

Forest Carbon Sequestration

Opportunities for SE Forests in a Carbon-Constrained World

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Ways to reduce GHG emissions

- Point-source reductions through technology
- Shrink your carbon footprint
- Purchase emissions allowances from another entity
- **Invest in emission offset projects (e.g. carbon sequestration)**

A vertical strip on the left side of the slide shows a forest landscape with tall trees and a blue sky.

Forest C Sequestration In Georgia

- GA timberland offsets ~12.6 million tonnes of CO₂ / yr (FIA)
 - Above ground biomass (excluding foliage) + coarse woody roots
 - Mitigation of about 8% state CO₂ emissions / yr (EPD)
- Nationally, U.S. forests are also a carbon sink
 - Offset 12% of national CO₂ emissions
- Globally, however, deforestation contributes 18% of anthropogenic CO₂ emissions

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State Needs:

- Improve returns to forest landowners
- Maintain productive land base
- Encourage sustainable development
- Encourage private land stewardship

Keep Forests in Forests

Incentives that reflect true economic/ecological/social value...

...Is carbon part of the solution?



Circumstances for Success

- Federal GHG Policy and Protocol that recognizes terrestrial offsets as viable and important
- Adequate carbon “credit” price
 - Low transaction costs
 - Market infrastructure
- Incentives for “new” sinks
- Incentives to **maintain existing** sinks
- Technology Diffusion

Land use offsets in existing markets

- Formal Market Structures:
 - Kyoto: forestry offsets are limited, expensive
 - RGGI: afforestation eligible, but rules not formalized
- Voluntary Markets
 - CCX: forestry and ag. offsets eligible, but ambiguous
- “Over the Counter” markets
 - Forestry offsets represents 36% of trades

BOTTOM LINE: Forestry is implicitly recognized, but specific standards vary widely...uncertainty abounds.

What are Buyers Looking For?

- Is it REAL?
 - Or a product of incomplete accounting?
- Is it ADDITIONAL/SURPLUS?
 - Would it have happened anyway?
- Is it PERMANENT?
 - Germane for terrestrial offsets
- Is it VERIFIABLE?
 - Third party oversight
- Is it ENFORCEABLE?
 - Who's claiming ownership?

It is a Buyer's Market

- For Forestry Offsets, it is more than just the carbon
 - High quality offsets = social, ecological, economic co-benefits of investment.
- Regulatory uncertainty means “quality” drives investment
 - Hence, afforestation is most commonly accepted practice
 - **Additionality** is evident, easily documented
 - **Permanence** means land-use restriction and/or long-term commitments
- What's lacking?
 - Incentives for maintaining existing carbon stocks in working forests

Project Trade-Offs

Methane Destruction
HFC Destruction
N₂O Destruction

Renewable Energy
Energy Efficiency

Soil Carbon
Reforestation
Forest Protection

←

GHG
Reduction
Additionality &
Verifiability

→

Other social,
ecological,
economic benefits



Georgia's Carbon Registry

- Created through state legislation in 2004 (funding in FY 2007)
- Provides official mechanism for documentation and tracking carbon stocks in forest offset projects.
- Protocols designed by GFC and UGA
- Registry data administered by GSCCCA


GFC Carbon Sequestration Registry Home - Microsoft Internet Explorer

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Address <http://www.gacarbon.org/GFCCSHome.aspx?AspxAutoDetectCookieSupport=1> Go Links

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Georgia Forestry
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Protecting and Conserving Georgia's Forests

Georgia Carbon Sequestration Registry

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About Us

The Georgia Carbon Sequestration Registry is a non-profit program established by [Georgia Senate Bill 356](#) in 2004 and is administered by the Georgia Forestry Commission (GFC) and the Georgia Superior Clerks Cooperative Authority (GSCCCA). The purpose of the Registry is to provide forest landowners, municipalities, and public and private entities with an official mechanism for the development, documentation, and reporting of carbon sequestration projects undertaken in Georgia. Participation in the Registry is completely voluntary.


