

# JOINT UAS FIELD PROJECT OVERVIEW

KANSAS STATE UNIVERSITY | AGJUNCTION, INC.

CONSORTIUM FOR KANSAS UNMANNED SYSTEMS CONFERENCE  
MANHATTAN, KS

OCTOBER 15-16, 2013



## CONFERENCE DISCUSSION AGENDA

- **A little background on AgJunction**
- Project objectives
- Project team
- Field work overview
- Data examples
- Post-harvest analysis





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# Outback<sup>®</sup>

GUIDANCE



Outback MAX



Outback STX



Outback Sts



Outback S-Lite



eDrive X



eDrive TC



eDrive w/VSi



AC110



A320-A321



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# GNSS DIVISION



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# SATLOC®



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# Cloud Services



Designed to make precision agriculture as simple and profitable as possible.



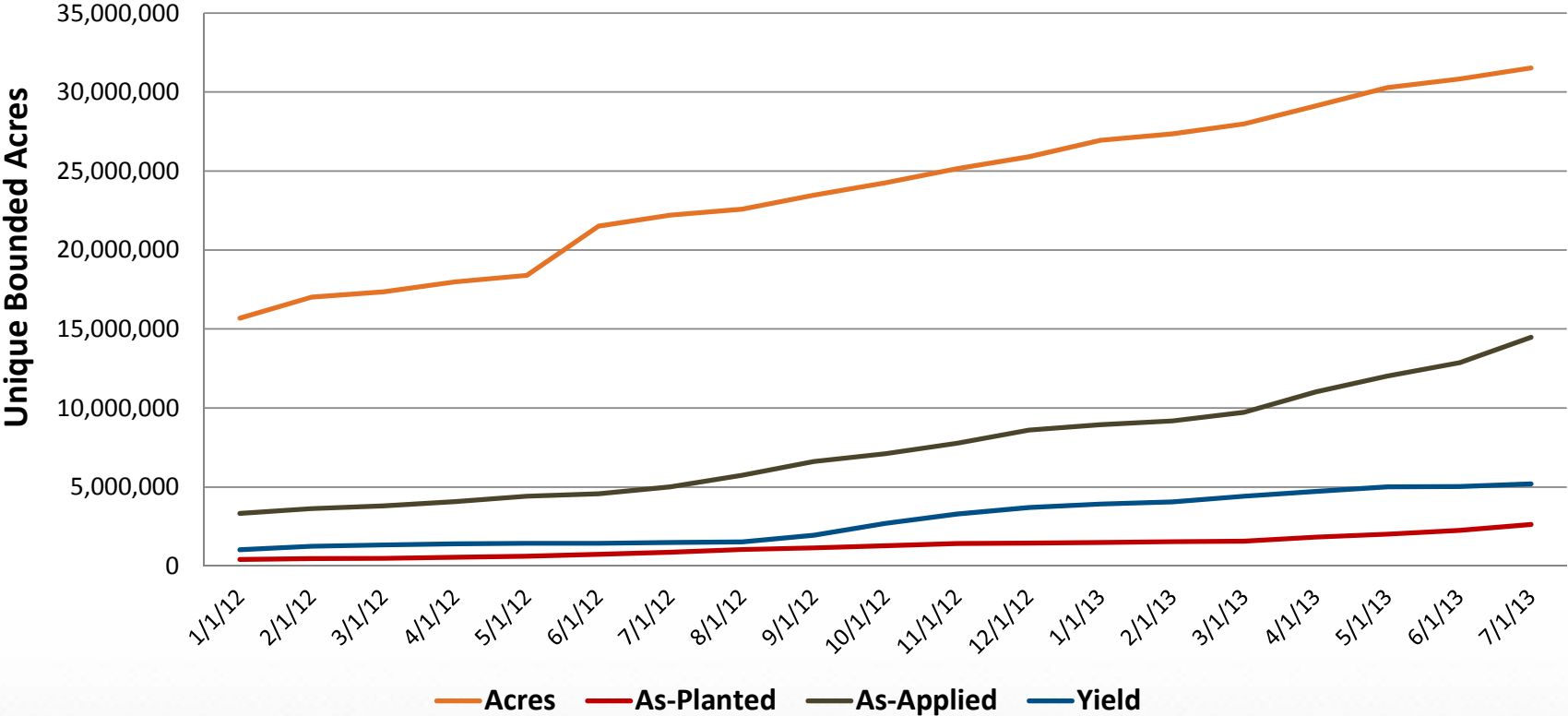
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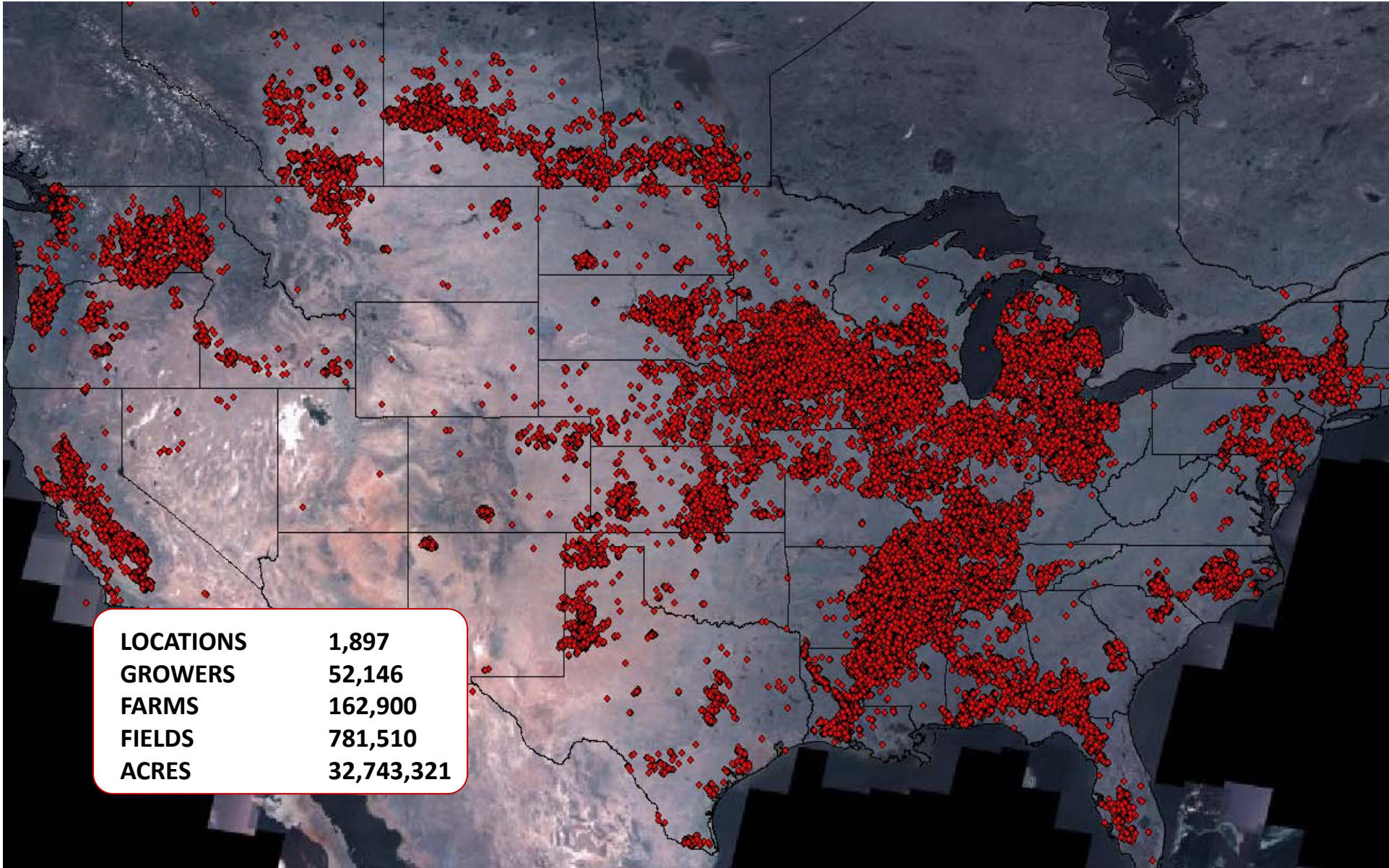
# AJCS SYSTEM UTILIZATION MONITOR



