INDIANA WATER SUMMIT

Carbon Credit Markets and their role in Water Management

August 10th, 2021

delta institute

MISSION AND INITIATIVES

Delta Institute collaborates with communities throughout the Midwest to solve complex environmental challenges.

We envision a region in which all communities and landscapes thrive through an integrated approach to environmental, economic, and social challenges.

RESILIENT AGRICULTURE	NATURE-BASED CLIMATE SOLUTION	SUSTAINABILITY AND SUPPORT SERVICES

QUICK MARKET INTRO

delta institute

HOW DOES IT WORK?

- Carbon markets allow for a metric ton of CO2 to be listed and traded
  - Same for a water market but the tradeable unit is different
- Aligns buyers who want to reduce their GHG impacts with sellers who are generating those reductions
- Many types of activities can qualify that either store carbon for a long time or reduce carbon emissions

- Major roles:
  - Project owner
  - Project developer
  - Aggregator
  - Registry/Standard
  - Verifier
  - Buyers
  - Regulators

CARBON MARKETS AND WATER

delta institute

WATER IMPACTS

- When implementing practices that sequester carbon in the soil or in a forest, or reduce GHG emission there are direct and indirect water benefits:
  - Improved soil health decreases nutrient runoff, keeps in field (less needed, so cost savings potential)
  - Decreases storm water volumes/flashiness → flooding
  - Allows for aquifer recharge in certain areas
  - Source water protection

THE CO-BENEFIT EQUATION

- Many carbon offset project types directly impact water quality and quantity.
  - Soil Carbon Sequestration/Soil Enrichment/Soil Health
  - Nutrient Management
  - Afforestation/Reforestation
  - Improved Forestry Management
  - Other specialized protocols as well, such as rice management and coastal wetlands
- Many also impact other community and landscape priorities.
  - Increase microbiome populations in the root zone
  - Increased habitat and biodiversity
  - Access to green/natural areas
  - Reducing impacts from weather events, increasing overall resilience
  - Reducing impact of urban heat islands
  - Less hard infrastructure costs