With the assistance the University of Georgia Warnell School of Forestry and Natural Resources, along with input from public and private stakeholders, the Registry has developed a protocol for estimating and reporting carbon stocks in forests. Similar protocols will be developed for conservation tillage and urban forestry in the future.

If you are interested in registering a project, please review all of the [informational materials](#) and browse the [links](#) found on this website. Feel free to [contact us](#) with any questions or comments.

[Frequently Asked Questions](#) about the Registry.

Some of Our Specific Responsibilities:

- Enable the voluntary reporting of carbon sequestration projects undertaken in the state of Georgia in a transparent and uniform format.
- Facilitate the emerging market for carbon offsets generated from forestry and agricultural practices in the Southeast.
- Promote all environmental markets that recognize the important ecological, social, and economic values of forests and farmland and that fairly compensate landowners for the services their lands provide for all of us.
- Generate new economic incentives for Georgia's forest owners and farmers.
- Maintain an official record of carbon storage and carbon accumulation for all registered projects.



REGISTRY
HOME

Internet

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Project Eligibility Standards

- Land in Georgia
- Forest carbon “rights”
- Native Tree Species
- Sustainable Management
 - Forest certification, stewardship plan, etc
- Restricted vs. Unrestricted Projects

Project Types:



- Afforestation
 - Tree planting on non-forest land
 - Est. 1990 or later
 - Dedicate land to forest uses
 - CRP is eligible

