



Precision Conservation Management

Making Sense of it All: What you need to know about carbon markets and Federal climate-smart funding

Megan Miller

PCM Grants and Programs Manager

August 13, 2024

How can PCM help you?



1. Enrolling in PCM can provide you a better understanding of farm financials and a pathway to profitable conservation farming. This service is free to farmers in PCM regions.
2. After we benchmark your operation, we can provide you with conservation funding from our partners. We can even provide incentives if you have a history of cover cropping and no-tilling.
3. PCM Specialists can help you to understand your conservation program options. Our staff has expertise in most IL, KY, and NE conservation programs.

Whether you receive funding through PCM or someone else, our goal is to get conservation on the ground.

Contact a PCM Specialist Today:

<https://www.precisionconservation.org/about-us/#staff-divider>

What is PCM?



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- Regional data compiled by FBFM and Farmdoc to benchmark your farm's financials
- Enrollment is free and PCM farmers receive \$750 for their first two years of enrollment.



Participation Stats



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PCM – Growing Stronger Every Day

 496

FARMERS

 6,624

FIELDS

 499k (over 200k ha)

ACRES

 30+

PARTNERS

www.precisionconservation.org



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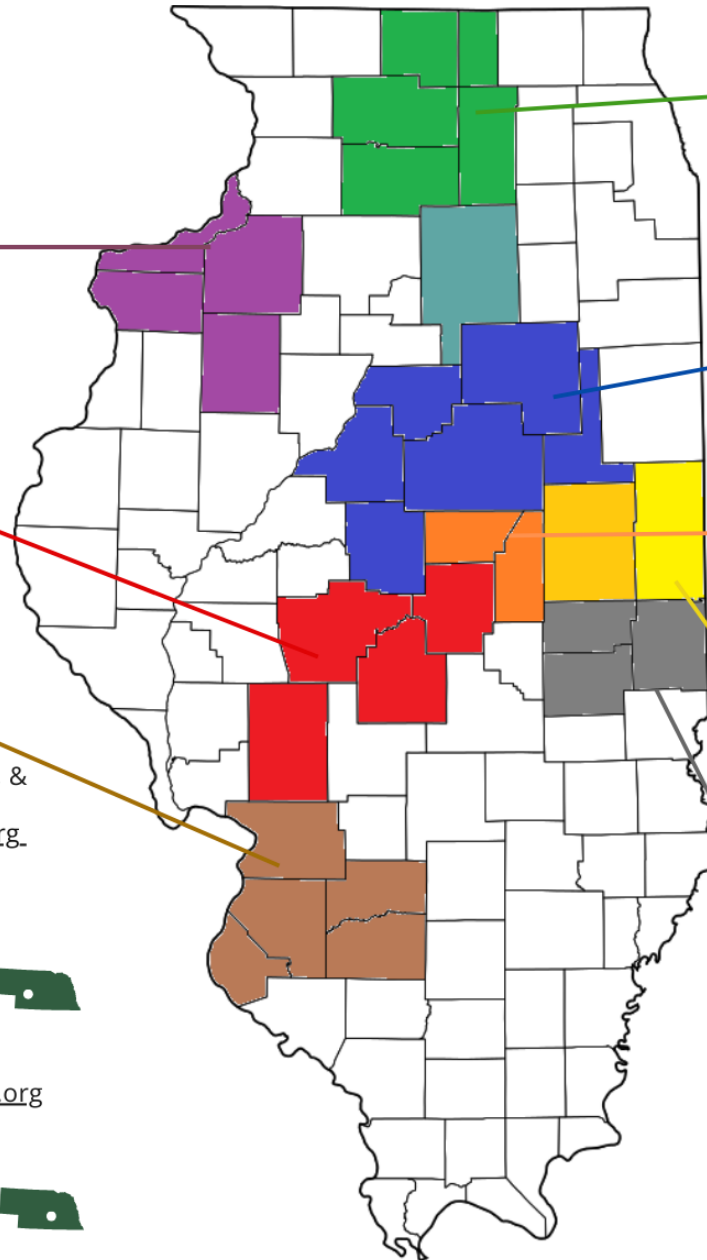
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PCM Incentives – Pepsico



