

AGMRI Reveals Compaction Impact from New Tillage Practice

Key Highlights:

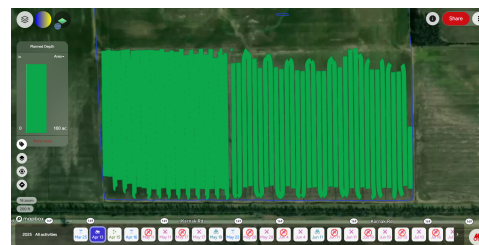
NDVI imagery revealed early-season differences tied to tillage variation.

Compaction confirmed and quantified through correlated imagery and yield data.

Prevented potential 15–25 bu/ac loss by identifying issues before broad implementation.

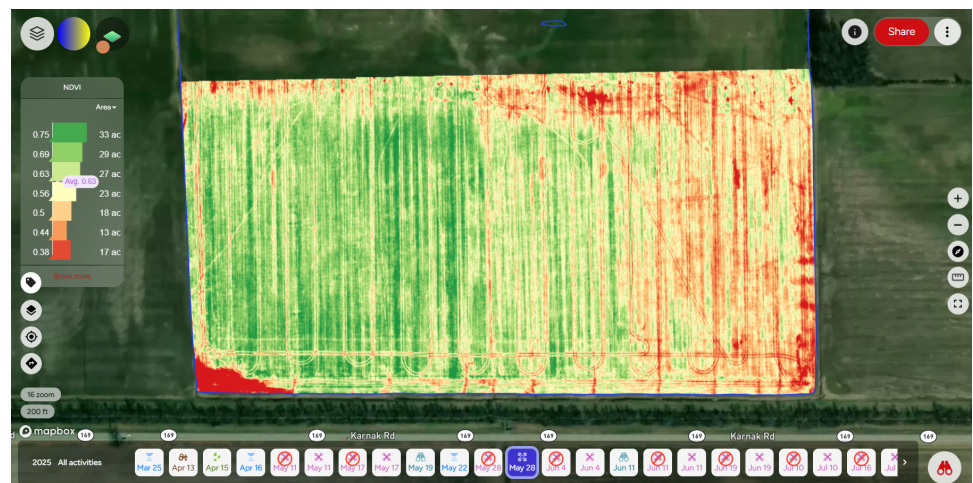
Background:

During a spring field review, a grower from Illinois and his local agronomy team evaluated several fields using AGMRI. While reviewing one particular field, the **NDVI maps revealed a noticeable difference between two sections**. When discussing management history, they learned a **new harrow** was used on one half of the field to test for residue management and seedbed preparation.



Tillage map. The right half of the field was done with the Kelly Diamond, and the left half was done with a cultivator.

Because of the visible variation noted in AGMRI, the team decided to **monitor the field throughout the growing season** to assess how the new equipment might be affecting crop performance. Early imagery suggested potential **compaction issues** in the area where the new equipment had been used. The field became a “test case” to track how soil conditions and tillage practices influenced plant health and yield performance over time.



NDVI layer from May 28

Challenge:

The grower was evaluating whether this new tillage equipment could be used more broadly across the operation. However, if the same performance issue occurred elsewhere, it could potentially lead to a **15–25 bu/ac yield reduction across multiple fields**—a substantial impact on overall productivity and profitability.

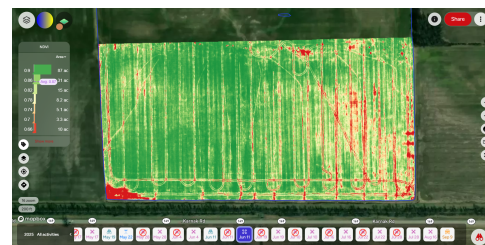


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Since this was the **grower's first season using AGMRI**, it also presented an opportunity to demonstrate how the platform could identify and quantify management-related issues early. Without the AGMRI maps, the problem might not have been recognized until harvest, missing the chance to connect yield performance directly back to tillage practices.

Solution:

During the spring visit, AGMRI's NDVI map immediately revealed distinct differences in crop vigor between the two management zones. By **comparing the early-season tillage map with mid-season imagery**, the team confirmed the affected area aligned precisely with the area where the new tillage equipment was used.



NDVI layer from June 11

Through continuous monitoring, AGMRI provided a **clear visual timeline** of how the issue evolved through the growing season. When **harvest data** became available, it validated what the maps had indicated—the section worked using the new equipment showed **consistent yield loss**.

Results:

Using AGMRI, the grower **confirmed that compaction from the new tillage equipment resulted in yield loss**. AGMRI allowed the issue to be detected, monitored, and quantified, turning what could have been a widespread problem into a contained learning opportunity.

With this additional insight, the grower plans to **adjust how and where the equipment is used** and evaluate soil conditions more closely before tillage. The experience demonstrated the value of analytics and imagery in assessing new management strategies and making confident, data-driven decisions.

By identifying a potential **15–25 bu/ac loss risk** before more widely using his new equipment, the grower prevented larger-scale losses and reinforced the value of analytics and key learnings using AGMRI.