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## UAS PROJECT OBJECTIVES

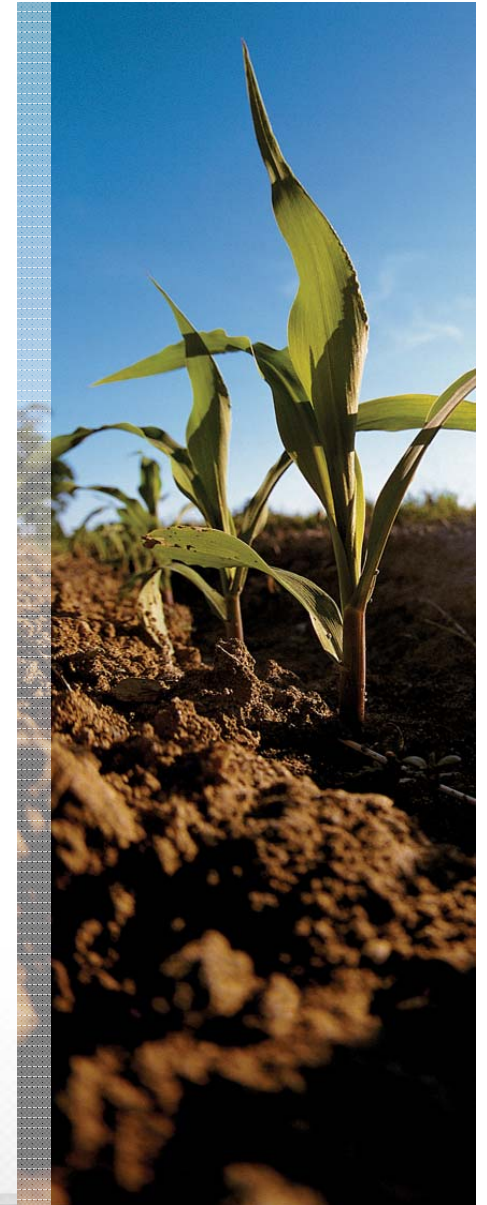
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## Project Background/Objectives

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- **Collect ground data and satellite/UAS imagery for commercial production fields in Brown County**
- **Fly multiple missions with the Zephyr aircraft over the same fields and fuse datasets**
- **KSU and AgJunction jointly explore UAS data in combination with other available data:**
  - To better understand/explain in-field variability,
  - To potentially increase forecast accuracy, and
  - To improve decision-making (increased returns)



## UAS PROJECT TEAM

- A little background on AgJunction
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## Project Team

