



Restoring Soil Function on Illinois' ag lands

SOIL HEALTH:

*The continued capacity of a soil to function as a vital, **living ecosystem** that sustains plants, animals, and humans.*

- Nutrient cycling
- Water (infiltration & availability)
- Filtering and Buffering
- Physical Stability and Support
- Habitat for Biodiversity (90% is mediated by soil microbes)

Size OF THE PRIZE

**25
million**

metric tons of
greenhouse gas
emissions mitigated



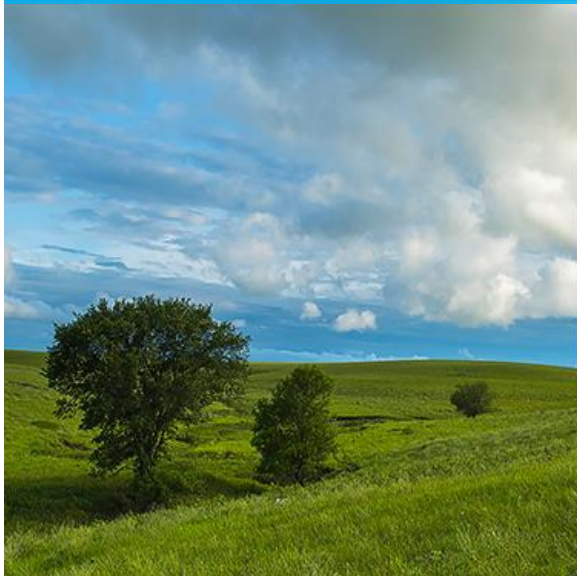
**116
million**

metric tons
of soil erosion
eliminated



**344
million**

pounds of nutrient
loss to the environment
reduced

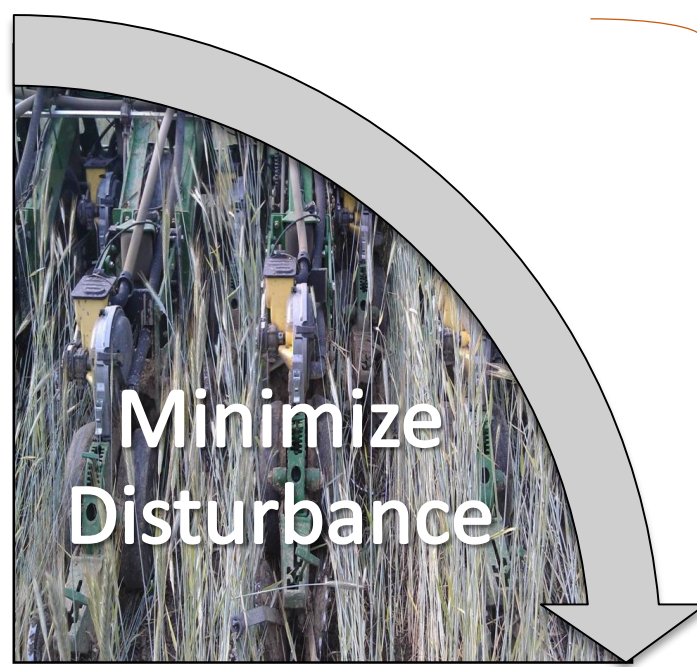
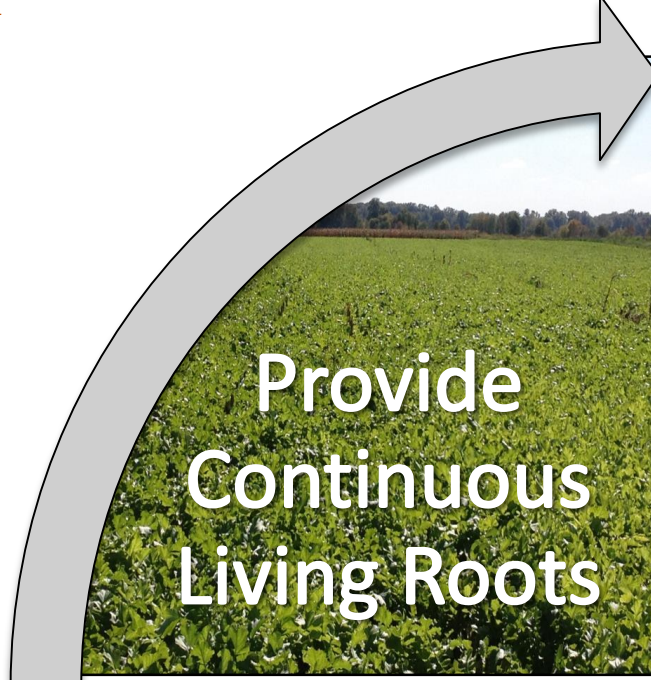