DELTA'S EXPERIENCE AND ROLES IN CARBON MARKETS

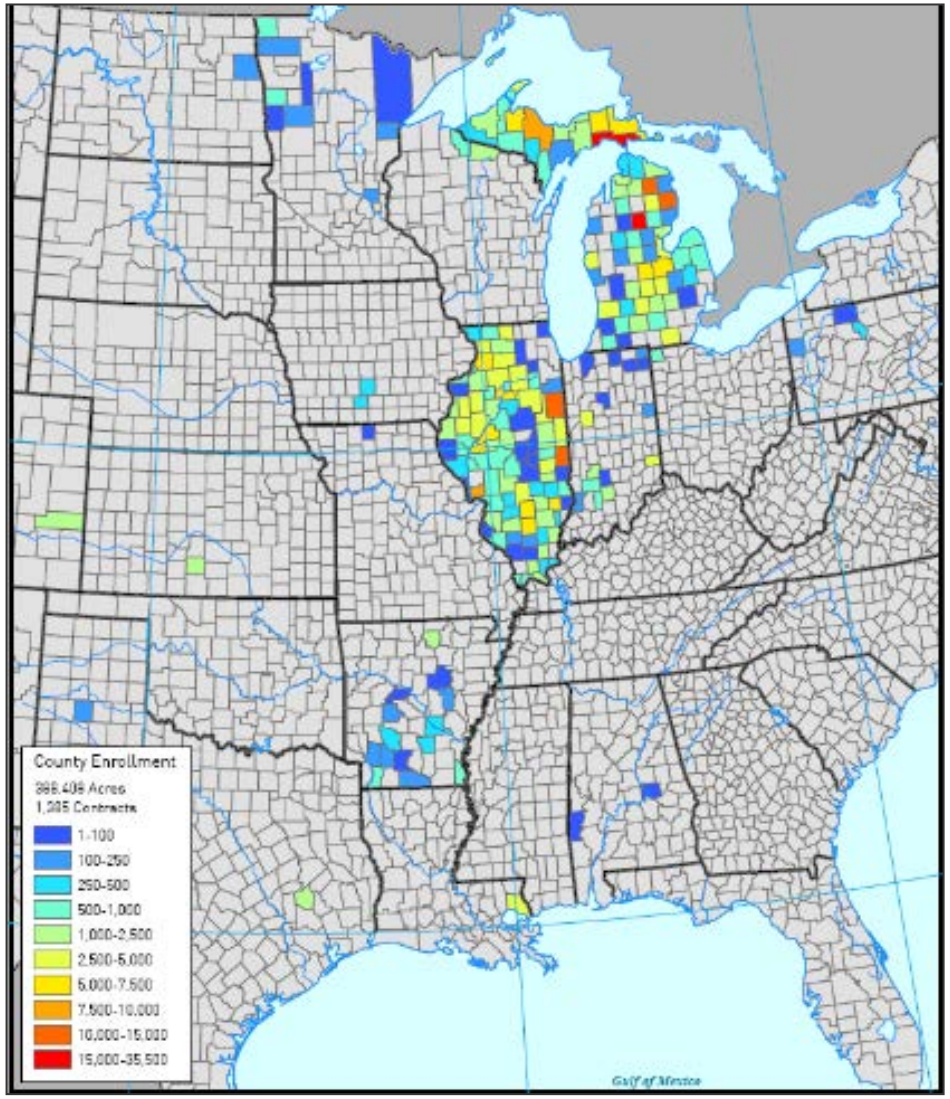
delta institute

OUR EXPERIENCE

- 17 years of experience working with farmers and agricultural stakeholders
- Many climate and watershed projects
  - Chicago Climate Exchange soil and forest carbon aggregation program
  - Bio-based product substitution feasibility study
  - Multiple watershed sediment reduction programs
  - Milwaukee River (WI) watershed phosphorus “pay-for-performance” project and Ohio River Valley, tri-state water quality trading and carbon credit enhancement project
  - Nitrogen Credit Program
  - Working Group Member for ACR Soil Enrichment Protocol
  - Working with USDA, nonprofit partners, farmers, and private sector companies on carbon market roles and accessibility

delta institute

ICCI, MCCI, AND THE DELTA CARBON PROGRAM



- From 2005-2011, traded over 650,000 tons CO_2e through the Chicago Climate Exchange
- Started in Illinois, Expanded to Michigan, and then beyond
- Delivered $2.4 million to farmers and forest owners
  - 1,385 contracts
  - 392,094 acres of land
  - 18 states
- Delta sold to CCX members via the trading platform, bilateral trades, as well as to other companies and individuals who wanted to offset their carbon footprints.

delta institute

NITROGEN CREDIT PROGRAM

- In 2011, Delta was awarded USDA Conservation Innovation Grant, *Bringing Greenhouse Gas Benefits to Market*
  - Support implementation of nutrient management practices, reduce emissions of nitrous oxide (potent GHG)
  - Utilize new methodology that was approved on the American Carbon Registry
  - Quantify GHG emission reductions using MSU/EPRI methodology
  - Bring GHG credits to market

NRCS Natural Resources Conservation Service

MICHIGAN STATE UNIVERSITY

EPRI ELECTRIC POWER RESEARCH INSTITUTE

delta institute

WHAT WE'VE LEARNED

- Carbon markets continue to have potential for valuing climate-friendly ag and forestry practices and transforming the landscape while helping the bottom line.
- Consistency and reliability is critical for engaging farmers and foresters.
- New technologies are bringing down quantification costs, which can be a significant barrier.
- Bang for the buck needs to be there! $/acre is an important metric as is cost/acre.
- Permanence is a tricky aspect for carbon sequestration methodologies. Time periods need to align with farmer and forester needs.

