



United States Department of Agriculture



Farmer Opportunities for Conservation Through the Inflation Reduction Act (IRA)

Indiana CCA Conference - 2023

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Resources
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United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)

“Helping People Help the Land”

Soil

Water

Air

Plants

Animals

Energy

Human = decision making





Economics of Conservation

- **Cost of tillage**
 - Fuel
 - Labor
 - Equipment
- **Cover Crops**
 - Seed & seeding
 - Termination
 - Partially offset by at least one less tillage pass in fall plus maybe spring.
- **Runoff & Erosion**
 - Topsoil loss
 - Gullies.

Conservation is not a destination...it's a journey!

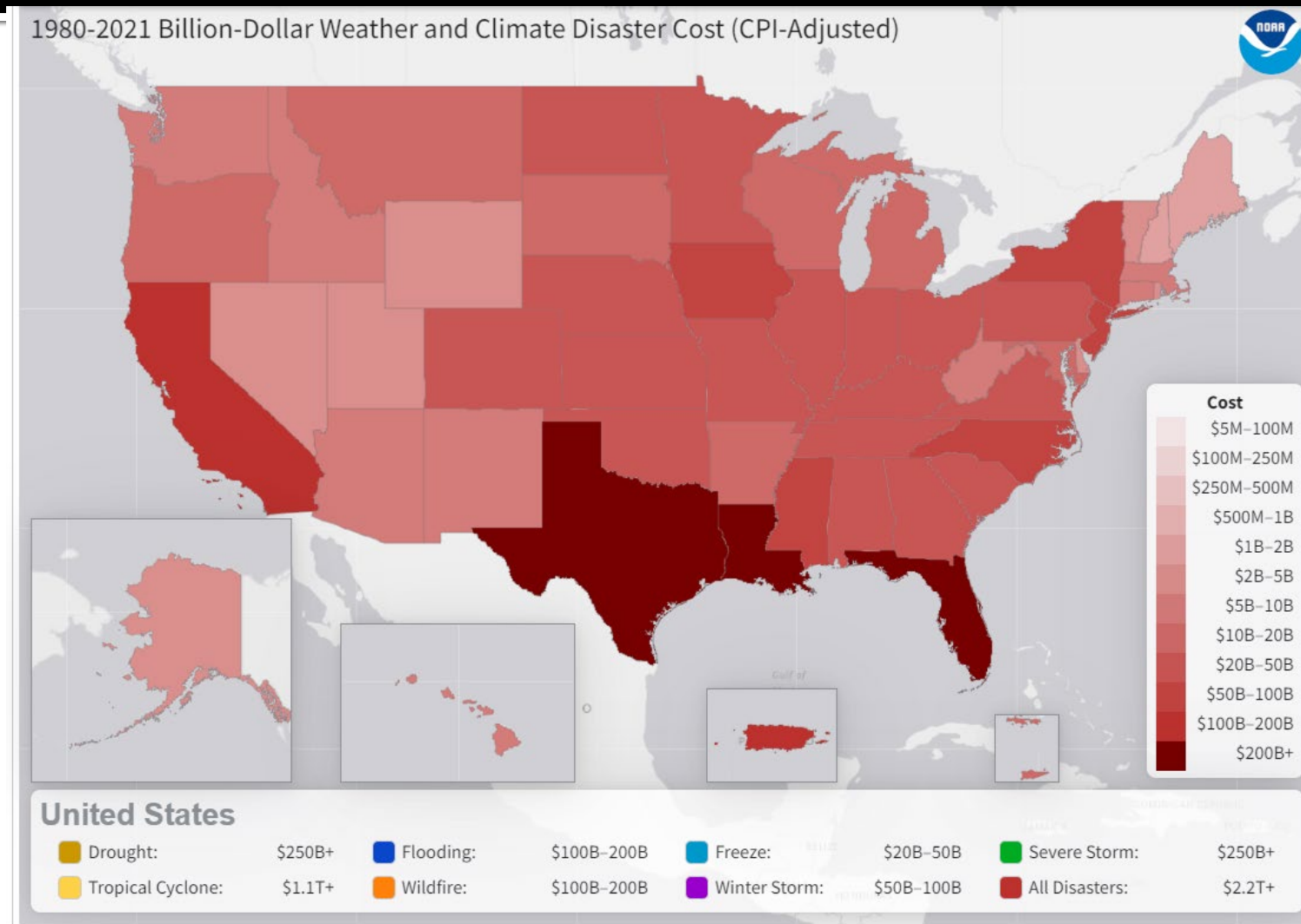


Agricultural Production = MORE!

- **What are some of the challenges?**
 - Population trends
 - Land use and productivity
 - Production (food, feed, fuel, fiber & forage)
 - Nutrient availability and production
 - Changing climate (extreme weather events)

Billion Dollar Weather/Climate Disasters

1980-2021



Please note that the map reflects a summation of billion-dollar events for each state affected (i.e., it does not mean that each state shown suffered at least \$1 billion in losses for each event).



“Current” Drought Conditions

Map released: December 14, 2023

Data valid: December 12, 2023

Intensity and Impacts

None
D0 (Abnormally Dry)

D1 (Moderate Drought)
D2 (Severe Drought)

D3 (Extreme Drought)
D4 (Exceptional Drought)