**3.6
million**

acre-feet of available
water capacity in
cropland soils

Soil Health Planning Principles

Feed



Protect

Principles → Practices

Quality No-Till/Strip-till



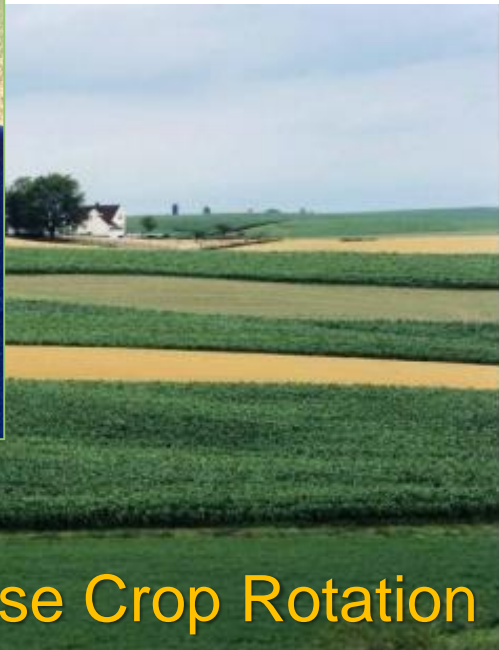
Adapted Nutrient Management



Prescribed Cover Crops



New Technology and Integrated Weed & Pest Management



Diverse Crop Rotation

Quality No-Till / Strip Till



Cover Crop Chart

Cover Crops

- Species Selection
- Seeding
- Termination

GROWTH CYCLE
A = Annual
B = Biennial
P = Perennial

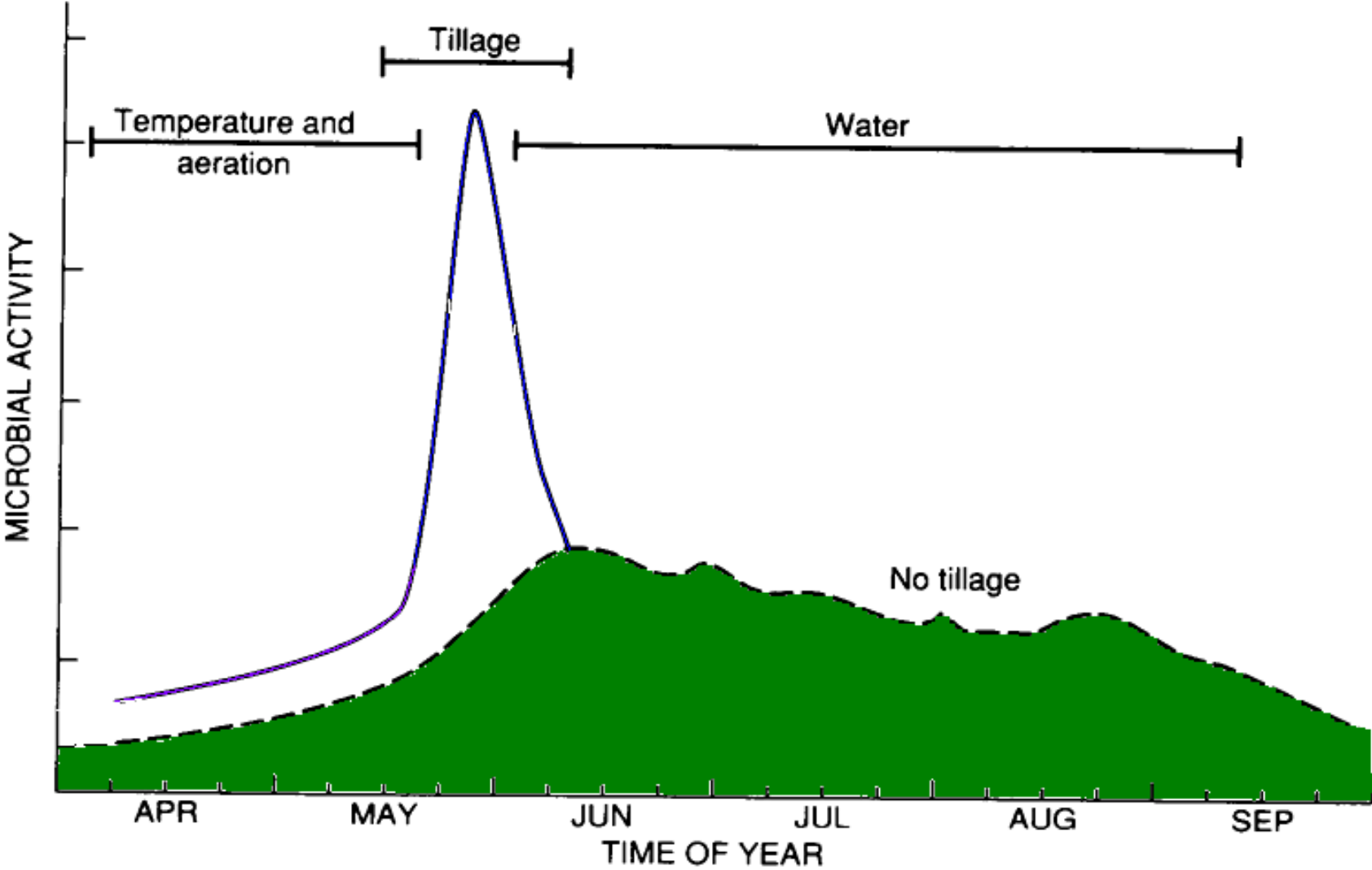
PLANT ARCHITECTURE
γ = Upright
* = Upright-Spreading
≡ = Prostrate

