



BEYOND NDVI WITH PLANETSCOPE 8-BAND DATA

A Corn Irrigation Example

RTVCore analysis of fields outside of North Platte, Nebraska on July 28, 2021

OVERVIEW

The Normalized Difference Vegetation Index (NDVI) is one of the most popular and widely used spectral indices for understanding vegetation health and land use. But like any measurement tool, it has its strengths and trade-offs.

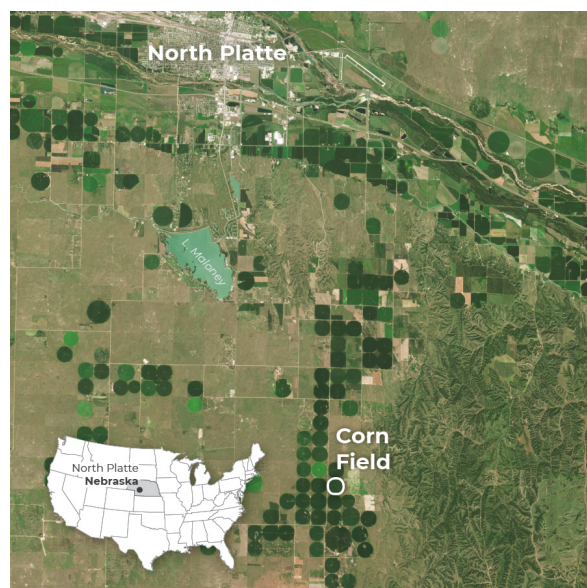
In the case of analyzing broad areas of thick, dense vegetation or crops, there is a point at which NDVI “saturates,” diminishing the ability to characterize change. For agronomists, this can pose a challenge for understanding how crops are responding to inputs like fertilizer and water during the growing season. In the best case, everything is fine, but in the worst case, yields are impacted or field trials go sideways.

The red edge band, which has been shown to be sensitive to subtle changes in vegetation stress, allows for a different approach when NDVI saturates. Take the example of corn irrigation. As opposed to NDVI, the Red Edge Triangulated Vegetation Index (RTVCore)¹ could help growers “peer through” the cornstalks and understand signs of stress before consequences are profound.

THE UPSHOT

Having additional tools beyond NDVI to monitor vegetation and crops is nice, but what does it mean for day-to-day operations?

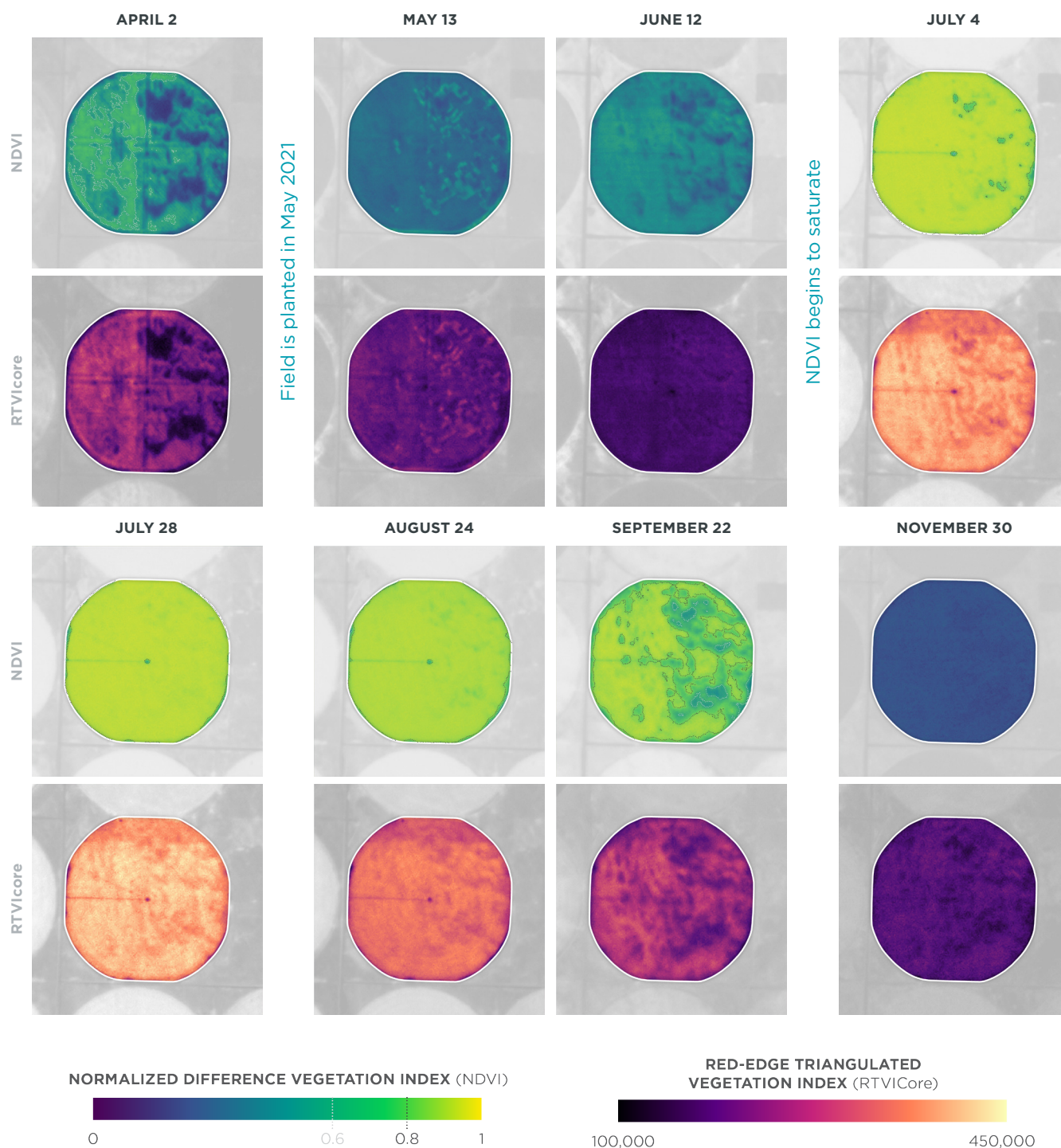
While many factors shape farming decisions, the addition of the red edge could alter how to control sprinklers throughout the season. It might also help setting up management zones, or understand how field trials are progressing. The red edge band suggests something is happening in the northern part of the field, focusing attention and resources on problem areas. This helps narrow down all the places where attention is spent early enough for proper intervention.



¹ RTVCore = (100*(NIR - RedEdge) - 10*(NIR - Green))

USE CASE

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As the growing season progresses, NDVI has a tendency to saturate. This is demonstrated in the pairs of images beginning on July 4 through September 22. The RTVCore index, which uses the red edge band, shows subtler differences in plant health, which may be cause for further inspection and in certain cases greater application of water.

SEE YOUR FIELDS IN A NEW WAY

Take a fresh approach to monitoring your fields and operations

Planet offers customers high-frequency, global imagery with eight spectral bands, including red edge, in our flagship Monitoring product. Learn more at planet.com/agriculture