ mT/acre} = 21 \text{ mT}$$

2. Then calculate how much of that will go directly into the reserve pool:

$$21 \text{ mT} - 20\% (\text{reserve pool tonnage}) = 16.8 \text{ mT/yr}$$

3. Multiply this number by the going rate for carbon credits:

$$\text{Current \$: } 16.8 \text{ mT/yr} \times \$7.30/\text{mT} = \$122.64/\text{yr}$$

$$\text{Average \$: } 16.8 \times 4.10 = \$68.88/\text{yr}$$

Example continued:

4. This is your gross annual income, before CCX and aggregator charges are applied. Proceed to subtract these charges:

$$\text{\$122.64} - 10\% \text{ aggregator fee} = \text{\$110.38/yr}$$

$$\text{\$110.38} - (16.8 \text{ mT} \times \text{\$0.20/mT CCX trading fee}) =$$

$$\text{\$107.02/yr}$$
 This is your net annual income.

5. At the end of your contract you add in your reserve pool credits. The total amount of credits for sale are 37.8 (21 annual tonnage plus 16.8 (4.2x4) reserve pool tonnage).

$$37.8 \text{ mT} = \text{\$240.79 after fees}$$

Show me the money?

6. Total Income for the life of the contract: \$668.07 or \$66.88/acre (using May 28 price of \$7.30/mT)

Using average price of \$4.10, the total income for the life of the contract would be: \$366.49 or \$36.64/acre

This hypothetical income calculation in no way reflects costs that a landowner may face when beginning a sequestration project, nor does it include additional, stackable payments such as CRP that a landowner may receive.

What Next?

- Contact an aggregator
 - Clear title
 - Sustainable management
 - Forest Offset Enrollment Worksheet
 - Carbon Calculation Worksheet
 - Long term commitment
- Submit necessary paperwork
- Receive payments

Carbon Credits and Us

- A good thing, but proceed with caution



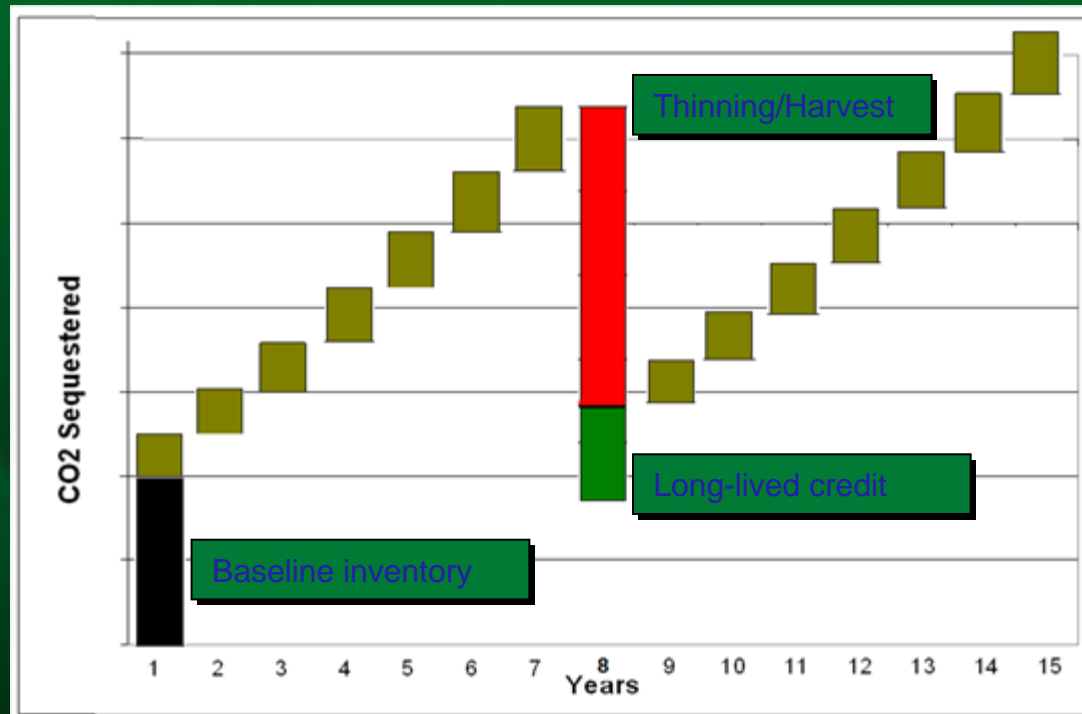
Caution



"It's great! You just tell him how much pollution your company is responsible for and he tells you how many trees you have to plant to atone for it."

MFL – A marriage made in heaven?

- CCX Sustainability Requirement
- Compatible but conflict possible



Payment based on projected net CO2 sequestration

Questions?

Special thanks to:

John DuPlissis - Forestry Outreach Specialist, UW-Stevens Point

Center for Integrated Natural Resources and Agricultural Management's publication "[A Landowner's Guide to Carbon Sequestration Credits](#)" available at:

www.cinram.umn.edu