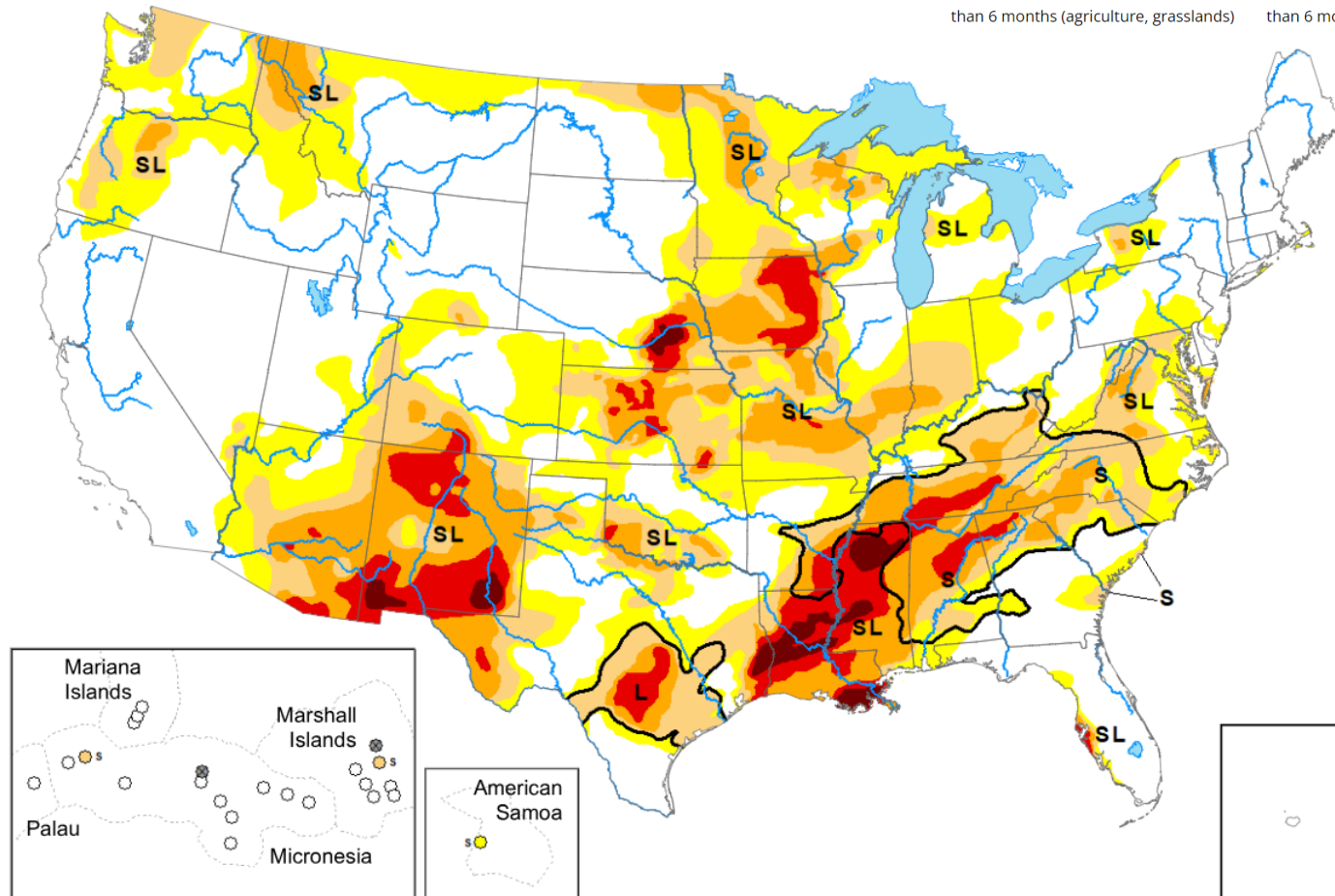
No Data

~ - Delineates dominant impacts

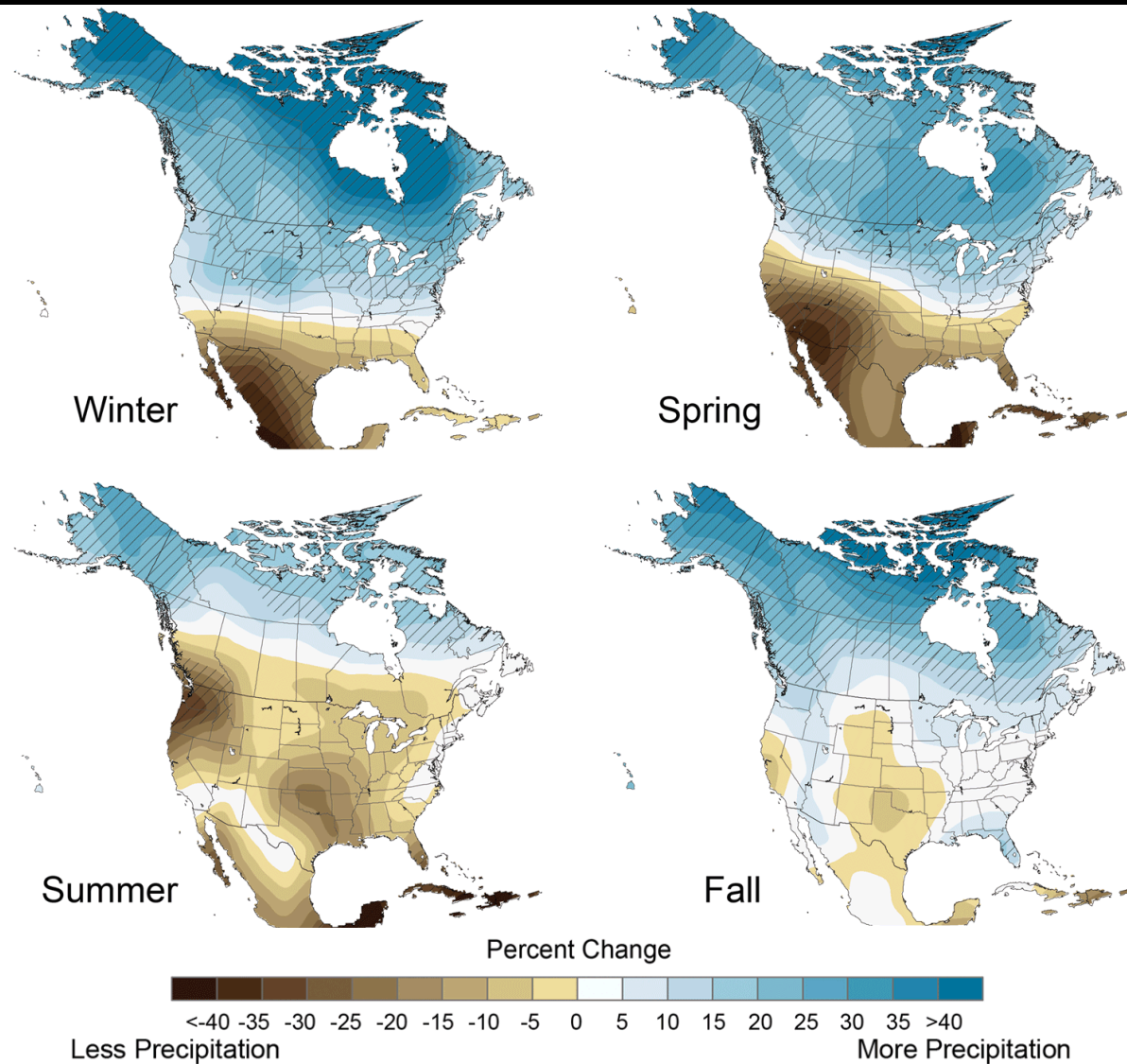
S - Short-term impacts, typically less than 6 months (agriculture, grasslands)

L - Long-term impacts, typically greater than 6 months (hydrology, ecology)

