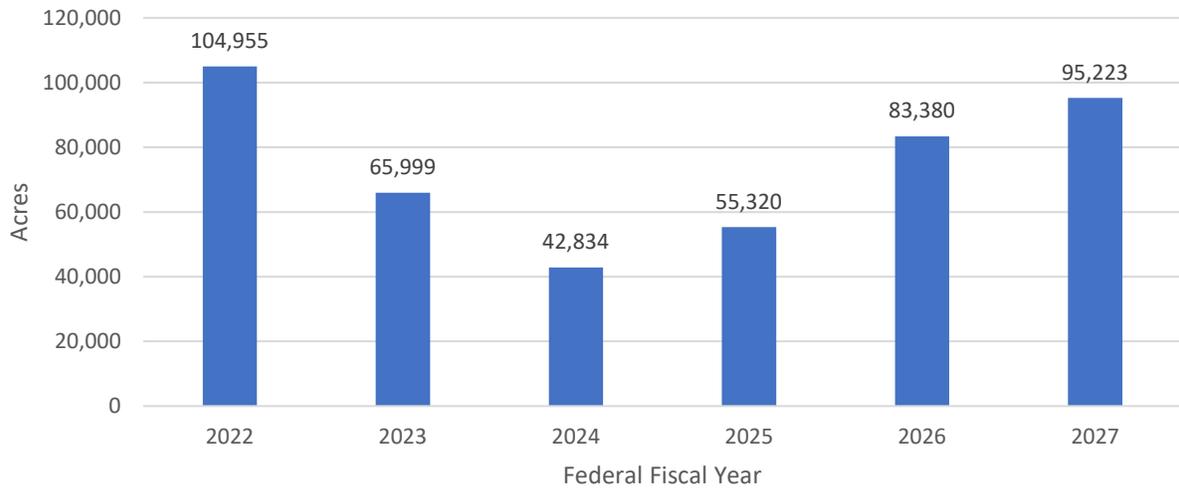


MN CRP Expirations by Federal Fiscal Year



[The state of erosion on U.S. farms | Successful Farming \(agriculture.com\)](#)

THE STATE OF EROSION ON U.S. FARMS

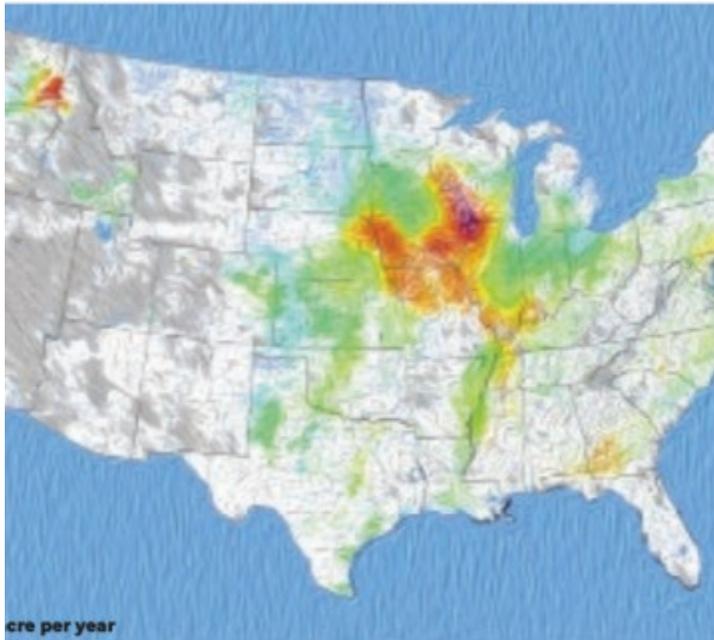
LOSING GROUND, GAINING GROUND.

By

[Megan Schilling](#)

2/2/2022

STIMATED SHEET AND RILL EROSION R.



“It’s easier to close the barn door before the horse escapes than it is to capture the horse after it’s gone.”

It’s a proverb that works well for soil erosion, and it’s what Rick Cruse, professor of agronomy at Iowa State University, tells everyone — from his students to farmers.

“Once the process of erosion starts, it’s like the horse that just got out of the barn with fresh legs. It’s going to take off,” he says.

Three basic principles lead to erosion: detachment of soil particles, transport by flowing water, and deposit of the soil particles away from the source.

Rainfall is one of the most critical drivers in that process, so any strategy to intercept the rainfall (to close the barn door) and conserve the soil will go a long way in reducing soil loss.

Reduced tillage, living cover, and grass waterways are just a few strategies that deserve tremendous credit for promoting soil conservation, Cruse says.

These aren't new concepts, and neither is the continual battle to preserve precious topsoil on cropland.

EROSION MODELING AND DATA

The National Resources Inventory (NRI) program from the U.S. Department of Agriculture's Natural Resources Conservation Service provides consistent data on the status, condition, and trends of land, soil, and water.

