"Washout" Revisited

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Contents

"Washout" Revisited

- 3 A Closer Look from Iowa's Rural Roadways
- **4** Estimates Understate the Severity of Erosion and Runoff
- **5** A Step in the Right Direction, But Still Miles to Go

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About EWG

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"Washout" Revisited

By Soren Rundquist, GIS/Landscape Analyst and Craig Cox, Senior VP for Agriculture and Natural Resources

n 2013, an Environmental Working Group report titled "WASHOUT" documented that soil erosion across lowa farm land during that spring's heavy rains had been far worse than previous estimates – in some cases carrying away a devastating 40 tons of soil in a single week from fragile and poorly protected fields. In many places, runoff carved "ephemeral gullies" as a result of growers' inadequate conservation measures.

This spring, after a late-May thunderstorm, EWG revisited 18 of the crop fields it had first surveyed in 2013, and the news was better. In contrast to last year's watery onslaught, many of the 18 fields were not hit as hard this time, but in too many locations growers are still not implementing conservation measures that would reduce erosion in the next heavy downpour.

The fact is, the climate is changing. Intense rainstorms are occurring more frequently (see chart below), and as a result of inadequate conservation efforts, much of Iowa's precious soil is washing away, <u>costing Iowa farmers billions in yield</u> and polluting waterways with fertilizers, chemicals and sediment. According to the Iowa Department of Natural Resources, June 2014 was the state's fourth wettest month in 141 years of record keeping.

A Closer Look from Iowa's

Rural Roadways

EWG's analysts returned this spring to tracts of highly erodible land they had surveyed last year to determine whether any new conservation practices such as grassed waterways and buffer strips had been implemented since last year's downpours.

Overall erosion did not appear to be as severe as in 2013 because central lowa dodged the worst storms that hit the state this spring. On five of the 18 fields, growers had taken new steps to prevent formation of ephemeral gullies and lessen soil loss — an encouraging development. On four of the five fields, new conservation measures had been implemented, and on one field a failed conservation feature had been repaired. On another five tracts, functioning soil-conserving practices that were in place in 2013 were being adequately maintained a year later.



Increasing Heavy Downpours in Iowa

Takle, E., 2011: Ch. 2: Climate changes in Iowa. Climate Change Impacts on Iowa 2010,, Iowa Climate Change Impacts Committee, Iowa Department of Natural Resources, 8-13



Elsewhere, however, the scars of ephemeral gullies were once again readily visible. The other eight fields showed no sign of any new efforts to enhance soil conservation. Two sites where conservation practices had failed in 2013 were still in need of repair a year later. Six others lacked much-needed conservation practices in both years.

Click on the map above to go to an interactive version and see before and after photo comparisons of each site.

Estimates Understate the Severity of Erosion and Runoff

In terms of average soil erosion, central lowa got off relatively easily this year compared to the <u>five days</u> <u>of storms in late May</u> 2013 (May 25-29) that were the focus of <u>EWG's 2013 "Washout"</u> report.

Data compiled by Iowa State University's <u>Iowa Daily</u> <u>Erosion Project (IDEP)</u> shows that this year, fields in southwest and northeast Iowa took the brunt of strong storms in April, May and June. Over the six months from January 1 to June 30, the worst erosion took place in Pottawattamie, Adair, Clayton and Cass Counties, which accounted for 29 percent (4.3 million tons) of all soil loss from Iowa cropland (see next page).

More than 50 percent of the total erosion was the result of just four storms (see next page). The worst single storm occurred on June 3 and accounted for approximately 17 percent of all soil loss since the beginning of the year. The six most intense rainstorms accounted for 62 percent of the state's total erosion.

Soil erosion and polluted runoff are actually worse – likely far worse – than the lowa State estimates, because it cannot currently account for the erosion and runoff caused by ephemeral gullies. These gullies – called ephemeral because farmers refill them temporarily with tilled soil each year – appear quickly



when runoff water flows through the lowest parts of a field and cuts a channel through unprotected soil.

A Step in the Right Direction, But Still Miles to Go

How much difference did a year make? In the areas that EWG researchers revisited this year, we found that some farmers had taken the necessary steps to protect soil and water by installing or repairing grass waterways or applying cover crops. But in other places essential conservation practices were still missing on highly erodible land, allowing soil and farm chemicals to flow into ditches, streams and, in some cases, into underground drainage systems.

Central lowa dodged an erosion bullet, but southwest and northeast areas were not as lucky. Across the state, erosion rates are still intolerable and will continue to be if lowans don't act now.

When the rains come next year, will lowa be prepared?

Rainstorm Date	Total Cropland Erosion (tons)	Percent of Statewide Cropland Erosion (Jan.1- June 30, 2014)
6/3/2014	2,556,611	17%
5/11/2014	2,181,531	15%
4/13/2014	1,585,861	11%
6/16/2014	1,440,939	10%
6/30/2014	1,035,985	7%
6/19/2014	588,297	4%
49 other Storms	5,640,500	38%
Total	15,029,723	100%