RELATIVE WATER USE
☾ = Low
💧 = Medium
💧💧 = High

COOL										WARM									
-- GRASS --			BROADLEAF						-- GRASS --										
										LEGUME									
A	BARLEY									A	AMARANTH	A	FOXTAIL MILLET						
A	OAT	A/B	CANOLA	A/B	CAMELINA					A	BUCKWHEAT	A	PEARL MILLET						
A	WHEAT	A/P	MUSTARD	A	PHACELIA	A	FIELD PEA	A	BERSEEM CLOVER	A/B	VETCH	A	COWPEA	A	CLUSTER BEAN	A	QUINOA	A	PROSO MILLET
A	CEREAL RYE	A	RADISH	A	FLAX	A	LENTIL	A	CRIMSON CLOVER	P	BIRDSFOOT TREFOIL	A/P	FENUGREEK	A	SUNNHEMP	P	CHICORY	A	GRAIN SORGHUM
A	TRITICALE	B	TURNIP	A	KALE	A	LUPIN	B/P	RED CLOVER	A/B	SWEET CLOVER	P	PIGEONPEA	A	MUNG BEAN	A	CUCURBITA	A	SUDAN GRASS
A	ANNUAL FESCUE	B	BEET	A	SPINACH	A/P	MEDIC	P	WHITE CLOVER	P	SAINFOIN	A	CHICKPEA	A	SOYBEAN	A	SAFFLOWER	A	TEFF
P	SALINE TOLERANT	A/B	CARROT	A/B	CHARD	P	ROUNDHEAD LESPEDEZA	P	KURA CLOVER	P	ALFALFA	A	FAVA BEAN	A/P	PEANUT	A	SUNFLOWER	A	CORN



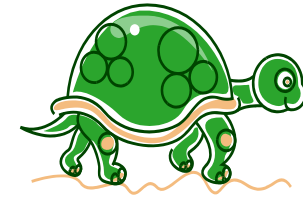
Adaptive Nutrient Management



Adaptive Nutrient Management

Material	C:N Ratio
Rye Straw	82:1
Wheat Straw	80:1
Oat Straw	70:1
Corn Stover	57:1
Rye Cover Crop (Anthesis)	37:1
Rye Cover Crop (Vegetative)	26:1
Mature Legumes	25:1
Balanced Microbial Diet	24:1
Daikon Radish	19:1
Crimson Clover	17:1
Ryegrass (Vegetative)	15:1
Young Alfalfa	13:1
Hairy Vetch Cover Crop	11:1
Soil Microbes (Average)	8:1