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- Pepsico Inset Market Program 1-year contract
- Funds available to farmers with previous cover crop and no-till experience.
- Available in PCM Regions
- Work with your PCM specialist to determine if you can stack other federal or state programs by practice.
- × **Cannot be stacked with other markets or carbon intensity premiums,**

Cover Crops	No-Till/Strip Till	MRTN/10% N Reduction
\$15/acre 1 st and 2 nd year	\$10/acre 1 st and 2 nd year	\$10/acre 1 st year
\$10/acre 3 rd year and beyond	\$5/acre 3 rd year and beyond	



PEPSICO

PCM Incentives – Farmers for Soil Health



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- Statewide: IL, KY, NE
- 3-year contract
- NEW cover crop acres
 - \$25/a Year 1
 - \$15/a Year 2
 - \$10/a Year 3
 - Can enroll up to 1000 acres/farmer
 - Look back period for eligibility is 1 year
(i.e. if field was not cover cropped previous year, it is eligible as a "new" field/acre)



United States
Department of
Agriculture

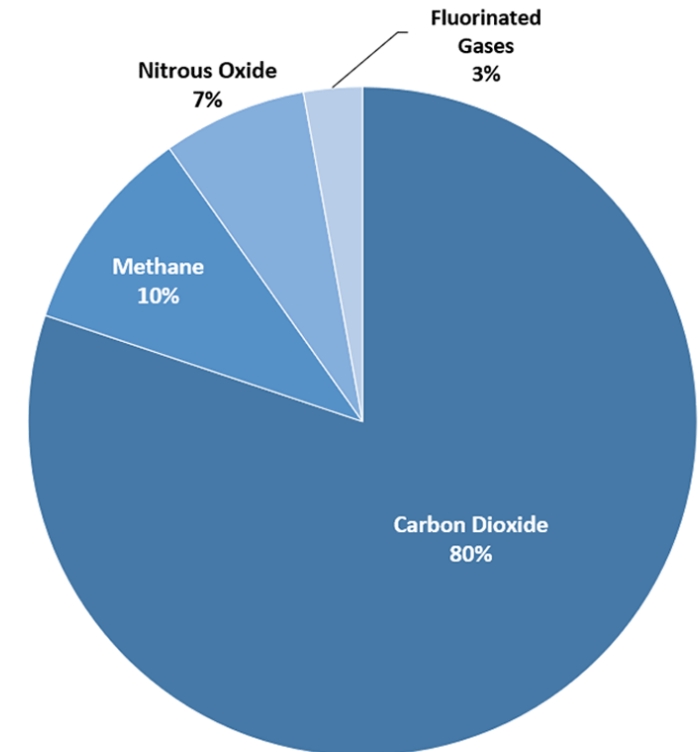
Why carbon?



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Many companies and countries have committed to **carbon neutrality** and even **carbon negativity** within the next decades.

Overview of U.S. Greenhouse Gas Emissions in 2019



U.S. Environmental Protection Agency (2021). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019

No-Till & Cover Cropping

Your **crops** are tools to that put carbon dioxide in the ground
Your **soil** is responsible for keeping the carbon dioxide out of the atmosphere



Cover crops allow the soil to continually receive CO₂ from the atmosphere



No-till prevents carbon dioxide from leaving the soil



Cover Crops and No-Till



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Cover cropping and no-tilling can sequester an additional ~1.5 tonnes CO₂/acre

Table 1. Annual GHG emission reduction potential of converting to no-till (NT) and planting cover crops (CC) as estimated per individual practice at the national and state levels via COMET-Planner¹. All values are reported in metric tonnes of carbon dioxide equivalents per acre per year (CO₂e/ac-yr) with averages in parentheses.

