American Farmland Trust

Kris Reynolds - American Farmland Trust

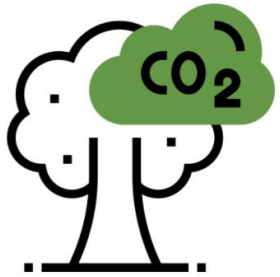
NATURAL CLIMATE SOLUTIONS: A WIN-WIN SOLUTION FOR OUR ENVIRONMENT AND OUR ECONOMY

SAVING THE LAND THAT SUSTAINS US

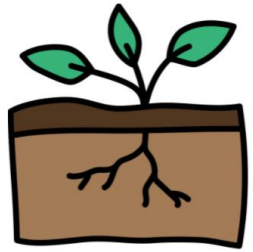
- Protecting farm and ranch land
- Promoting sound farming practices
- Keeping farmers on the land

The Role of Soils

We have lost more than half of the organic carbon originally stored in U.S. soils



The soil organic carbon pool is up to 4X the amount of carbon stored in the vegetation on land

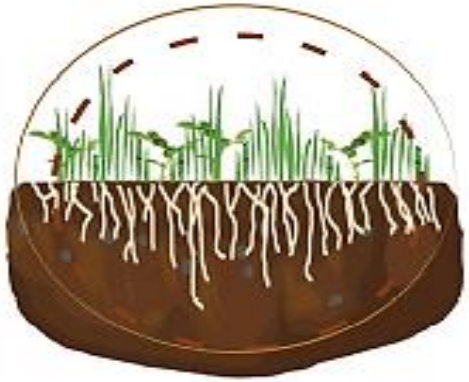


Rebuilding soil health is crucial to sustain agriculture

Co-benefits of Cover Crops & No-till

SOIL TEMPERATURE AND MOISTURE REGULATION

WINTER AND EARLY SEASON WEED SUPPRESSION

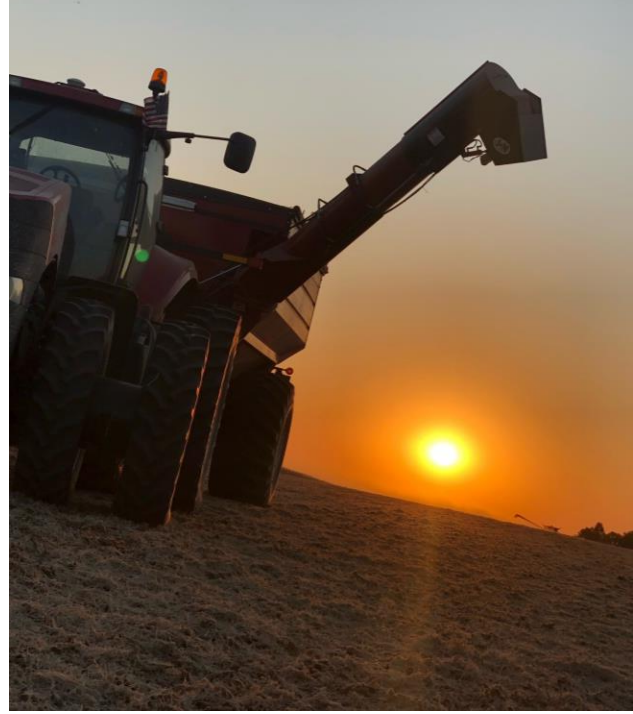


IMPROVED SOIL STRUCTURE

REDUCED SOIL LOSS FROM WIND AND WATER

INCREASED DIVERSITY OF SOIL BIOLOGICAL COMMUNITIES

NUTRIENT CAPTURE AND AVAILABILITY



Cover Crops on the Farm!

Soil Health Case Studies

PARTIAL BUDGET ANALYSIS

- Estimate the net economic benefits farmers have experienced from investing in soil health practices (e.g., no-till, strip-till, cover crops).

USDA'S NUTRIENT TRACKING TOOL & USDA'S COMET-FARM TOOL

- Quantify the water quality and climate benefits of these practices.