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### **Mark Blanks**

KSU UAS Program Manager

### **Kirk Demuth**

KSU UAS Chief Pilot

### **Kurt Barnhart, PhD**

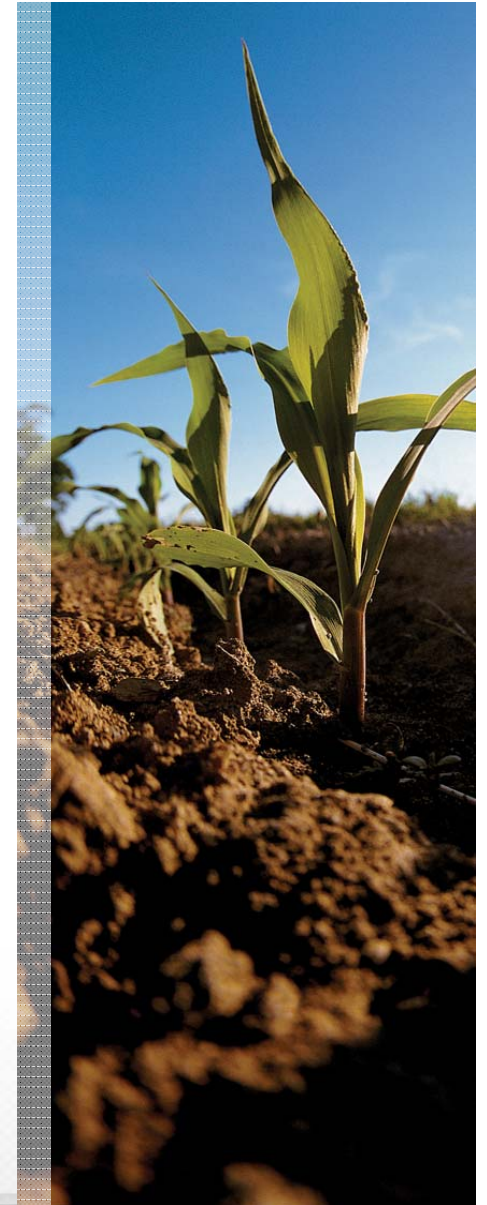
Executive Director, Applied Aviation Research Center

### **Deon Van Der Merwe, PhD**

Head KSU Veterinary Medicine Toxicology

### **Kevin Price, PhD**

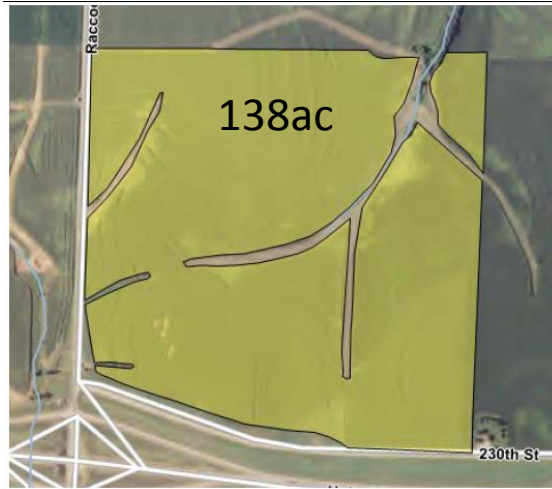
Professor, Agriculture/Nat. Resources/Remote Sensing/GIS



## FIELD WORK OVERVIEW

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TOTAL ~443 acres



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## DATA EXAMPLES

- A little background on AgJunction
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- **Data examples**
- Post-harvest analysis & next steps