SL - Short- and long-term impacts



Projected Change in N. American Precipitation by 2080-2090



Programs & Practices

Potential Funding Sources

- IDEM
 - EPA319 funding
- Clean Water Indiana
- The Nature Conservancy (TNC)
- Private
 - Carbon Markets
- **USDA**
 - Conservation Reserve Program (CRP) = FSA
 - Initiatives (Great Lakes, Mississippi, Western Lake Erie Basin, +)
 - **Conservation Stewardship Program (CSP) = NRCS**
 - **Environmental Quality Incentives Program (EQIP) = NRCS**

EQIP & CSP:

- **Continuous Signups (sign up any time & develop plans year-round)**
- **Federal Fiscal Year (FY) = October 1 – September 30**
 - **Fiscal Year Funding Application Deadline – TYPICALLY December**
= Will be ranked and considered for funding in that FY
 - **Obligate funds (start practices) = by end of September**

EQIP – process (simplified)

- Submit application (local USDA field office)
- Includes various eligibility paperwork and determination(s)
- Site visit(s)
 - To identify resource concerns,
 - Develop plan to address resource concerns.
- Ranking process
- If the application is accepted, then a contract is developed
- Payments are made when practices are completed.

Cropland Programs and Funding

Environmental Quality Incentives Program (EQIP)

- The “Fix-It” Program
- “Cost-Share”
- Indiana historically receives about \$23M annually for:
 - Cropland/Pasture/Other
 - Forestland
 - Pasture
 - Confined Livestock
 - Wildlife
 - National Initiatives

*Note: 2018 Farm Bill = Goal of 50% of nationwide EQIP funds directed toward livestock-related resource concerns.



Cropland Programs and Funding

- EQIP Cropland Practices
 - In FY23:
 - NRCS obligated \$15 M+
 - Plans = TSPs
 - (127 = \$377,000+)
 - Cover Crops
 - (\$6.1 M+)
 - No-Till + Reduced Tillage
 - (\$850,000+)
 - Nutrient management
 - (\$3.4 M+)
 - Pest Management
 - (\$380,000+)
 - Erosion Control
 - (\$1.8 M+)
 - Amendments
 - (\$1.8 M+)
 - And more!



Confined Livestock Programs and Funding

- EQIP Confined Livestock Practices
 - In FY23:
 - NRCS obligated \$10.1 M+
 - Comprehensive Nutrient Management Plans (CNMPs) = TSPs
 - (95 = \$600,000+)
 - Storage
 - (\$9.4 M+)
 - And more!



Cropland Programs and Funding

Conservation Stewardship Program (CSP)

- The “Reward + Improve” Program
- Annual Payments + “Cost-Share”
- FY24+ = \$4,000 annual minimum payment!
 - Prior to FY24 = \$1,500 annual min.
- Indiana historically receives about \$16M annually for:
 - Cropland/Pasture/Other
 - Forestland



Cropland Programs and Funding

CSP Cropland

- In **FY23**:
 - NRCS **obligated \$9.8 M+** for Enhancements/ Practices to Cropland managers



Inflation Reduction Act (IRA) – National

1. No NEW Programs (2018 Farm Bill Authorities)



United States Department of Agriculture

IRA Funding

Program	Fiscal Year (dollars in millions)					Notes
	2022	2023	2024	2025	2026	
Environmental Quality Incentives Program (EQIP)	-	250	1,750	3,000	3,450	
Conservation Stewardship Program (CSP)	-	250	500	1,000	1,500	
Regional Conservation Partnership Program (RCPP)	-	250	800	1,500	2,400	
Agricultural Conservation Easement Program (ACEP)	-	100	200	500	600	
Conservation Technical Assistance (CTA);	1,000					Available until September 30, 2031
Quantify Carbon Sequestration Program (\$300)	300					Available until September 30, 2031
Administrative Costs for this section	100					Remain available until September 30, 2028,

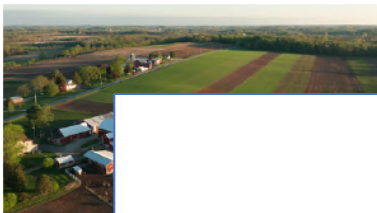


United States Department of Agriculture

IRA/CSAF National Core Practice List & FAQs

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List for FY2024



Highlighted activities have been added to the list in FY2024.
*Noted activities are added to the list as "provisional."¹¹

Mitigation Categories ⁽⁹⁾	Code	Conservation Practice Standard Name ⁽²⁾ (practice unit)	Code	Conservation Stewardship Practice Enhancement Activities
Soil Health	327	Conservation Cover (acres)	E327A	Conservation cover for pollinators and
			E327B	Establish monarch butterfly habitat
	328	Conservation Crop Rotation (acres)	E328A	Resource conserving crop rotation
			E328B	Improved resource conserving crop rotation
			E328E	Soil health crop rotation
			E328F	Modifications to improve soil health and
			E328N	Intercropping to improve soil health
			E328O	Perennial grain crop conservation rotation
	329	Residue and Tillage Management, No Till (acres)	E329A	No till to reduce soil erosion
			E329B	No till to reduce tillage induced particulate
			E329C	No till to increase plant-available moisture
			E329D	No till system to increase soil health and
			E329E	No till to reduce energy
	332	Contour Buffer Strips (acres)		None Available
	336	Soil Carbon Amendment (acres)*		None Available
	340	Cover Crop (acres)	E340A	Cover crop to reduce soil erosion
			E340B	Intensive cover cropping to increase soil
			E340C	Use of multi-species cover crops to improve organic matter
			E340D	Intensive orchard/vineyard floor cover
			E340E	Cover crop to minimize soil compaction
			E340G	Cover crop to reduce water quality degradation by utilizing excess soil nutrients
			E340H	Cover crop to suppress excessive weed pressures and break pest cycles
			E340I	Using cover crops for biological strip till
			E340J	Cover crop to improve moisture use efficiency and reduce salts



Climate-Smart Agriculture and Forestry Mitigation Activities and Inflation Reduction Act Funding Frequently Asked Questions

Questions our customers and partners may have:

- 1. How can agriculture be part of the climate solution?**
Agricultural producers, ranchers, and forest landowners play a critical role in environmental stewardship. The Inflation Reduction Act provides historic investments to support producers in adopting climate-smart practices that can sequester carbon and reduce key greenhouse gas emissions like nitrous oxide, methane, and carbon dioxide. These practices include nutrient management, cover crops, reduced tillage, tree planting, forest stand improvement, and livestock management.
- 2. How long will Inflation Reduction Act funds be available?**
Inflation Reduction Act funds began in fiscal year 2023. Most of the program funding will be available in the first four years with implementation on conservation practices expected to take several years to complete. All conservation practice implementation with Inflation Reduction Act funding must be finalized by September 30, 2031.

