

The New York Times® Reprints

This copy is for your personal, noncommercial use only. You can order presentation-ready copies for distribution to your colleagues, clients or customers [here](#) or use the "Reprints" tool that appears next to any article. Visit [www.nytreprints.com](http://www.nytreprints.com) for samples and additional information. [Order a reprint of this article now.](#)



April 12, 2011

# High Prices Sow Seeds of Erosion

By **WILLIAM NEUMAN**

When prices for corn and soybeans surged last fall, Bill Hammitt, a farmer in the fertile hill country of western Iowa, began to see the bulldozers come out, clearing steep hillsides of trees and pastureland to make way for more acres of the state's staple crops. Now, as spring planting begins, with the chance of drenching rains, Mr. Hammitt worries that such steep ground is at high risk for soil erosion — a farmland scourge that feels as distant to most Americans as tales of the Dust Bowl and [Woody Guthrie](#) ballads.

Long in decline, erosion is once again rearing as a threat because of an aggressive push to plant on more land, changing weather patterns and inadequate enforcement of protections, scientists and environmentalists say.

“There’s a lot of land being converted into row crop in this area that never has been farmed before,” said Mr. Hammitt, 59, explaining that the bulldozed land was too steep and costly to farm to be profitable in years of ordinary prices. “It brings more highly erodible land into production because they’re out to make more money on every acre.”

Now, research by scientists at [Iowa State University](#) provides evidence that erosion in some parts of the state is occurring at levels far beyond government estimates. It is being exacerbated, they say, by severe storms, which have occurred more often in recent years, possibly because of broader climate shifts.

“The thing that’s really smacking us now are the high-intensity, high-volume rainstorms that we’re getting,” said [Richard M. Cruse](#), an agronomy professor at Iowa State who directs the [Iowa Daily Erosion Project](#). “In a variety of places, soil is being washed away at a rate that is 10 to as much as 50 times faster — than it’s forming.”

Erosion can do major damage to water quality, silting streams and lakes and dumping fertilizers and pe

OPEN

**MORE IN BUSINESS:**  
**Bet on U.S.**  
**Germany's C**  
[Read More »](#)

supply. Fertilizer runoff is responsible for a vast “dead zone,” an oxygen-depleted region where little or no sea life can exist, in the Gulf of Mexico. And because it washes away rich topsoil, erosion can threaten crop yields. Significant gains were made in combating erosion in the 1980s and early 1990s, as the federal government began to require that farmers receiving agricultural subsidies carry out individually tailored soil conservation plans.

Those plans often included measures such as terracing steep ground or sowing buffer strips with perennial grasses to stabilize areas prone to erosion, such as the edges of fields near streams or borders between crops.

Many farmers, such as Mr. Hammitt, who is on the board of the Harrison County soil and water conservation district, also do little or no plowing and leave crop residues on harvested fields, techniques that reduce runoff.

But environmentalists claim that enforcement of conservation plans by the [United States Department of Agriculture](#) is not as strict as it should be and that the gains in fighting erosion have stalled or are being undercut.

[U.S.D.A. data](#) shows that the amount of farmland erosion nationwide from water fell substantially from the early 1980s to the mid-1990s, then largely stagnated.

Enforcement is needed more than ever, environmentalists say, because high crop prices provide a strong incentive for farmers to plant as much ground as possible and to take fewer protective measures like grass buffer strips.

Other factors are also at work. Farmers increasingly rent the land they cultivate, which can mean they are less familiar with areas at risk for erosion or are less invested in caring for the land over the long run. In addition, farmers using modern supersize tractors, built to efficiently cover swaths of land, can find it inconvenient to break up land into smaller sections through buffer areas or terraces. Widely used herbicides can kill the grass in buffer strips, leaving them more vulnerable to erosion. And government [biofuels](#) policies that have increased the demand for corn have encouraged farmers to plant more. “You’ve got all these market forces and public policies and biofuel mandates and more severe storms,” said Craig Cox, senior vice president of the [Environmental Working Group](#), an advocacy group that will release a report on erosion Wednesday. “It’s all coming together, and we’re asleep at the switch.”

Mr. Cox said that he flew over parts of Iowa in a helicopter last spring after a severe storm and found that deep gullies had

formed in unprotected farmland, becoming conduits for soil runoff. Farmers frequently level off such gullies after harvesting in the fall, he said, and then replant the same low-lying areas year after year, leaving them susceptible to further erosion.

Thomas W. Christensen, an Agriculture Department regional conservationist, disagreed, saying, “Conservation compliance is working,” and adding that improvements to its enforcement program were in the works. Last year, however, the agency reviewed fewer than 1 percent of the tracts nationwide that it considered highly erodible to make sure that farmers were following conservation plans. About 1 percent of those reviewed were found to be in violation. But the new [federal budget](#) deal cuts 12 percent from the agency’s conservation spending, which could hamper soil efforts. Agency officials said they were still assessing the impact.

The information from the Iowa Daily Erosion Project paints a grimmer picture than a recent assessment by federal officials. The U.S.D.A’s 2007 National Resources Inventory, released last year, estimated that erosion in Iowa averaged 5.2 tons an acre each year. That was slightly higher than the five tons per acre that the department estimated was a tolerable annual rate of erosion for most Iowa soils, meaning that it allowed a high level of crop productivity to be maintained indefinitely.

Five tons of soil would fill a small dump truck; spread over an acre it would make a layer slightly less than the thickness of a dime, Mr. Cruse said.

While the federal report estimates average rates of erosion for states and regions over a full year, the Erosion Project uses detailed information on rainfall and field conditions to estimate soil loss in 1,581 Iowa townships — nearly all of them — after each storm. Last year, according to Erosion Project data analyzed by the Environmental Working Group, the average estimated rate of erosion exceeded the sustainable level in 133 townships. In 2009, an estimated 641 townships exceeded the sustainable rate, including nearly 400 that had double or more that rate.

The project also provides a picture of the erosion caused by severe storms, like the one that dumped more than seven inches of rain in parts of southwest Iowa in May 2007. In a single day, the figures show, 69 townships had average estimated soil losses of more than 10 tons an acre. Of those, 14 townships were estimated to have an average loss between 20 tons and nearly 40 tons per acre. The 2007 storm was exceptionally damaging, but severe storms are becoming more frequent, according to a state report on [climate change](#) submitted in January to the Iowa Legislature and governor.

Despite the concerns, Iowa is not on the brink of becoming a new Dust Bowl. Many farmers use good conservation practices, and the state's rich topsoil in many areas is deep enough to last decades with moderate amounts of erosion.

But agronomists say that heavy erosion in unprotected areas can significantly diminish crop yields, and, over time, land that is not well cared for can become depleted. That means farmers must use more [fertilizer](#) to increase yields.

Erosion also does major harm to water quality.

More than anything else this year, farmers are making decisions based on how they can best take advantage of corn and soybean prices, which have soared in recent months.

Dr. Cruse said that creates a paradox. When crop prices are low and farmers are scraping by, many say they cannot afford to take steps to protect their fields from erosion. Now, he said, they say they still cannot afford it because there is too much profit to be made from farming every bit of land.

The same incentives have landowners clearing steep hillsides or converting pasture to cropland to cultivate or rent out.

“The requests to farm the marginal areas and the pressure on our noncropped areas have really increased with these commodity prices,” said Todd G. Duncan, an Agriculture Department district conservationist in Winneshiek County in northeast Iowa, another area of the state with steep hills. “We have some people that are making bad land-use decisions right now.”