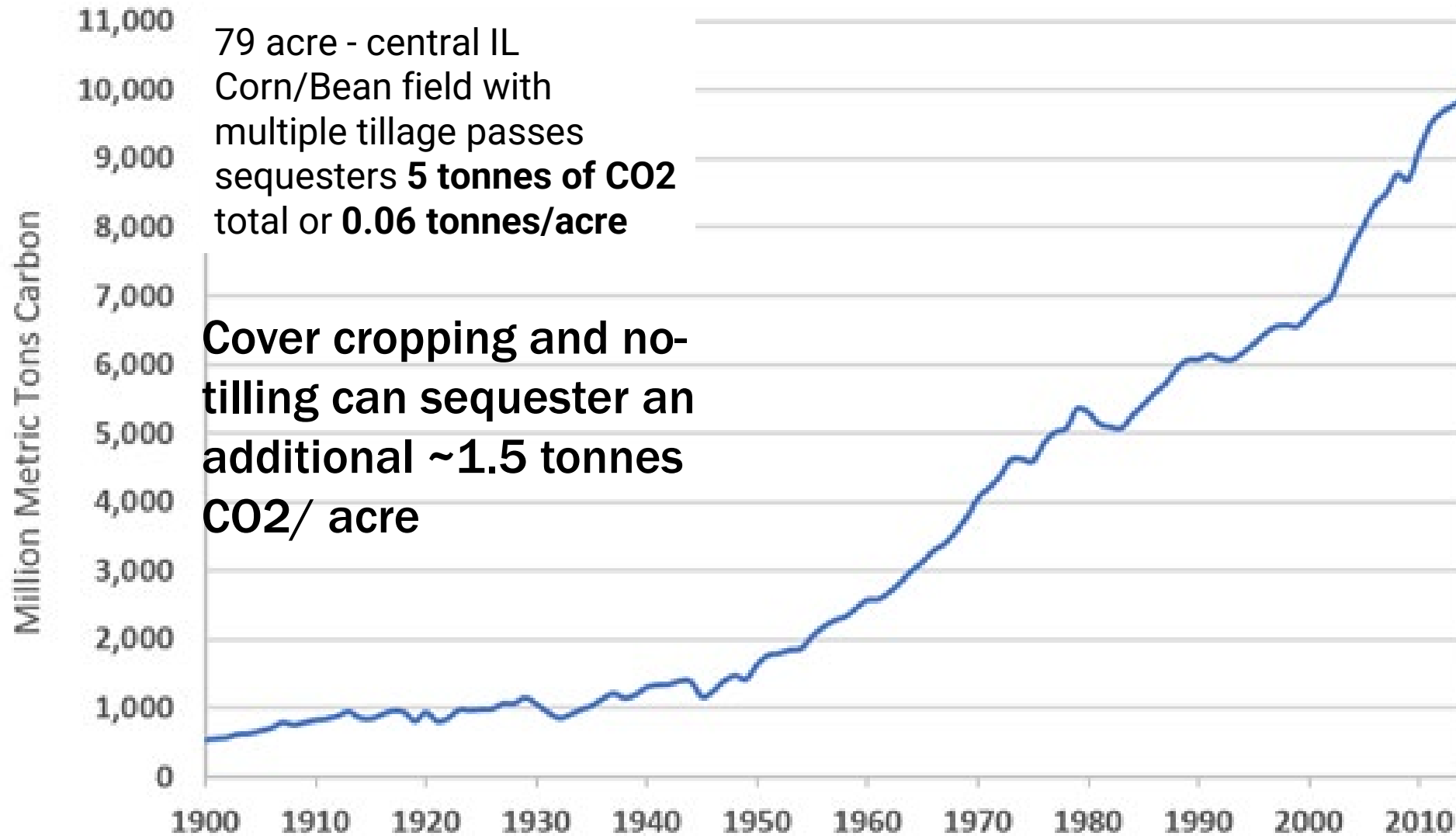
PRACTICE	NATIONAL RANGE (AVG.)	ILLINOIS RANGE (AVG.)	
		Intensive till to NT 0.57 – 0.80 (0.72)	Reduced till to NT 0.46 – 0.64 (0.57)
No-till (NT)	0.03 – 1.07 (0.49)		
Cover Crops (CC)	-0.03 – 1.50 (0.37)	Legume cover crop 0.23 – 1.26 (0.68)	Non-legume cover crop 0.16 – 0.90 (0.50)