IN ADDITION TO CARBON MARKETS, THERE'S WATER QUALITY AND WATER QUANTITY MARKETS

delta institute

WATER MARKETS

- Water Quality
  - Nutrient Reduction
    - Wisconsin Phosphorus Rule
  - Source Water Protection
  - Temperature
    - Willamette Partnership
- Water Quantity
  - Stormwater Reduction
    - DC Water and Philadephia
    - StormStore pilot – Chicago region
  - Source Water Protection
  - Groundwater Protection

THERE IS A LOT HAPPENING AT THE MOMENT

delta institute

A QUICK SUMMATION OF THE MARKETPLACE

- There is a lot happening right now both in compliance and voluntary markets.
- Ag soil health is a driver by value chains/ESG priorities.
- New protocols for agriculture and forestry coming online like ACR SEP.
- Private companies and other stakeholders are developing their own quantification and crediting platforms.
- Accessibility to the market is increasing, but so is fragmentation.
- New innovations on crediting periods such as ton-year accounting to help deal with permanence.
- Credit prices and transaction costs are highly variable.
- Unclear on what impact that federal policies will have on market opportunities and dynamics. But there's support for climate.

LOTS OF ACTIVITY

- Private companies like Indigo Ag, Corteva, Nori, Truterra, others are developing programs for agriculture
- Large and small-scale forestry projects continue to be developed
  - State of Michigan
- Nonprofits and other collaborations are also developing projects and methodologies
  - Ecosystem Services Marketplace Consortium
- USDA is evaluating its role around climate change and carbon markets
  - Green Bank concept
- Many corporations are investing in carbon purchases, volume of buying is increasing
- Urban projects also being developed for carbon
  - City Forest Credits

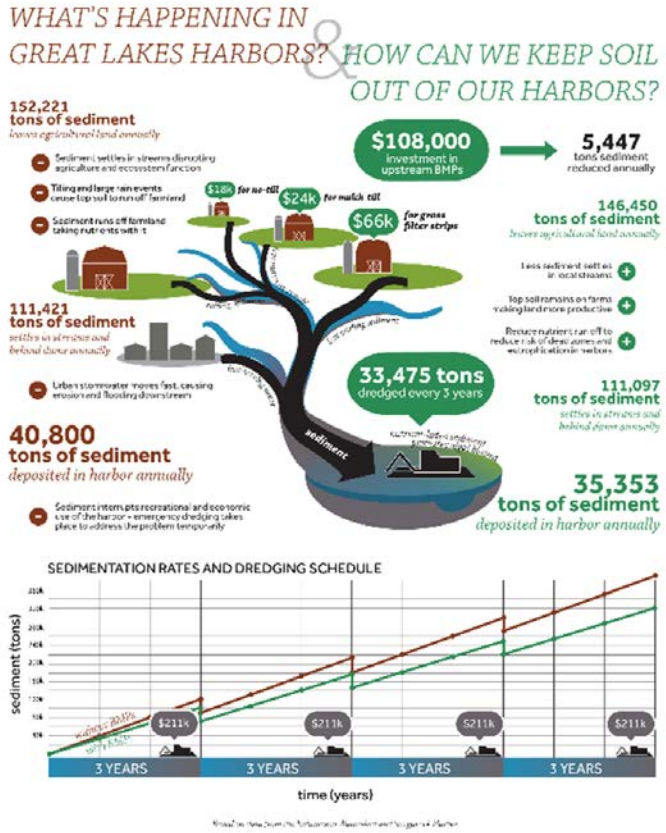
QUESTIONS WE ASK WHEN THINKING ABOUT CREDITS

- What is the credit for? (practices)
- How is the credit quantified? (methodology)
- Is it through an existing compliance system or voluntary registry? (registration, verification)
- How is permanence, additionality, and leakage handled? (credit quality, perception)
- What's the cost of generating the credit? (how much will someone get paid)
- Have buyers been identified, what is the sales strategy? (are their buyers and is there an established sales price)
- Can this be accessed by farmers and foresters at multiple scales? (who can benefit/who is excluded)

STAY CONNECTED WITH US

Social Media

- Twitter: @DeltaGreatLakes
- Instagram: deltainstitute
- Facebook: @DeltaGreatLakes
- YouTube: deltainstitute
- LinkedIn: /delta-institute



Website

- Bookmark us: delta-institute.org
- Lots of tools/publications: delta-institute.org/publication
- Keep posted on our events: delta-institute.org/events
- Subscribe to our newsletter: delta-institute.org/get-involved
- Contact us: delta-institute.org/contact

delta institute


THANK YOU
delta institute