Drill for cover crop seeding

Earthworms on a root ball

Soil Health Case Study

Jim, Julie, and Josh Ifft, Ifft Yorkshires, IL

FEBRUARY 2020

Introduction

Jim Ifft started farming in 1975 and currently farms with his wife, Julie, and son, Josh. The family grows corn and soybeans on 1,800 acres in northcentral Illinois, leasing over 1,600 them. They use soil health practices on all the acres, rented and owned.

Jim has always had an interest in conservation and employs an adaptive management approach. Jim wanted to diversify his corn-soybean rotation as part of this approach and knew he was on the right track when he discovered cover crops. He started by planting cereal rye after his corn harvest on 80 acres in 2014, and now does so on 825 acres. Jim and Josh were so pleased with the cover crops, they started their own cover crop seed dealership providing custom seed drilling services for surrounding farmers.

Jim credits cover crops for helping them try no-till corn. Although the Iffts transitioned to no-till on their soybean fields in the early 1990s, they continued with a vertical-tillage pass each fall and spring for their corn until 2018, when they planted no-till on corn for the first time. Jim said, "We wouldn't have attempted no-tilling corn if not for the improved soil structure we've noticed from our use of cover crops." Jim adds that, "Cover crops are the key to reducing our inputs." The Iffts have reduced their herbicide inputs because of ample weed control provided by the cereal rye. Jim notes his first attempts at covers in 2014 weren't very successful, but he continued to seek advice from producers using covers successfully and kept at it.

The Iffts have also applied their adaptive approach to nutrient management, having switched to variable rate technology (VRT) application of phosphorus (P) and potassium (K) in 2010. The Iffts haven't applied any nitrogen (N) in the fall for decades, but they have recently adapted their

Josh holding his daughter, Julie, and Jim

N program to include a starter application at planting in addition to a subsequent side-dress application, thus ensuring the N is available when the plant needs it.

Soil Health, Economic, Water Quality, and Climate Benefits

Partial budgeting was used to analyze the marginal benefits and costs of adopting cover crops and nutrient management on the Ifft Farm. The study was limited to only those income and cost variables affected by the adoption of these practices. The table on page two presents a summary of these economic effects, revealing that due to the two soil health practices, Jim's net income increased by $22 per acre per year or by $35,685 annually on the 1,650-acre study area, achieving a 123% return on investment.

The study area is restricted to where Jim has planted covers the longest, thereby providing an accurate picture of the soil health practices he has successfully integrated into his operation. Additionally, although Jim's use of covers has allowed him to switch to no-till corn, we did not

Farm at a Glance

COUNTY: Livingston, IL

WATERSHED: Vermillion Headwaters

CROPS: Corn & soybeans

FARM SIZE: 1,800 acres cropland

SOILS: Silt loam & silty clay loam soils on flat to slightly rolling fields

SOIL HEALTH PRACTICES: Cover crops & nutrient management

USDA United States Department of Agriculture Natural Resources Conservation Service

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https://farmland.org/soil-health-case-studies/