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Popular IRA CORE Cropland Practices

- Plantings (perennials and cover crops)
- Reduced Tillage
- Nutrient Management
- Others!

(National Policy) Activities are eligible to receive funding through IRA because, based on scientific literature, they:

- Are expected to directly improve soil carbon;
- Reduce nitrogen losses; or
- Reduce, capture, avoid, or sequester carbon dioxide, methane, or nitrous oxide emissions associated with agricultural production



Base Program Funding – INDIANA (historical)*

Program	2024	2025	2026
EQIP (IN historical)	\$23,000,000	\$23,000,000	\$23,000,000
CSP (IN historical)	\$16,700,000	\$16,700,000	\$16,700,000
ACEP–WRE (IN historical)	\$6,000,000	\$6,000,000	\$6,000,000
RCPP (IN historical)	\$2,200,000	\$2,200,000	\$2,200,000
TOTALS (IN historical)	\$47,900,000	\$47,900,000	\$47,900,000

* - future base program funding assumes historical funding levels will continue

Inflation Reduction Act (IRA) – INDIANA

(anticipated)

Program	2024	2025	2026
EQIP-IRA	\$16,900,000	\$29,300,000	\$33,700,000
CSP-IRA	\$6,700,000	\$13,600,000	\$20,500,000
ACEP-IRA	\$4,000,000	\$6,800,000	\$8,200,000
TOTALS (Anticipated)	\$27,600,000	\$49,700,000	\$62,400,000

Base + IRA – INDIANA

(historical* + anticipated)

Program	2024	2025	2026
EQIP (IN historical)	\$23,000,000	\$23,000,000	\$23,000,000
EQIP-IRA	\$16,900,000	\$29,300,000	\$33,700,000
CSP (IN historical)	\$16,700,000	\$16,700,000	\$16,700,000
CSP-IRA	\$6,700,000	\$13,600,000	\$20,500,000
ACEP–WRE (IN historical)	\$6,000,000	\$6,000,000	\$6,000,000
ACEP-IRA	\$4,000,000	\$6,800,000	\$8,200,000
RCPP (IN historical)	\$2,200,000	\$2,200,000	\$2,200,000
TOTALS (IN historical)	\$47,900,000	\$47,900,000	\$47,900,000
TOTALS (Anticipated)	\$27,600,000	\$49,700,000	\$62,400,000
TOTALS (ALL)	\$75,500,000	\$97,600,000	\$110,000,000

Climate - Smart Agriculture and Forestry (CSAF)

KEY PRACTICES

- Grazing and Forestry
- Vegetation Planting
- Nitrogen Management
- Soil Health





590: Nutrient Management



Scenarios: (think about the 4Rs, progressive planning/implementation)



- **Basic** (if not doing 1 of 3...but will do 1 plus either 2 or 3)
 - *Soil testing; N changes (timing, inhibitor) + more*
- **Basic w/ manure and/or compost** (move manure to lower STP)
 - *Soil test P <50 ppm Bray P1; **manure N credits** + more*
- **Prescription nutrient efficiency**
 - ***Grid or zone soil test**; variable rate P applications; **N changes** + more*
- **NM Grid/Zone Soil Sampling, Variable Rate – Deep Placement**
 - *Grid or zone soil test; soil test P <50 ppm BP1; injection/incorporation below 2 in. + more*
- **Adaptive nutrient management**
 - *4R related strip-trials*



Adaptive Nutrient Management

Tools = improving manure N use

- Replicated plots
 - Tissue testing
 - Pre-sidedress Soil Nitrate Test (PSNT)
 - Chlorophyll meter
 - End-of-season stalk nitrate test

– Purdue N Model

75 lb N / acre	115 lb N / acre	155 lb N / acre	195 lb N / acre	235 lb N / acre	115 lb N / acre	195 lb N / acre	235 lb N / acre	75 lb N / acre	155 lb N / acre	75 lb N / acre	195 lb N / acre	235 lb N / acre	115 lb N / acre	155 lb N / acre
Replicate 1	Replicate 2	Replicate 3												



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- Grazing and Forestry
- Vegetation Planting
- Nitrogen Management
- Soil Health





What is *Soil Health*?

- **Soil Health Key Indicators =**
 - Enhancing and diversifying soil biology
 - Improving aggregate stability
 - Increasing water infiltration
 - Decreasing soil erosion
 - Improving nutrient cycling
 - Increasing organic matter
 - Increasing water-holding capacity