The data, which has been collected periodically since 1982 and annually since 2000, includes measurements of water and wind erosion and provides a barometer for change over time.

In the 2017 report, the NRI indicates that soil erosion rates on cropland decreased 35% between 1982 and 2017.

Water erosion declined from 3.89 tons per acre per year to 2.67 tons. Erosion due to wind decreased from 3.24 tons per acre per year to 1.96 tons.

While the decreases are encouraging, state data shows that erosion fluctuates year over year. It isn't a steady decline.

As the total cropland soil erosion data (see below) shows, millions of tons of soil are eroded each year.

The NRI in 2017 recorded erosion loss across all states except Alaska. Some of the highest numbers recorded include these eight states:

- Illinois, 101.5 million tons

- Iowa, 149.3 million tons
- Kansas, 126.82 million tons
- **Minnesota, 138.51 million tons**
- Missouri, 74.25 million tons
- Nebraska, 82.63 million tons
- Washington, 54.17 million tons
- Wisconsin, 47.74 million tons

The critical factors in estimating erosion rates include slope length, slope steepness, soil type, and rainfall based on a 30-year rainfall average.

“Those factors don’t change year after year, but cropping systems do,” Cruse says.

In the cropping systems, crop conservation practices, or a lack of, influence the soil erosion rate.

“When you look at the trends in the graph [“Erosion Rate on Cropland”], you see the high in the early ’80s and lows in the 2000s, but it is increasing again. A big part of that change is how the Conservation Reserve Program [CRP] has been used,” Cruse explains. “As crop prices took a dive, there was a lot more land in CRP, and erosion declined. Now, prices are going back up and so is the erosion rate.”

EROSION PREVENTION IN PRACTICE

No matter what soil health or conservation strategies are in place, extreme weather events and concentrated rainfall as experienced in the past several years are cause for concern.

Because sheet and rill erosion are driven by rainfall on soil, the timing of rain events is more critical to the rate of erosion than how big the storm is. For example, had the Midwest’s tragic derecho in August 2020 occurred earlier in the year, before canopy cover, the soil erosion would have been much worse than it was, Rick Cruse explains.

Drowned fields, muddy streams, and piles of washed-away residue are obvious signs of problems.

That's what tipped off Rick Kerchenfaut to a successful strategy implemented on 50 acres of his Ford County, Illinois, farm.

In 2019, Kerchenfaut planted 15-foot-wide pollinator strips every 120 feet, roughly 5% of his total field.

They are made of up about 32 varieties of plants.

“This project started by introducing cover crops and expanding into some native species to promote predator insects and keep common pests in check,” Kerchenfaut says. “The strips serve as a habitat but also slow the flow of water and increase infiltration in the soil.”

Kerchenfaut was surprised to find how well the strips performed.

“Until I put in the strips, I didn't realize how much topsoil I was losing,” he says. “We had some very large rain events, and at the edge of each strip I could see my topsoil and some of my covers captured in the strips. At least now I see the residue staying in place in the field.”

Kerchenfaut has farmed no-till for five years and started with cover crops seven years ago. He worked with Dallas Glazik, Farm Bill biologist with Pheasants Forever, on the strips project.

Glazik also farms nearby and has worked with other farmers to strategize their crop management, boost soil health, and improve profitability.

Because of the pollinator strips on Kerchenfaut's fields, he's been able to cut out his insecticide program, but he hasn't seen an increase in yield yet. He expects over time to see a bump and plans to introduce more strategies, like grazing cattle, to keep improving the soil biology.

The impact of variable weather continually create issues for farmers in Ford County.

“Rainfalls that amount to 6 inches in two hours are becoming the norm and so are extended periods of dry spells,” Glazik says. “Our total rainfall may be fairly stable year to year, but it seems like the total comes in a shorter period of time.”

Glazik and Kerchenfaut recall seeing neighbors’ fields washed out and the topsoil cross over into Kerchenfaut’s fields, caught by his pollinator strips.

“Rick may be the only farmer in Ford County gaining ground,” Glazik says with a laugh.

SOIL HEALTH MEANS LESS EROSION

Scott Azbell, water management and strategy manager at Trimble Agriculture, says stopping erosion may necessitate surface improvements, such as terraces or waterways, or crop management practices, including cover crops. The return on investment for these often comes back to yield increases.

“In a discussion about ROI, yield is the most obvious measure used, but there are other subtleties, or intangibles, that are harder to put on paper,” he says. “With improved soil health, those intangibles may look like a shorter return to the field for planting after a rain event. Or in summer, fewer delays to do spraying, nutrient applications, or other fieldwork. In the fall, when you plan for and have a timely harvest, those days you get back are extremely valuable.”

Azbell measures his own success by helping others understand that long-term soil health is the goal and that includes soil erosion strategies.

DAILY EROSION PROJECT

Rick Cruse grew up on a farm in northeast Iowa and says his thrill is to apply his research and education to real-world situations. Soil erosion is one of those.