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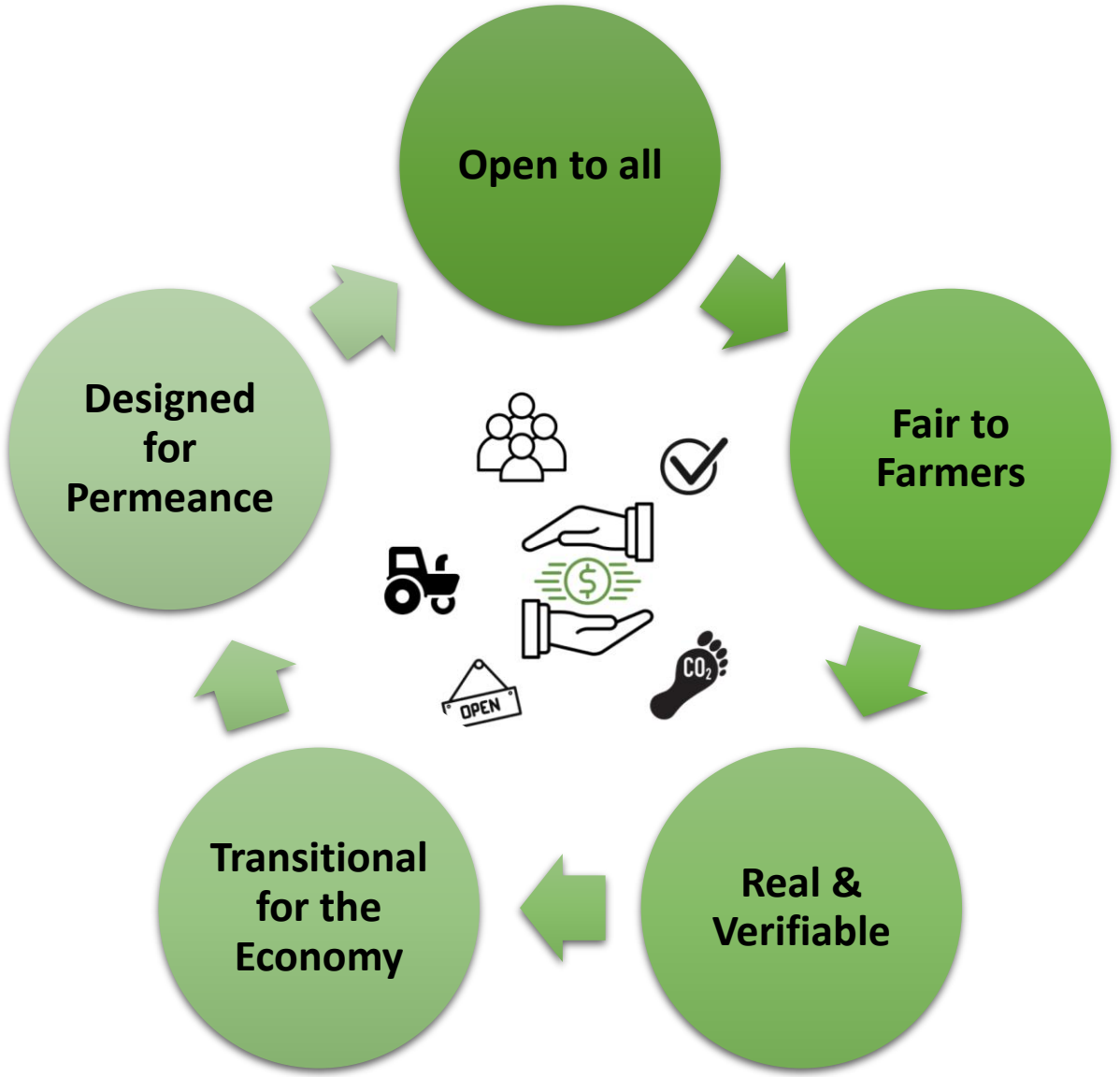