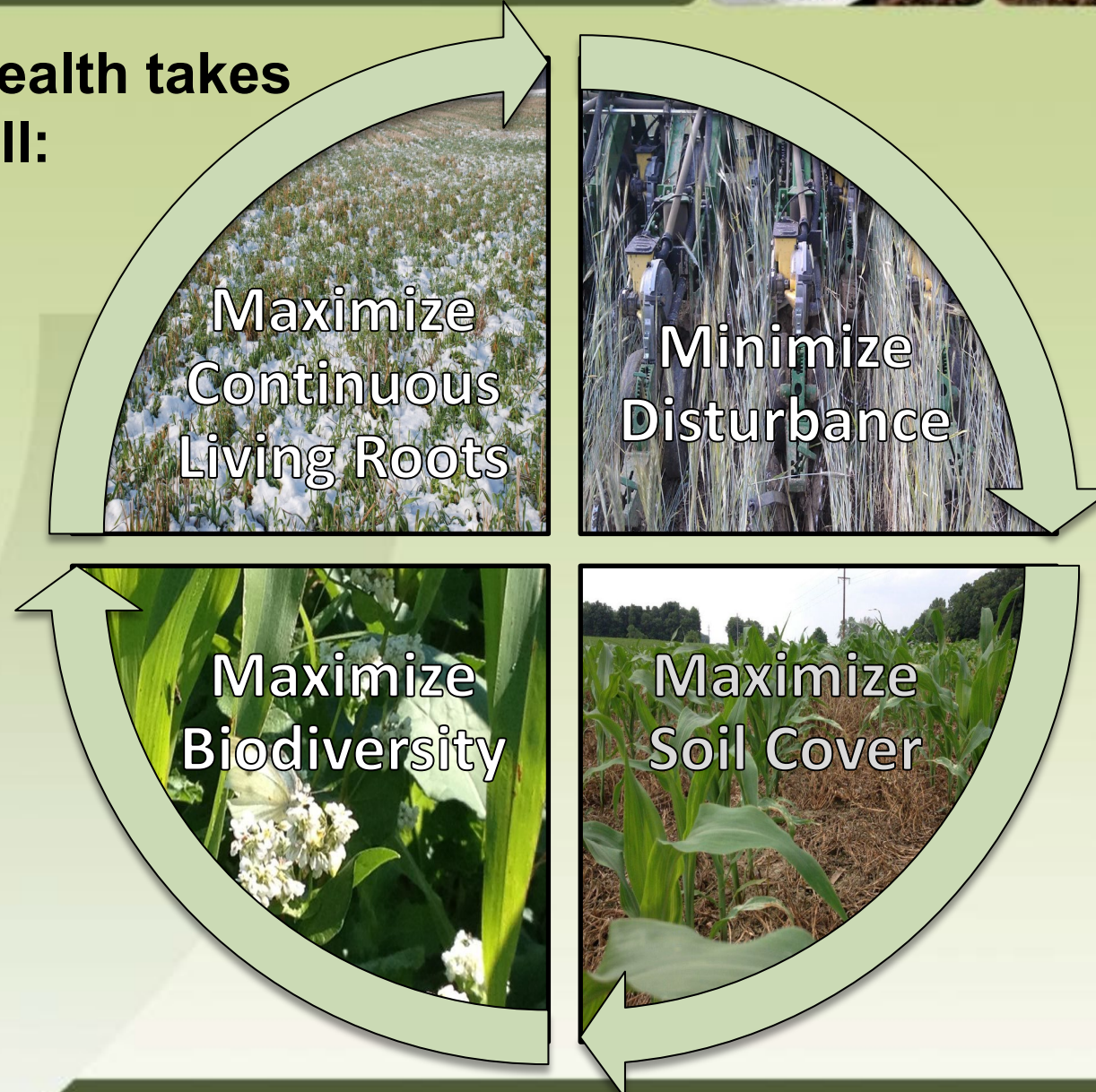


Soil Health is not a destination...it's a journey!



Achieving soil health takes
a system that will:

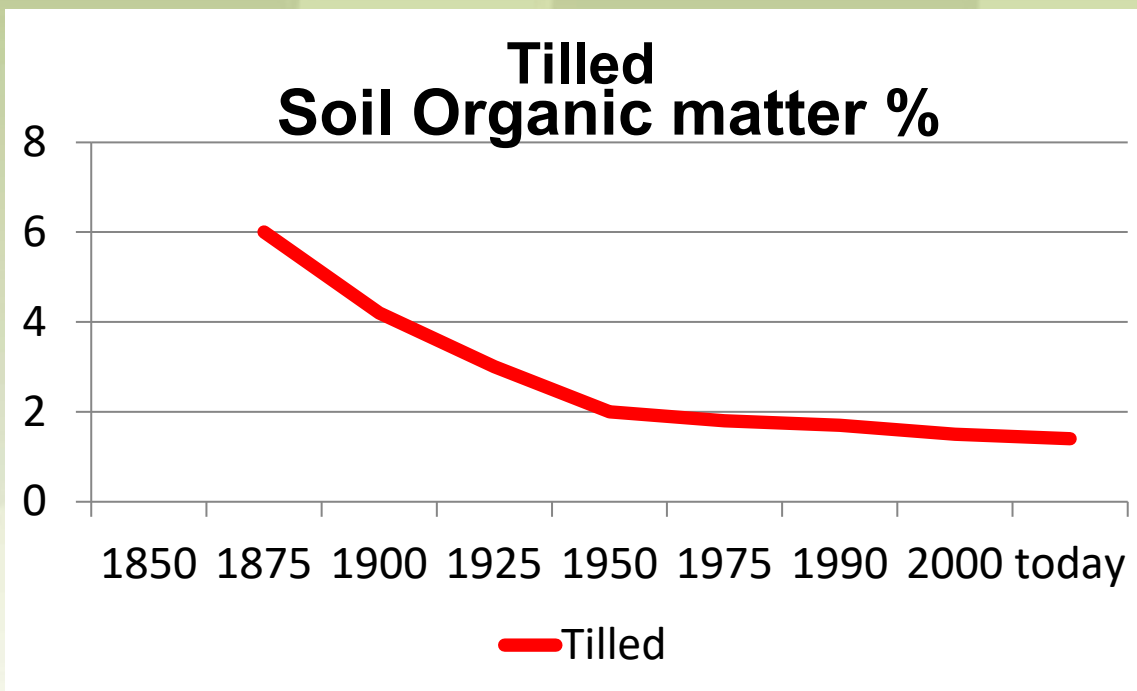
Soil Health Principles





Why is *Soil Health* Important?

Mining Organic Matter Is Not An Option!



Morrow plots, Champaign, IL



Each 1% of O.M. contains:
10,000 lbs. of C
1,000 lbs. of N
100 lbs. of P
100 lbs. of S
≈14,000 gallons of H₂O



Agricultural soils do not have a water erosion/runoff problem, they have a water infiltration problem.

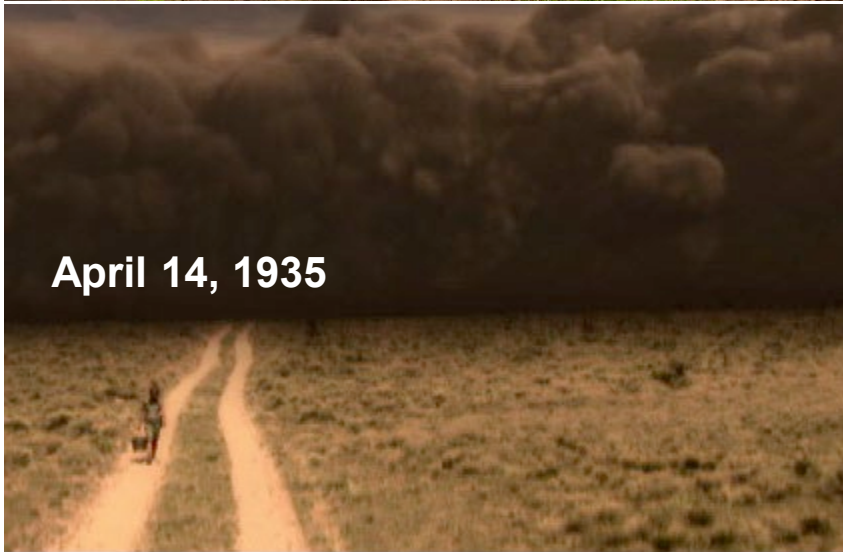


Making Soil Health A Priority!

- What does *Soil Health* mean?
- Soil Health Key Indicators =
 - Increasing water infiltration (we need the raindrop to enter the soil where it lands...NOT run off to a lower spot in the field.)