¹Swan et al., 2019, available at http://comet-planner.nrel.colostate.edu/COMET-Planner_Report_Final.pdf and <http://comet-planner.com/>, ranges provided for general reference and should not be considered additive or field-specific.



ILLINOIS
SUSTAINABLE
AG PARTNERSHIP

Global Carbon Emissions from Fossil Fuels, 1900-2014



Common Practices for Market Enrollment



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Fertilizer	Cover Crops	Tillage	Rotation
Application Timing	Grass	Change in type	Added crops
Reduced Rate	Legume	Change in frequency	Reduced fallow periods
Use of inhibitors	Interseed	No-Till	Added perennials
Use of organic fertilizer or compost	Perennial		
	Cover crop termination (planting green, burn down, mechanical)		

Benefits of Soil Health

- Soil Temperature and Moisture Regulation
- Reduced Soil Loss from Wind & Water
- Winter Annual & Early Season Weed Suppression
- Improved Soil Structure
- Increased Diversity of Soil Biological Communities
- Nutrient Capture & Availability



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The key to successful conservation program enrollment is understanding the **funding source**.

1. Private
2. Public
3. Hybrid

Types of Funding



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Natural Resources Conservation Service

Government:
Federal & State



PEPSICO



CPGs or other industry

Private:
Carbon Market & Carbon Intensity

Ethanol Producers



Vs





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The key to successful conservation program enrollment is understanding the **funding source**.

Government Funding

Federal & State Funding: Farm Bill/IRA



- **NRCS Programs (Farm-Bill and/or IRA)**
 - **EQIP**
 - Statewide
 - Conservation on a portion of your farm
 - Administered by NRCS – visit your local NRCS office
 - **RCPP**
 - Regional
 - Conservation on a portion of your farm
 - Administered by NRCS and/or lead partner – visit your local NRCS office
 - **CSP**
 - Statewide
 - Conservation on your whole farmer
 - Administered by NRCS – visit your local NRCS office
- **State Program IDOA**
 - **Fall Covers for Spring Savings**
 - Statewide
 - Administered by IDOA
 - \$5.00 per acre cover crop payment



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The key to successful conservation program enrollment is understanding the **funding source**.

Private Funding



Carbon Credit or Carbon Intensity



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- **Carbon Credit - Inset**

- Accounts for GHG reductions as grain moves through the value chain to the end user. Provides farmers with credit for a sustainably produced crop
- Payment: credit in form MT CO₂e-1/acre or payment per acre.
- Payment Provider Example: Pepsico through PCM

- **Carbon Credit - Offset**

- Pays farmers to reduce GHG emissions on behalf of a company outside of agriculture
Payment: credit in form of MT CO₂e-1/acre
- Payment Provider Example: Microsoft through Indigo

- **Carbon Intensity**

- a type of inset market that is most often associated with fuel production.
- 45z/40b payments
- Payment: a premium per bushel of grain
- Payment Provider Example: Ethanol Producer



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The key to successful conservation program enrollment is understanding the **funding source**.

Hybrid Funding



Federal & State Funding: Partnerships for Climate- Smart Commodities



- Partnerships for Climate-Smart Commodity Funding
 - Combines **federal** (USDA) and **private** (often CPG or grain processor) funding to incentivize climate-smart practice adoption
 - Over 25+ programs in Illinois





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Program Stacking

Your PCM Specialist can work with you to stack federal and carbon market or carbon intensity programs.