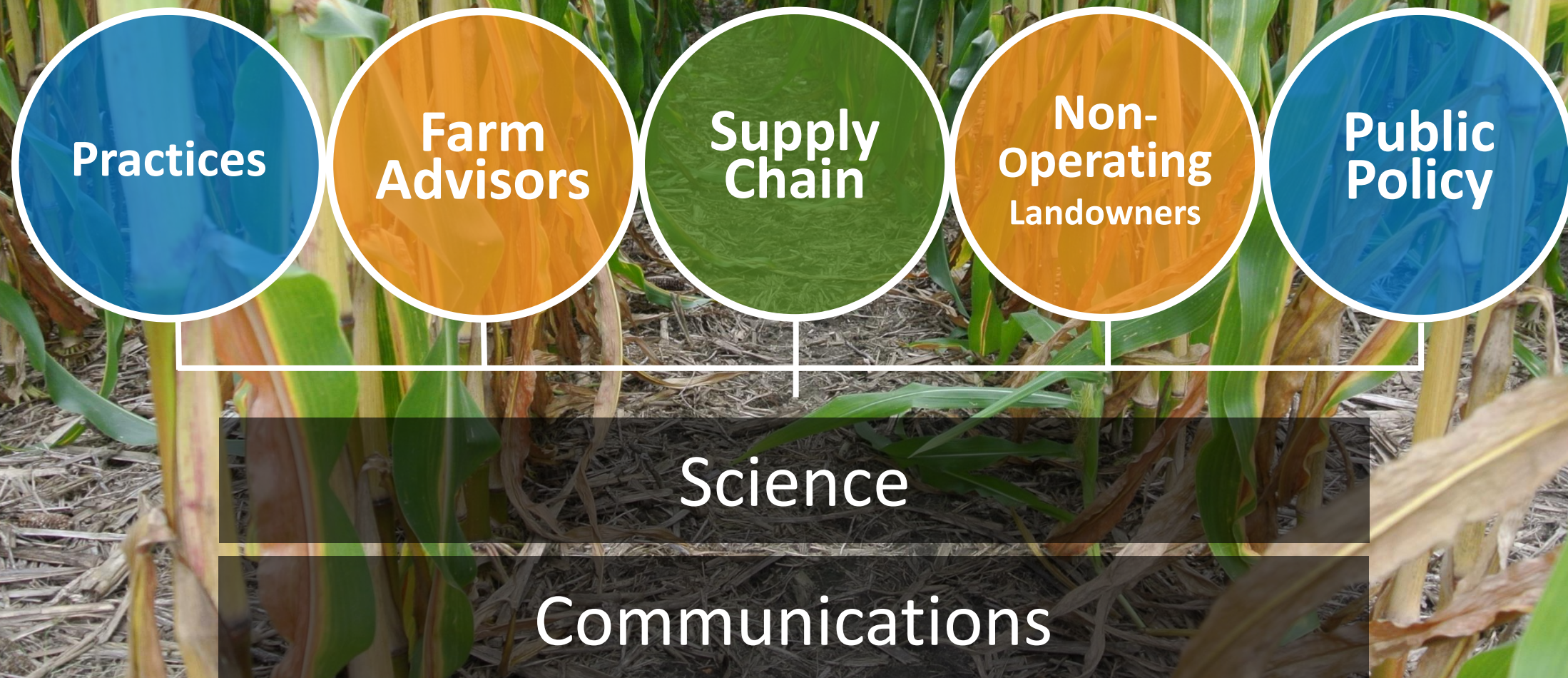
Good for Soybean



Good for Corn



Illinois Ag Strategy



IL Levers: Trainings, Networks

(Practices, Advisors)

Barriers addressed: Technical assistance providers currently lack in-depth knowledge on soil health, drainage practices