Erosion: How much is tolerable?



Why is *Soil Health* Important?

Erosion from 1 acre of land (43,560 ft²)!

after 1 year
0.025 inch soil loss
~4 tons/yr

after 40 years
1.0 inch soil loss
~160 tons



Credit: Roger Wolfe, Baltimore, OH (from Jerry Hatfield, ARS)



Why is Soil Health Important? = Western Lake Erie Basin

Cropland:
4+ million acres

Erosion:
2 tons/acre

How Much
Sediment and
Nutrients?





Achieving soil health on cropland takes a **SYSTEMS** approach
...**instead** of individual practices.

- A **Quality** No-till/Strip/Reduced-till System
- **Diverse** and **Strategic** Cover Crops
- **Adapted** Nutrient Management
- **Integrated** Weed & Pest Management
- **Diverse** Crop Rotations
- **Precision** Farming Technology
- **Prescriptive** Buffers and
other edge of field practices



Soil Health is not a destination...it's a **journey!**



Disclaimer = Biased

- Soil Health Management System = the ultimate goal.
- Look for opportunities to make changes in the system...as cropland transitions to a Soil Health Management System (SHMS):
 - One less tillage **pass**,
 - Reduce **intensity** (depth and speed) of tillage,
 - Tweak nutrient **application(s)**;
 - Timing, Method, Rate, Source / material.
- Cover crop!

Soil Health is not a destination...it's a journey!



Disclaimer = and still Biased

- **Soil Health Management System = the ultimate goal.**
 - **Decision makinging process:**
 - **Complicated,**
 - **Many variables,**
 - **Your own biases,**
 - **Easy to do business as usual, however...**
 - **Climatic factors,**
 - **Societal.**

Soil Health is not a destination...it's a journey!



Achieving soil health on cropland takes a **SYSTEMS** approach
...**instead** of individual practices.

- A **Quality** No-till/Strip/Reduced-till System
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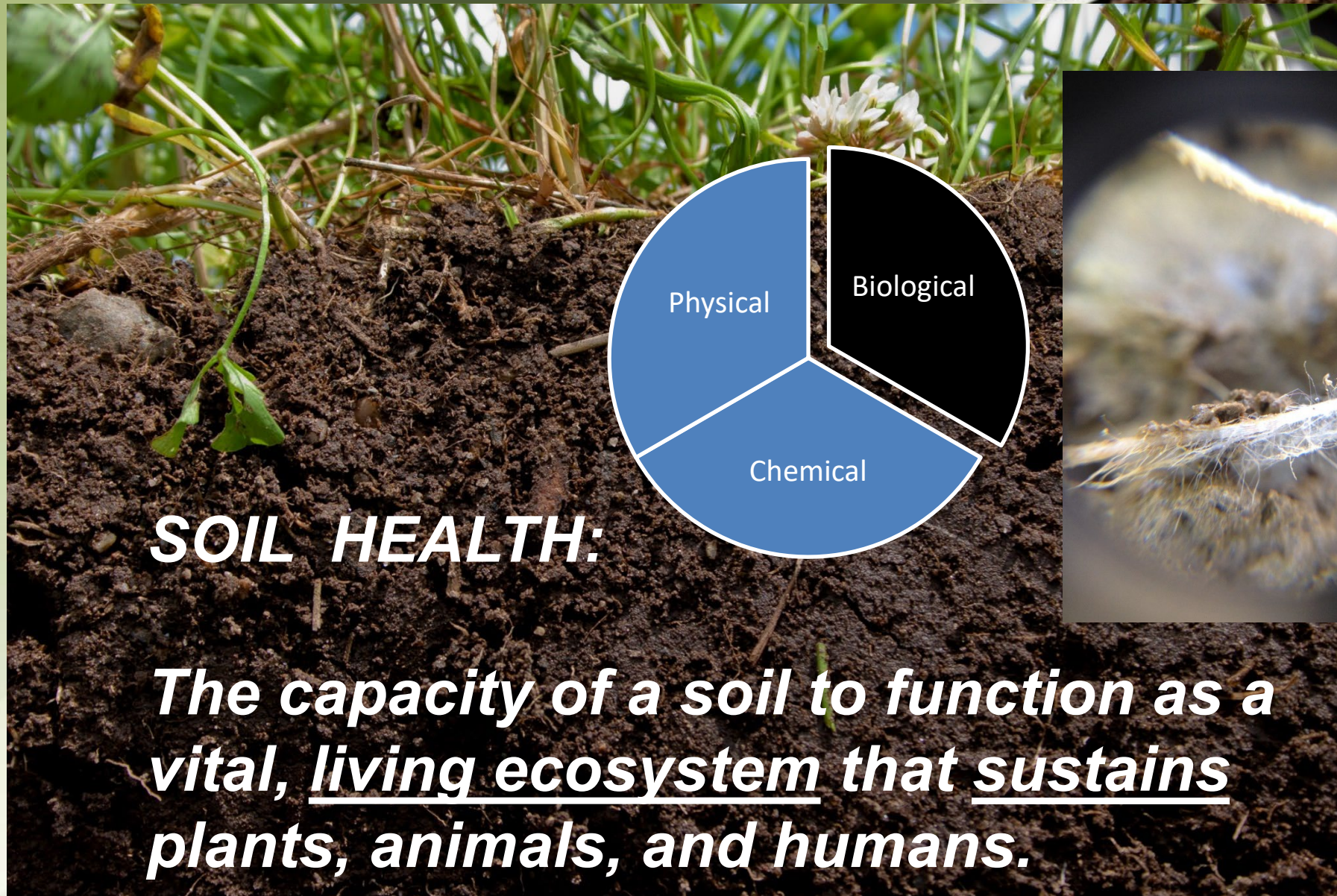
Soil Health is not a destination...it's a **journey!**

EQIP: 328 Conservation Crop Rotation

Adding new crops (i.e. - wheat or others) in rotation

Note: this does not apply to double-crop soybean (even if wheat was planted)

- **Payment (?\$\$s?/acre/year) is for the changed crop rotation all three years, not just the acres in a single year with the new crop.**
 - i.e. - If 300 acres are planned for wheat over 3 years (100 acres each year), payment = \$\$s * 300 acres each year of the contract = \$\$s each year for 3 years...
- **Also - to encourage 340 (multi-species) establishment as soon as possible after small grain harvest.**

The background of the slide is a composite image. The main part shows a soil profile with green plants growing from it, their roots visible in the dark brown soil. Overlaid on this is a pie chart with three segments: a black segment labeled 'Biological', and two blue segments labeled 'Physical' and 'Chemical'. To the right of the pie chart is a circular inset showing a microscopic view of soil, revealing a network of fine, white, fibrous structures, likely microbial hyphae or root tips, against a dark background.

