



# LSP Myth Buster #31

An ongoing Land Stewardship Project series on ag myths and ways of deflating them.

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## Myth: Soil erosion is at sustainable levels.

### Fact:

There is no doubt soil erosion rates have dropped dramatically since the “Dirty Thirties,” when soil from the nation’s midsection literally reached the nation’s capitol during unprecedented windstorms. Conservation tillage, land retirement programs like the Conservation

Reserve Program and a greater awareness of the vulnerability of our soil resources have helped cut erosion in the Midwest and elsewhere. Day-to-day erosion on the typical crop farm is nowhere near what it was during the days of the moldboard plow, and farmers deserve a huge pat on the back for that.

The most recent National Resources Inventory (NRI) has found that between 1982 and 2007, erosion dropped 43 percent nationally. According to the NRI, which is the federal government’s assessment of how much soil is being washed and blown off our farmland, between 1982 and 2007, average water-caused erosion on cropland dropped from 4 tons per acre per year to 2.7 tons; annual wind erosion rates fell from 3.3 tons per acre to 2.1 tons.

The USDA says we are losing on average only 3.9 tons per acre annually across the Corn Belt. While any soil loss is troubling, when you can get it down to around the 5 tons per acre range, many scientists are confident that’s a rate we can tolerate agronomically and environmentally since it can be replaced over time through the build-up of new material.

But this spring a significant study was released showing Iowa farms are losing soil up to 12 times faster than previously thought. Such a loss is well beyond the rate that we can replace through the development of new soil over time. In other words, it’s not sustainable.

“In a variety of locations, we’re losing topsoil considerably faster—10 to as much as 50 times faster—than it’s forming,” Iowa State University agronomy professor Richard Cruse told the *New York Times* after the report was released.

Although this particular study focuses on Iowa, soil experts suspect similar research in other parts of the Midwest would turn up equally extreme erosion levels.

Cruse directs the Iowa Daily Erosion Project, which is studying soil loss with an unprecedented degree of precision. It’s the Project’s research that forms the basis for the report, which was put together by the Environmental Working Group (EWG).

Why do the Erosion Project and NRI estimates diverge so much? The USDA’s NRI data is based on sample sites from around the country and takes into account such factors as long-term climate data, inherent soil and site characteristics, and cropping and management practices. Computer models are used to develop broad-brush estimates.

That’s a good start. But the Iowa Daily Erosion Project research provides a truer picture because it uses detailed information on rainfall and field conditions to estimate soil loss after each storm event in nearly all of Iowa’s townships. In addition, EWG used information gathered from aerial photographs and interviews with experts to document the formation of post-storm field gullies.

Paying close attention to the erosion caused by storm events is key. While conservation measures like minimum tillage, terraces and contour farming do a good job of controlling the run-of-the-mill erosion that is caused by raising row crops in the Midwest, such techniques can’t handle major storm events that scour tons of soil in a matter of minutes.

A 1997 paper published in the *Journal of Soil and Water Conservation* pointed out that in fact such storm bursts are the major cause of soil erosion. The authors of that paper went on to argue that land management systems must be adjusted to deal with such erosion events. That doesn’t mean that a significant amount of soil isn’t lost on a routine basis. But big storm events can accelerate things considerably, particularly if they come at just the wrong time—when corn and soybean plants are just starting the growing season, for example.

Our climate is changing and intense storms are more the norm, which means investing in farm conservation should be a bigger priority than ever.

But while the government paid Corn Belt farmers \$51.2 billion in subsidies to push production of row crops like corn between 1997 and 2009, only \$7 billion went for implementing conservation practices during that period. Ironically, government spending on soil conservation is more threatened than ever.

### → More information:

- To view the EWG’s *Losing Ground* report on soil loss in Iowa, including video footage showing extreme erosion, see [www.ewg.org/losingground](http://www.ewg.org/losingground).

- The latest National Resources Inventory report is at [www.nrcs.usda.gov/technical/NRI](http://www.nrcs.usda.gov/technical/NRI).

### Myth Busters on the Internet

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