**Field:** N/A  
**Farm:** N/A  
**Area:** 72.00  
**County:** Brown  
**State:** KS  
**Township Name:** Irving

**Date:** 07/16/2013

**FLIGHT DATES**

7/12/2013

7/16/2013

7/24/2103



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**Field:** N/A  
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**Area:** 72.00  
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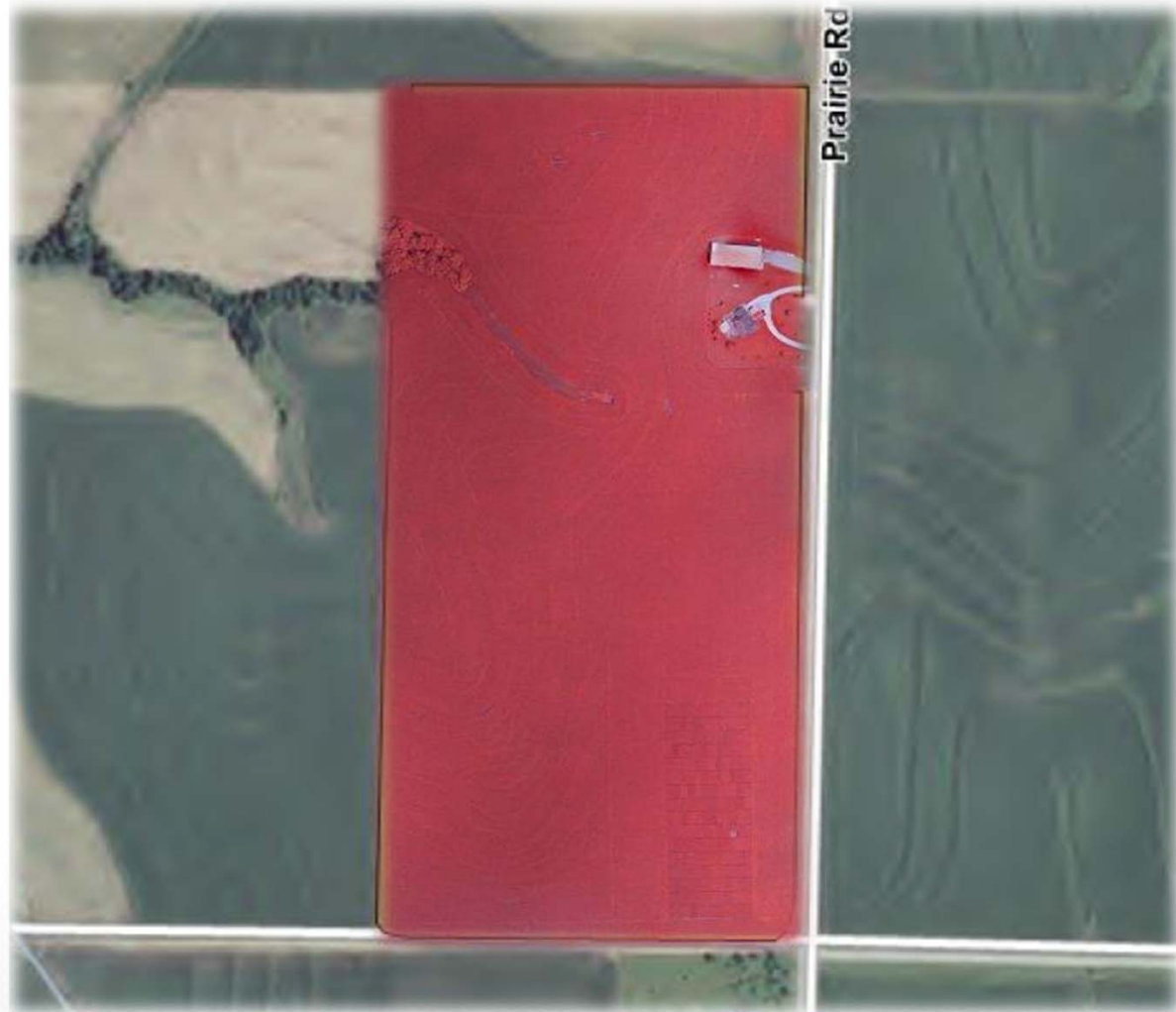
**Date:** 07/16/2013