SOIL HEALTH:

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



**We need to start
building soil
life....ASAP!**



Response to soil
aggregates after
only one season



EQIP: 340 Cover Crop (??\$s\$/acre)

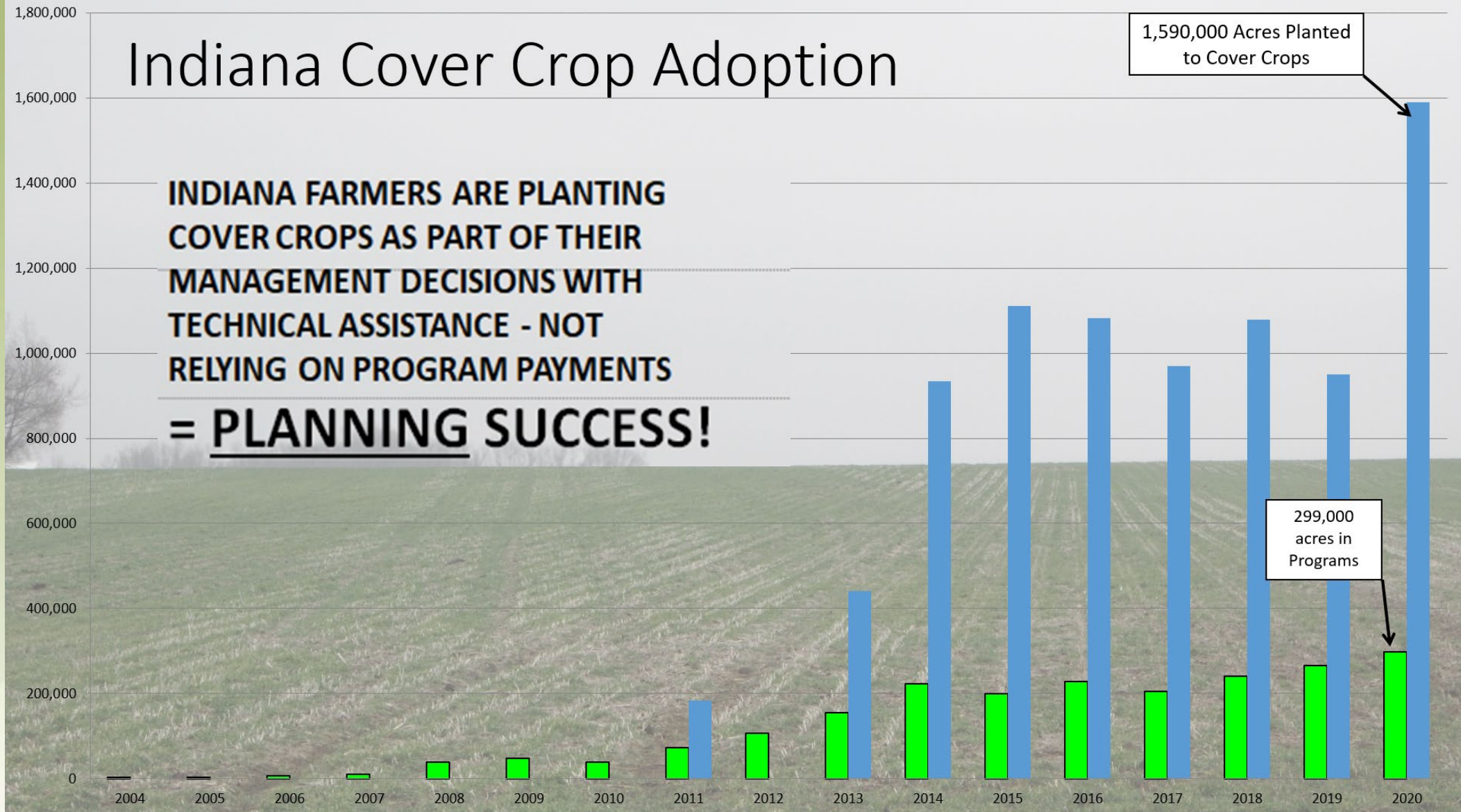
- **Reminder:** goal is to have a successful cover crop experience! This is not one and done...we want full cover crop adoption and commitment.
- Other options:
 - On best – or – worst field?
 - Winter kill species? Or with tillage?
 - **With manure applications.**
 - **After silage.**
 - After tile has been installed.
- Commitment: earlier seeding...don't wait until after harvest...need to have an establishment plan!
- Reminder: goal is long-term cover crop adoption and commitment!





Indiana Cover Crop Adoption

**INDIANA FARMERS ARE PLANTING
COVER CROPS AS PART OF THEIR
MANAGEMENT DECISIONS WITH
TECHNICAL ASSISTANCE - NOT
RELYING ON PROGRAM PAYMENTS
= PLANNING SUCCESS!**