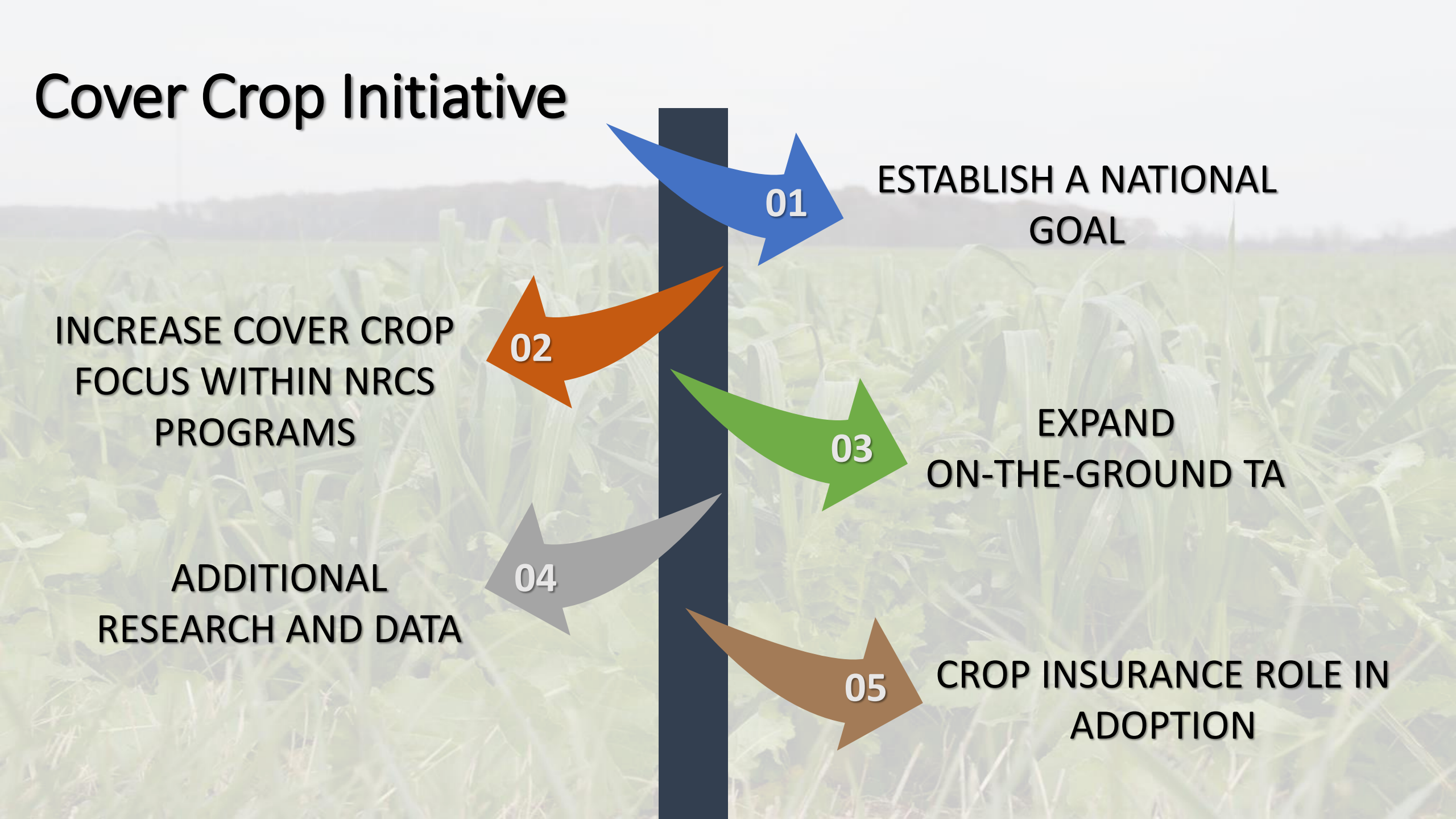
Carbon Markets