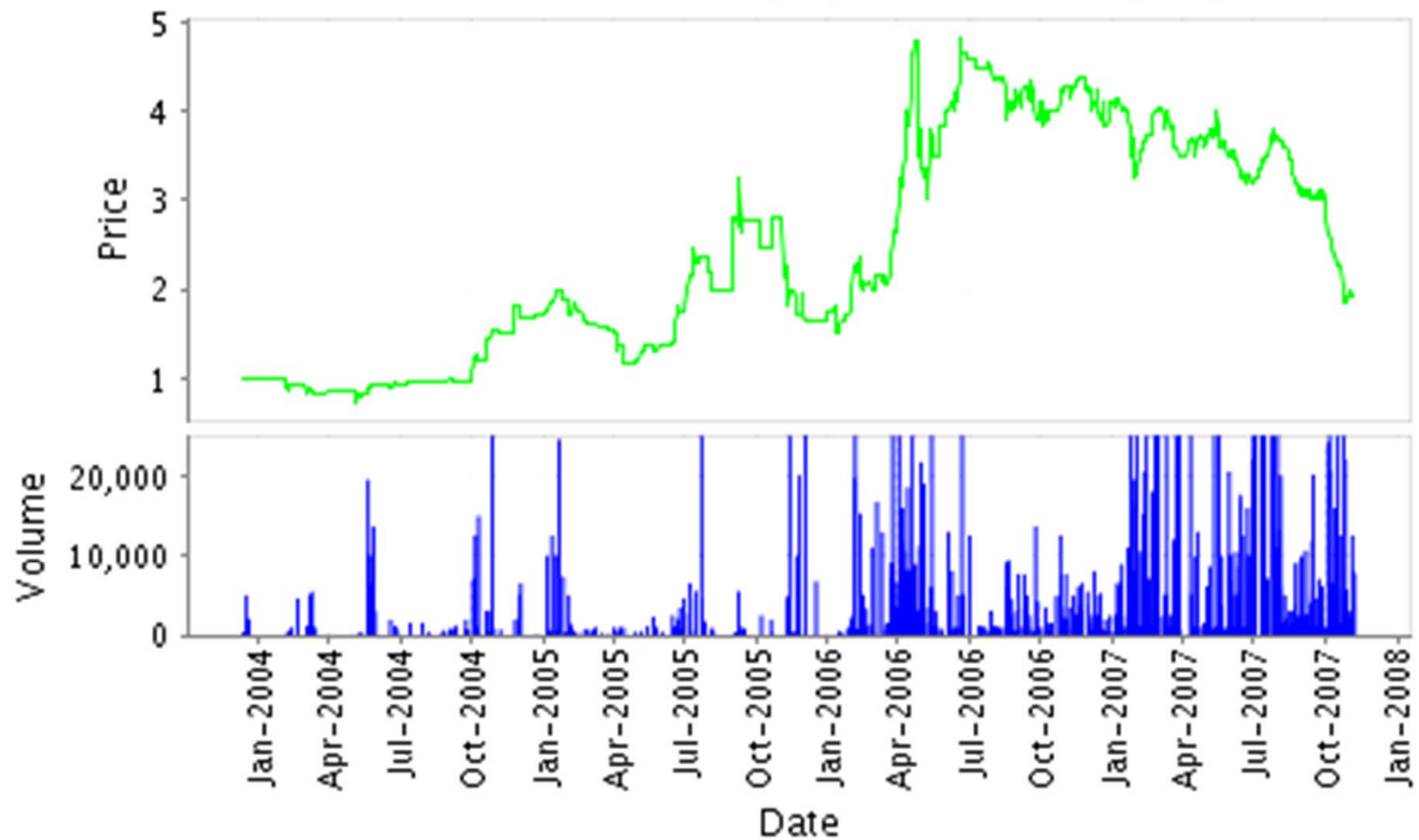


- Forest Management
 - Forest enrichment/restoration
 - Forest Conservation
 - Management that increases carbon storage beyond current practices

CCX Example

- Assumptions:
 - CP 36 longleaf pine planting
 - Credits are sold annually—no banking
 - First credits are sold at age = 1 yr
 - CO₂ price = \$2 per tonne
 - 10-year contract for offset generation

CCX Carbon Financial Instrument (CFI) Contracts Daily Report



Source: www.thechicagoclimateexchange.com

Annual Participation Costs

- For Example:
 - 1yr old LLP sequestered 1.41 tonnes CO₂ per acre
 - 1.41 tonnes x \$2/tonne = \$2.80 per acre

Aggregator Fee: 10%.....	\$0.28 per acre
Associate Aggregator Fee: 10%.....	\$0.28 per acre
Annual Verification Fee: 3%.....	\$0.08 per acre
CCX Trading Fee: \$00.17 per tonne (8.5% @ \$2/t).....	\$0.24 per acre

Per Acre Total: 88 cents

Reserved Credits

- Not all credits generated are eligible for sale
- 20% must be set aside in a 'reserve pool'
 - Covers losses in carbon storage: fire, pests, harvest, etc.
- Pool is returned to landowner for sale at the end of the contract period.

	a	b	c	d
	Year	Age of stand	Tonnes per acre	Value per ac (\$2 per credit)
1	2008	1	1.4	\$2.80
2	2009	2	1.4	\$2.80
3	2010	3	1.4	\$2.80
4	2011	4	1.4	\$2.80
5	2012	5	1.4	\$2.80
6	2013	6	1.51	\$3.02
7	2014	7	1.51	\$3.02
8	2015	8	1.51	\$3.02
9	2016	9	1.51	\$3.02
10	2017	10	1.51	\$3.02
11	Total Gross Value		14.55	\$29.10
12	Less 20% for CO2 Reserve Pool			\$5.82
13	Less 10% Aggregator Fee			\$2.91
14	Less 10% Assoc. Aggregator Fee			\$2.91
15	Less 3% Verification Fee			\$0.87
16	Less CCX Exchange Fee (17¢ a ton)			\$2.47
17	Per acre net amount to landowner prior to Dec 31 2017			\$14.12
18	Per acre net amount to landowner after Jan 1 2017			
19	Total Per acre amount to the landowner			\$19.94

NPV (7%) = \$15.81/ac

Final Thoughts

- GHG regulation offers new opportunities of forest landowners
- Not all forests are equal in the eyes of the market
 - Carbon sequestration will need to fit in with overall management objectives for site.
 - Opportunity costs may be too high for many
 - Registry reflects variance in demand
- Carbon value is separate from other potential values
 - Nutrient credits, wetland mitigation, etc.
- GFC is taking proactive approach to position our landowners and managers with new opportunities

Thank You

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Registry Website:

www.gacarbon.org