**IMAGE TYPE**

UAS NIR

**RESOLUTION**

4.5cm



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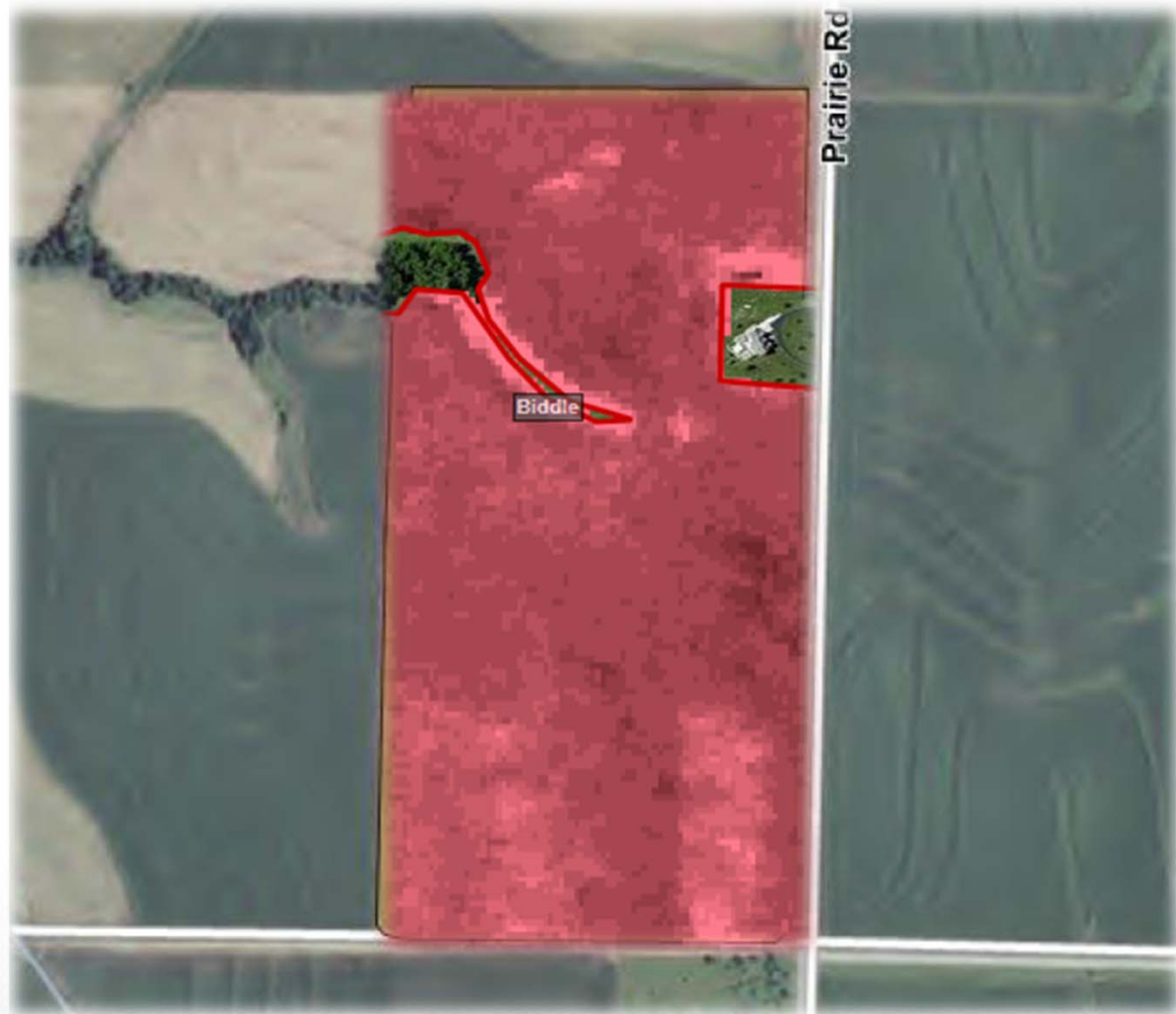
**Date:** 07/14/2013

**IMAGE TYPE**

Satellite (Rapid Eye)