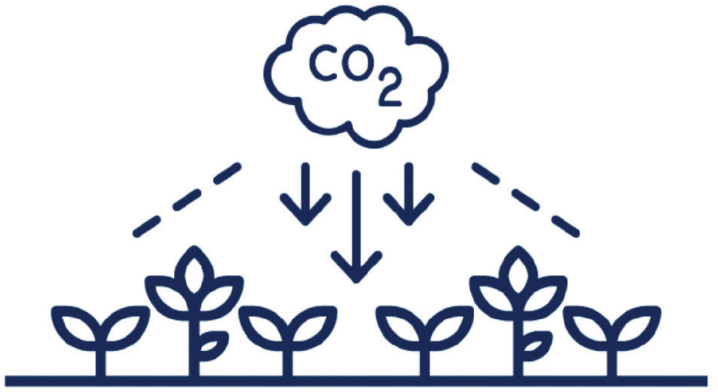


Cover Crop Initiative



Crop Insurance Premium Discount Program

Leveraging State, Federal and Private funding



IF COVER CROPS WERE PLANTED ON 25% OF ROWCROP ACRES IN ILLINOIS, IT WOULD BE EQUAL TO

REMOVING 633,323

PASSENGER VEHICLES FROM THE ROAD FOR A YEAR

Innovative, efficient approach to accelerating cover crops on a big scale

NUTRIENT, SEDIMENT, & GHG REDUCTIONS FROM THE 2021 FCSS PROGRAM

~15,000 lbs
OF
PHOSPHORUS

Kept in the field

+167,000 lbs
OF NITRATE-N

Kept in the field

3,612
TRUCKLOADS

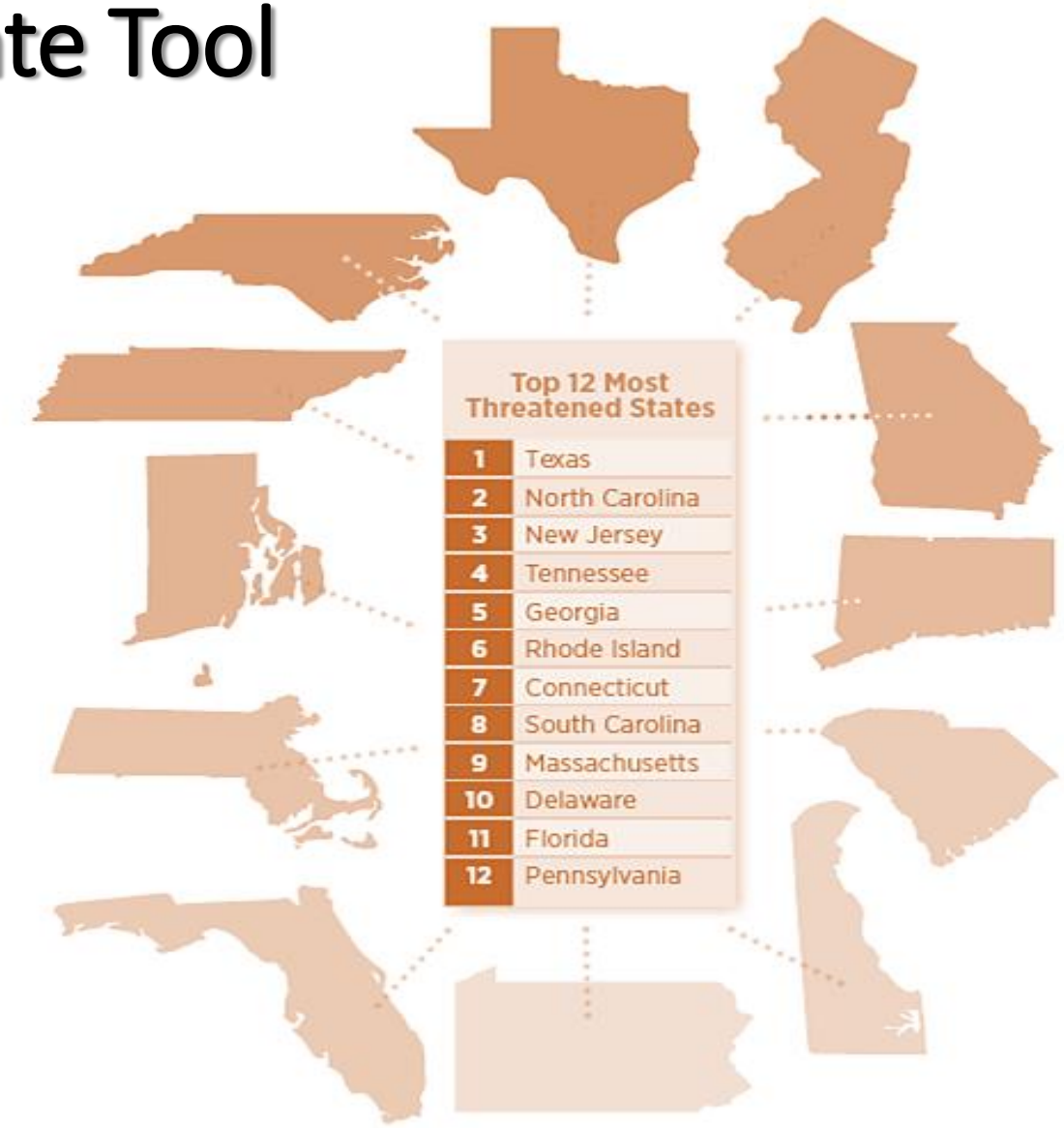
of sediment kept out of waterways

The carbon dioxide equivalent of removing

5,359
PASSENGER CARS FROM THE ROAD

Farmland Protection as a Climate Tool

- ✓ **11 million acres lost** or threatened between 2001-2016
- ✓ Agriculture is **necessary for achieving** climate goals
- ✓ When farmland is developed, **we lose both**:
  - ✓ Existing carbon
  - ✓ Future sequestration potential
- ✓ Development **disproportionately impacts the nation's best land**, pushing production to marginal lands
- ✓ Low-density residential is associated with **higher emissions** than urban high-density



SAVING

THAT SUSTAINS

THE LAND

US!

www.farmland.org