Conservation Program Stacking Rules



- If your funding source is federal or state, you **cannot** be paid twice for the same practice on the same acre. You are contracted **by practice**.
- You **cannot** sell a carbon credit or receive a carbon intensity premium twice from the same acre, no matter the practice.
- You cannot be enrolled in two **Partnerships for Climate-Smart Commodities Programs** at the same time.

Pre-Enrollment Questions



1. Does this program pay only for new practices? Can you enroll if you have a history with a conservation practice?
2. What is the contract length?
3. What is the burden on your time as a farmer?
4. What is the payment structure?
5. What is the funding source?
6. What data do I need & how will it be used?

Pre-Enrollment Questions



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- 1. Does this program pay only for new practices? Can you enroll if you have a history with a conservation practice?*

Additionality:

Greenhouse gas (GHG) reductions are additional if they would not have occurred in absence of a market for credits. If the reductions would have happened anyway – without any opportunity for farmers to sell carbon offset credits – then they are not additional.

Credit buyers are paying for a ton of sequestered carbon that would not have been sequestered if they had not paid for it.

You can typically make a small change and still enroll

Pre-Enrollment Questions



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- Does this program pay only for new practices? Can you enroll if you have a history with a conservation practice?*

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Pre-Enrollment Questions



2. *What is the contract length?*

- **Permanence:** Aggregators ensure that carbon will be sequestered for ~100 years between all the farms in their program.
- Carbon aggregators put many (entire countries' worth) of farms in one project to ensure permanence.
- Keep in mind this is a rapidly changing landscape
- Inset programs tend to have shorter contracts.
 - PCM's is only 1 year

Pre-Enrollment Questions



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3. *What time burden on the farmer?*

- Data entry
 - Verification
 - Marketing of credits
-
- **Opt for a market that does all of this for you**



4. What is the payment structure?

Payment Types

- Pay for practice – set price per acre
- Pay for outcomes – modeled outcome - (tonnes of CO₂e/acre)
- Carbon Intensity Score – modeled intensity score – premium on bushels

Pre-Enrollment Questions



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5. What is the funding source? Who is the funding source?

- Federal
- State
- Private
 - Inset
 - Offset
 - Carbon Intensity
- Hybrid



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Pre-Enrollment Questions



5. What data do you need and how will it be used?

- Who owns the data and how will they be using your data?
- What data if any is shared with USDA?
- Can your data be sold to any other entity?

How to prepare for enrollment?

- 1) Understand your conservation goals** – carbon markets may not be the best financial mechanism to help you achieve your goal
- 2) Its probably too early to enroll the whole farm** – start with a few fields at a time
- 3) Be prepared with good conservation agronomy** – find a conservation agronomist to help you with your transition into conservation agriculture
- 4) Get your data ready** - records and data are the key to receiving the highest dollar for your work - visit
- 5) Review your options** – review the different market options- visit <https://ilsustainableag.org/programs/ecomarkets/> or <https://ilsustainableag.org/findtool/>

Pay Attention To:

- 1) **Contract length v land rental agreements** – Will you be farming that field for the length of your contract?
- 2) **Funding type**– inset, offset, ecosystem service, federal conservation program
- 3) **Contract fine print** – understand the full terms of your agreement
- 4) **Data usage** – how will the carbon market use your data?
- 5) **Verification methods** - Receipt audits, field visits, modeling, and satellites are common
- 6) **Program Exclusion** - whether enrollment excludes the grower from participating in other markets or government programs
- 7) **Cost-share programs** – many non-governmental cost-share programs are now associated with a carbon asset
- 8) **Practice standards**– If enrolling in a federally funded program (e.g. Climate-Smart or EQIP) don't assume they all have the same planting standards and program requirements



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