



DAILY EROSION PROJECT

Near Real-Time Soil Erosion Data for Agricultural Landscapes

WHAT IS IT?

The Daily Erosion Project (DEP) offers daily estimates of hillslope erosion, water runoff, and estimates soil erosion rates across small agricultural watersheds (HUC12). Using the Water Erosion Prediction Project (WEPP) model, DEP tracks HUC12 watersheds in Iowa, Nebraska, Minnesota, and parts of Kansas, Missouri, Wisconsin, and Illinois, and posts results online by 7 AM every day.

HOW IT WORKS

DEP combines high-resolution, remotely sensed data to simulate the agricultural landscape for each hillslope. This integration provides event-level detail, capturing individual storm runoff and loss instead of annual estimates.

DATA COMBINATION USED:

- **Lidar Topography** captures slope and landscape features.
- **NEXRAD (weather radar)** precipitation estimates.
- **NASS Cropland Data Layers**, with digitized agricultural field boundaries, identify crop type, residue cover, and tillage practices.
- **Soils Database** provides soil properties for each field.
- **Agricultural Hillslopes** are modeled daily.

By simulating just under one million (959,706) unique hillslopes daily, the model captures the full landscape and agricultural variability. These results are then summarized and reported out at the HUC12 watershed level.

WHY IT MATTERS

FOR FARMERS & LANDOWNERS:

- Understand how different landscapes like yours respond to storms.
- Track soil loss trends year-to-year and storm-to-storm.
- Evaluate real-world erosion in your watershed.

FOR CONSERVATION PRACTITIONERS:

- Identify high-risk watersheds to target practices where they'll have the most impact.
- Quantify the effectiveness of cover crops, no-till, and reduced till over time.

FOR WATERSHED PLANNERS:

- Base conservation plans on field-scale data, not regional estimates.
- Assess cumulative impacts from extreme events.
- Monitor progress toward conservation goals with defensible data.

HOW TO USE IT

Visit dailyerosion.org to explore your watershed.

FOR MORE INFORMATION

Rick Cruse, rmc@iastate.edu

Brian Gelder, bkgelder@iastate.edu