ReGeneratell

IDEA Farm Network
ideas, experience, community



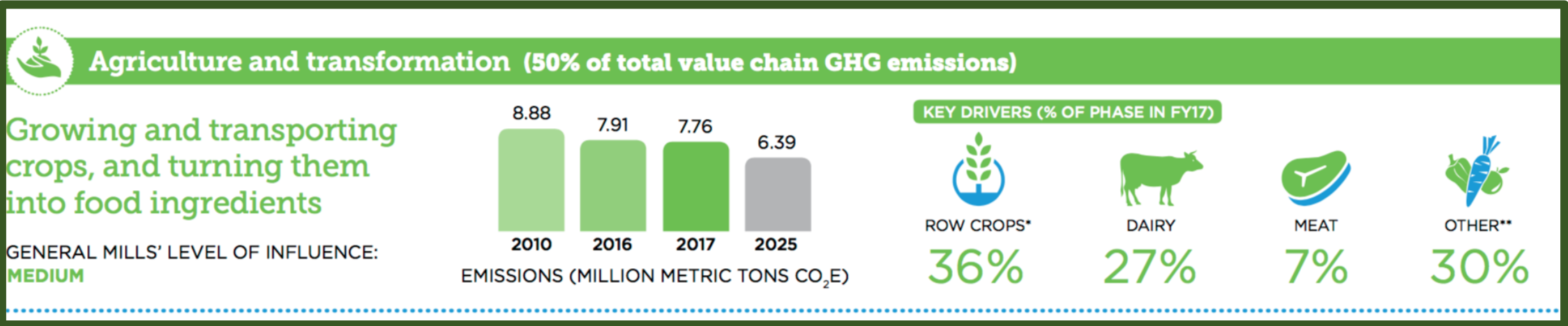
Supply Chain: Soil Health, Corporate Climate Goals



GENERAL MILLS AIMS TO DRIVE REGENERATIVE AGRICULTURE ON 1 MILLION ACRES BY 2030

GM'S SUSTAINABILITY OFFICER SAYS TRAINING, PROGRAMS WILL BOOST SOIL HEALTH AND ECONOMIC RESILIENCE.

By **Bill Spiegel**
3/4/2019



Non-Operating Landowners: Lease Addendums

Barriers addressed: template language makes it easy for owners to require conservation, begins conversation, neutral

I Farmland Leasing in 2020
farmdoc

Gardner Agriculture Policy Program
delta institute

I ILLINOIS
Agricultural & Consumer Economics
COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Gary Schnitkey **Jonathan Coppess** **Dale Lattz**

- Conservation Habitat
- Nutrient Management
- Soil Health and Conservation

Non-Operating Landowners:

Barriers addressed: robust science creates a simple roadmap for pro



S.T.A.R SCIENCE ADVISORY COMMITTEE

- Dan Schaefer, Director of Nutrient Stewardship | Illinois Fertilizer and Chemical Association
- Lowell Gentry, Principal Research Specialist in Agriculture | University of Illinois Natural Resources and Sciences
- Doug Gucker, Extension Educator, Local Food Systems and Small Farms | University of Illinois Extension
- **Dr. Emily Bruner**, Midwest Conservation and Stewardship Program Manager | American Farmland Trust
- Eric Miller | Piatt County farmer and SWCD Board Member
- Dr. Emerson Nafziger, Professor Emeritus | College of ACES, University of Illinois
- Brett Roberts, State Conservation Agronomist | Illinois Natural Resources Conservation Service
- Erin Bush, Resource Conservationist | Champaign County Soil and Water Conservation District
- Joe Rothermel, Chair and Farmer | Champaign County Soil and Water Conservation District



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S.T.A.R. - Field Form - 2019 Crop Year (after harvest in '18 through harvest of '19) Farmer/Owner Information:

1. Name _____
Phone (____) _____
2. Crop _____
3. Field name & number/tract _____
4. Acres _____
5. County _____
6. Township & Range _____
7. _____
8. _____

9. Cover Crops (Summer 2018 - Fall 2018) - Establish _____
o Annual ryegrass *
o Clover
o Oats
o _____

Instructions: Check ALL THAT APPLY in each category.

Indicate the crop history of field for each year:

2017	2016	2015

06/27/19 version

...and/or phosphate (0-45-0) ...
...and/or potassium rates applied based on ...
o Used Variable Rate Technology application
o Any fertilizer source containing nitrogen or phosphorus was broadcast on frozen or snow covered ...

...nutrient management meeting/field day
o Enrolled in a Federal, State, or Local Conservation Program
o Completed S.T.A.R. Form in 2018

I understand my field may be randomly selected for verification. To the best of my knowledge, the information provided is correct.

