

Big wheel ruts, big economic losses

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Aerial photo of wheel-traffic compaction on early-season crop stands in western Minnesota. Credit: Jodi DeJong-Hughes

Excessively wet field conditions at harvest throughout the North Central and upper Midwest regions resulted in many fields with deep wheel-traffic compaction as evident by deep ruts from combines and grain wagons. Although this is a common occurrence during years with

excessive moisture at harvest, the subsequent economic costs are rarely, if ever, projected for large regions.

In an article recently published in *Agricultural & Environmental Letters*, researchers review the [scientific literature](#) on the persistence and quantity of yield reductions due to deep wheel-traffic compaction and then project the state-level [economic costs](#) to farmers that may be expected for the upcoming 2020 and 2021 crops in North Dakota and Minnesota.

The researchers estimate a median of 21% yield reduction to the upcoming 2020 and 2021 corn and soybean crops on lands impacted by deep wheel-traffic compaction during the 2019 harvest. Based on these reductions, they project a minimum economic cost of \$587 million USD to farmers for every 10% of lands that were compacted during harvest. Moreover, the actual land area may extend up to 30%, resulting in a range of \$0-to-\$1.76 billion USD of actual costs to North Dakota and Minnesota farmers.

The findings have implications for [government policies](#) incentivizing conservation practices, such as diversified crop rotations and inter-seeding cover crops, to either reduce the occurrence of field traffic on wet soils or promote drier soils at harvest.

More information: Aaron Lee M. Daigh et al, Projections of yield losses and economic costs following deep wheel-traffic compaction during the 2019 harvest, *Agricultural & Environmental Letters* (2020). [DOI: 10.1002/ael2.20013](https://doi.org/10.1002/ael2.20013)

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