***Soil health management
systems!!!***



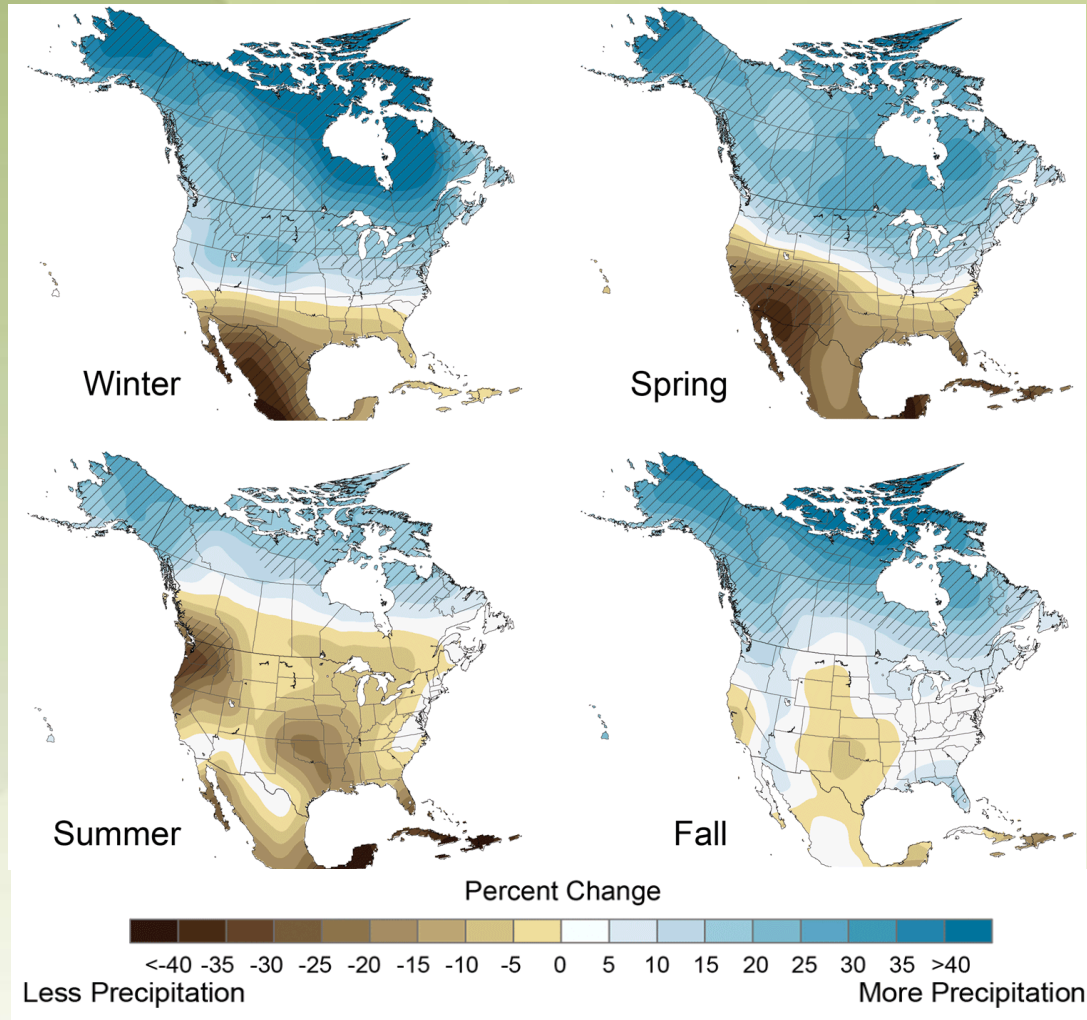
***Sediment
and Nutrients***



**Western Lake Erie
Basin Steve Davis,
NRCS**



Why is *Soil Health* Important? (Resilience)



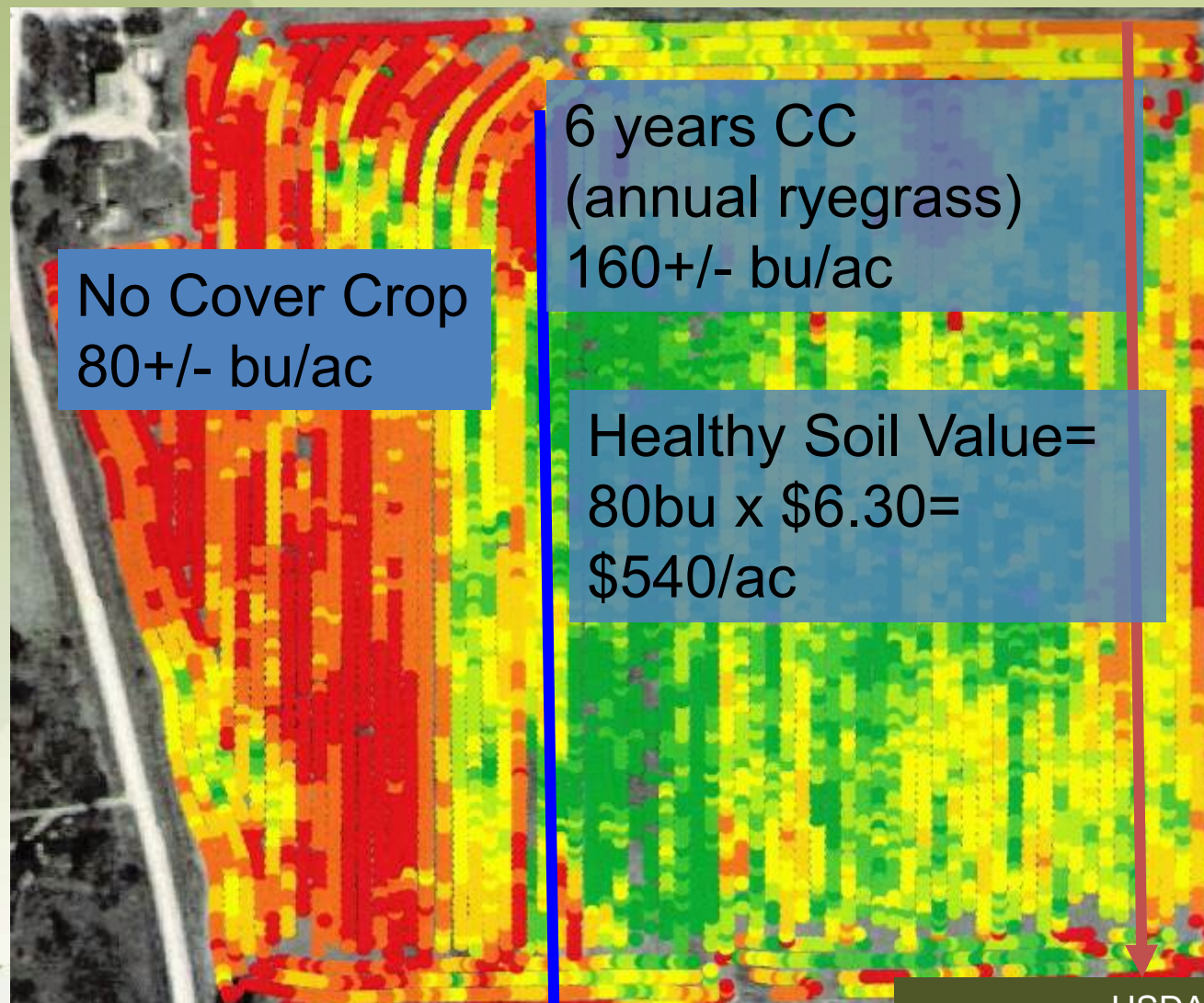
Jerry Hatfield, ARS





Effects of Cover Crop = Resilience!

2012



Estimated Volume (Dry)
(bu/ac)

175.40 - 205.00 (4.92 ac)
161.48 - 175.40 (5.85 ac)
148.63 - 161.48 (5.93 ac)
133.71 - 148.63 (6.01 ac)
111.64 - 133.71 (6.06 ac)
88.70 - 111.64 (6.13 ac)
12.08 - 88.70 (6.02 ac)

Mike Plumer's long term
no-till with annual
ryegrass cover crops



THANK YOU!

TIME FOR QUESTIONS?

Tony Bailey: tony.bailey@usda.gov

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