Cruse leads the Daily Erosion Project (DEP) at Iowa State University. DEP estimates soil erosion and water runoff occurring on hill slopes on a

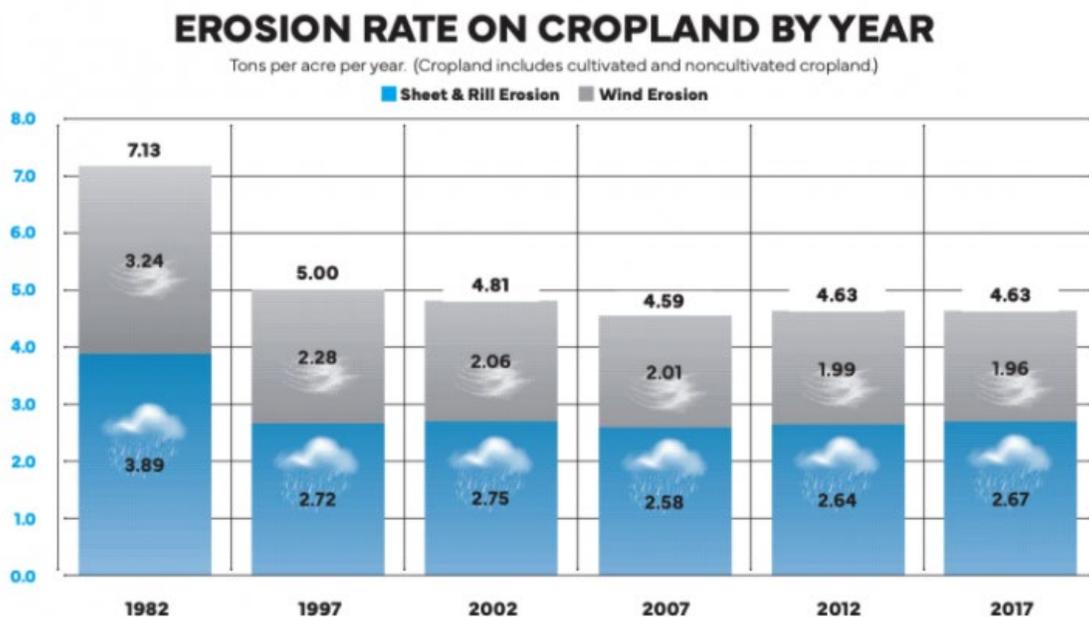
daily basis across Iowa, Kansas, Minnesota, Missouri, Nebraska, and Wisconsin.

Remote sensing tools, including satellites, are used for the calculations, in addition to a rainfall estimate that runs every two minutes for every square kilometer of land. Find DEP on Twitter (@dailyerosion) or use the interactive map tool online (dailyerosion.org).

IT'S NOT TOO LATE FOR IOWA

Kathleen Woida, adjunct professor at the University of Iowa, published the book, *Iowa's Remarkable Soils*, in 2021. Woida's career includes 26 years as a geologist with the U.S. Department of Agriculture's NRCS. She's worked in Utah, New Mexico, and Iowa. Her book tells the story of soil and its foundational role to feed the world's people and livestock. She also details the many issues that have caused Iowa's leading levels of soil erosion.

"Iowa has great soils and they've been degraded, but it's not too late," Woida says. "We can build them back up. In my travels across the state over the years, I've talked to many farmers and because of them, I have hope."



CRP AND BEEKEEPING

[CRP and beekeeping | Successful Farming \(agriculture.com\)](#)

Jodi Henke

7/26/2020

03:00

We've seen a drastic decline in bee populations over the past two decades. Causes include pesticide exposure, lack of suitable habitat for nesting and foraging, and parasites and pathogens.

The Conservation Reserve Program has an initiative called [CP42](#) that can help establish more nesting and forage habitat for bees. It encourages the planting of wildflowers and legumes, with an emphasis on native species and plants that flower throughout the growing season.

[Iowa State University Extension](#) Entomologist Randall Cass says this can be planted as a large swath of prairie or in smaller patches adjacent to farmland, such as prairie strips. ISU research has shown more diversity and abundance of native bee species at prairie sites than at agricultural sites.

"Other research shows that hives, when they are taken from an area where it's mostly agricultural production around them and moved to a site where there's prairie present, they have a higher mass at the end of the season. So, they have more food stores, more nectar stored, more pollen stored and that's important going into the winter," says Cass. "We also see a greater abundance of different pollinators."

The hives don't have to be owned and tended by the landowner. Cass says the challenge is connecting those landowners with beekeepers.

"The easiest way is to go online and find their nearest beekeeper's association or beekeeping organization. Whenever landowners inquire about ways to get bees on their land, I usually try to connect them with their nearest local beekeeping association in order to see if there's anyone that's interested in putting bees at their site," he says.