Signature: _____

Public Policy:

Barriers addressed: institutional support for ag systems that provide external benefits

Illinois:

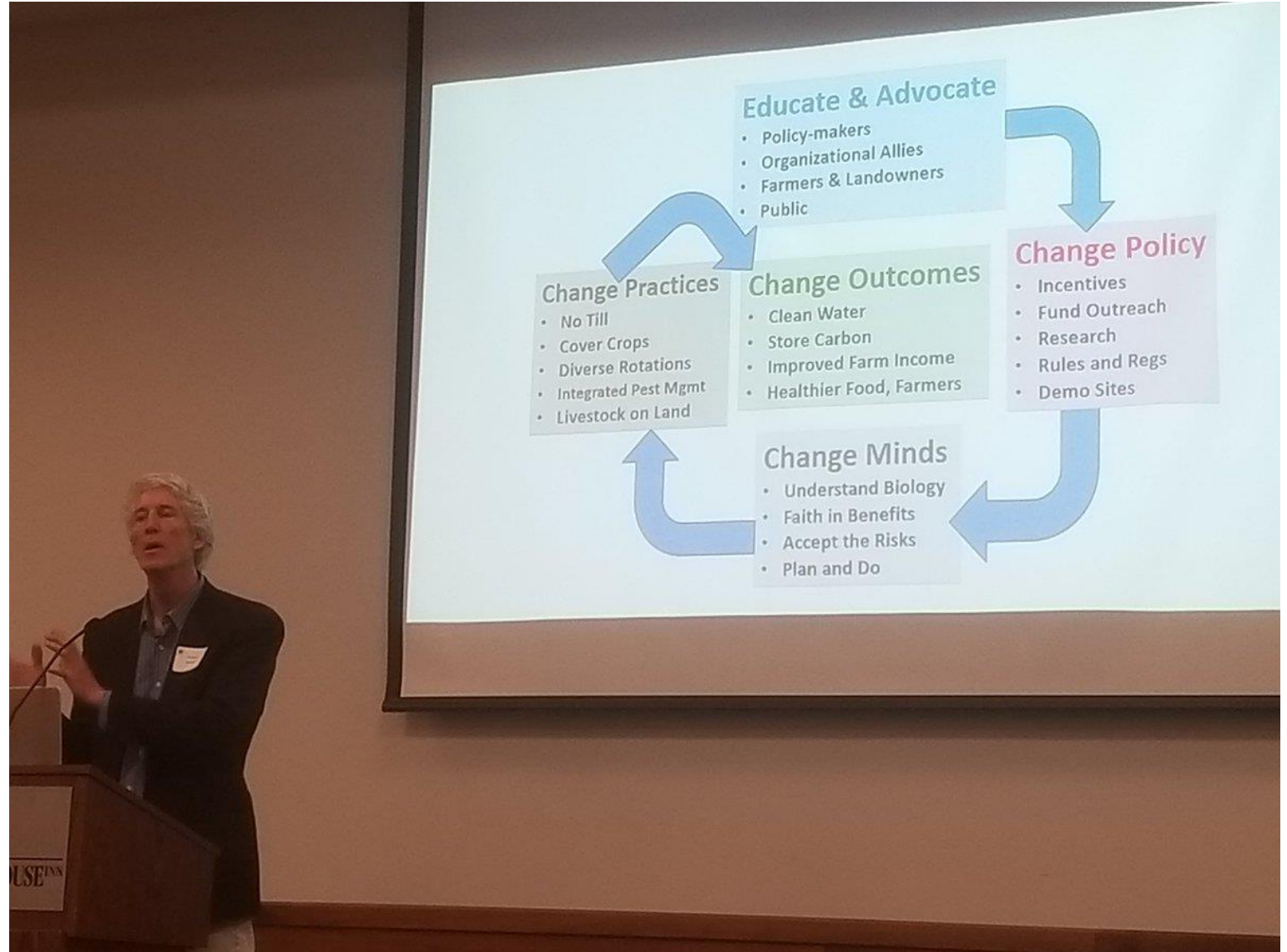
Fully funded SWCDs

Crop Insurance Reward

Federal:

AGree Coalition

Farm Bill



Questions?

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ilsustainableag.org

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Protecting nature. Preserving life.