**RESOLUTION**

6.5m



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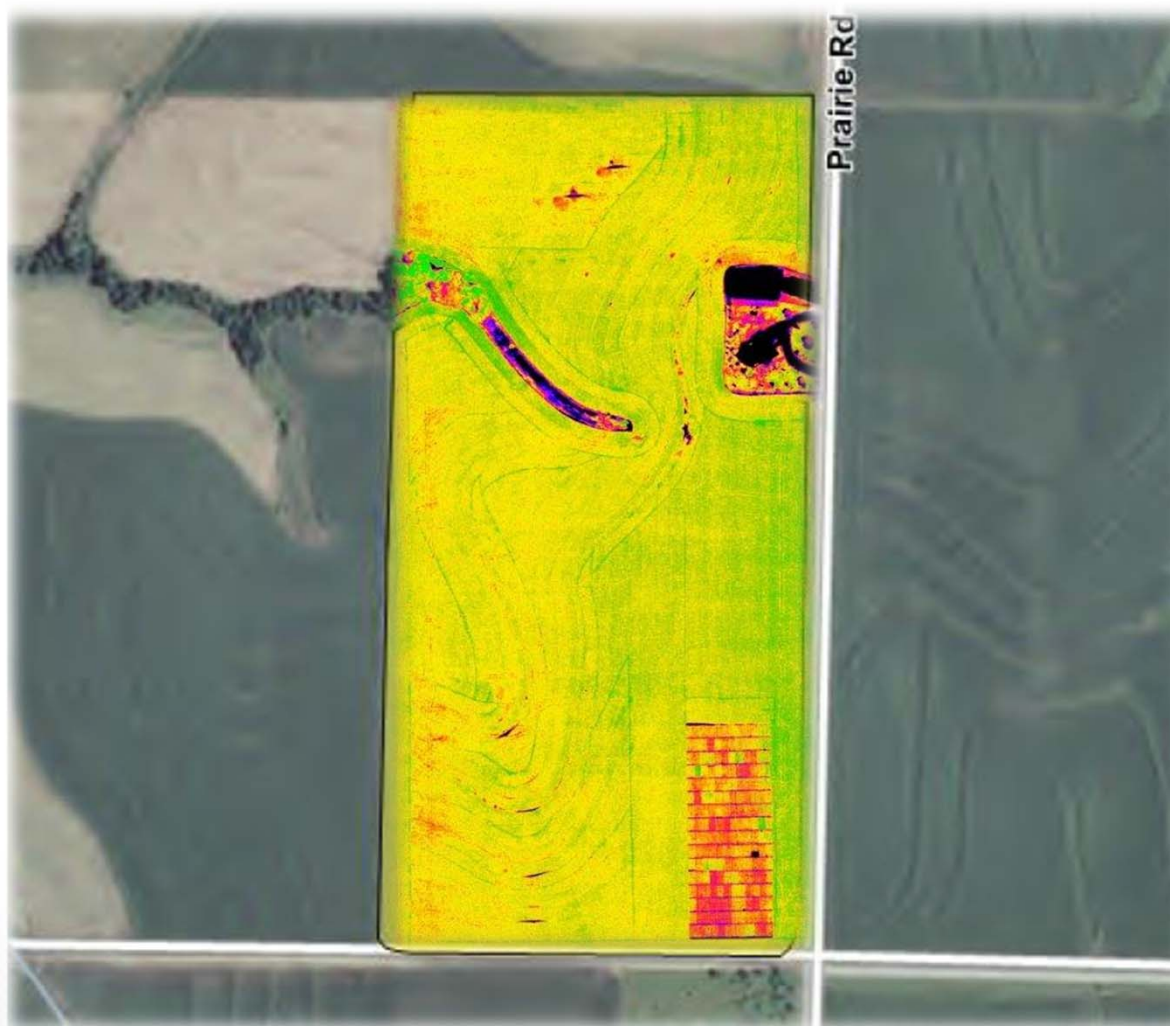
**Date:** 07/16/2013

**IMAGE TYPE**

UAS Enhanced NDVI  
(AgPixel)

**RESOLUTION**

4.5cm



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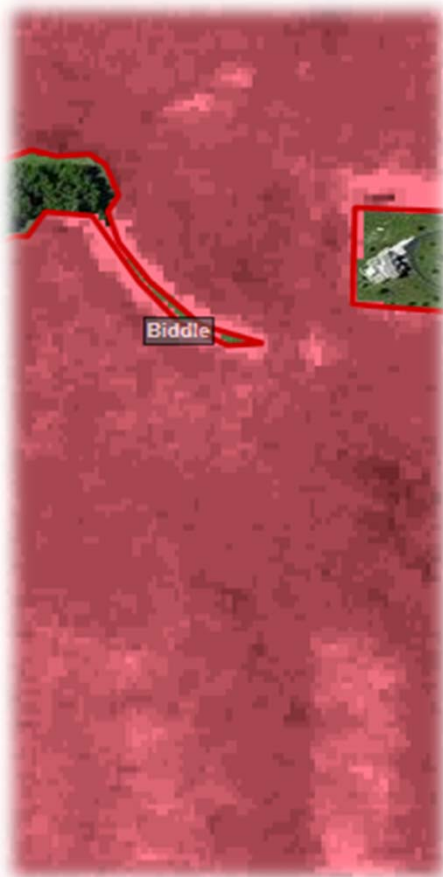
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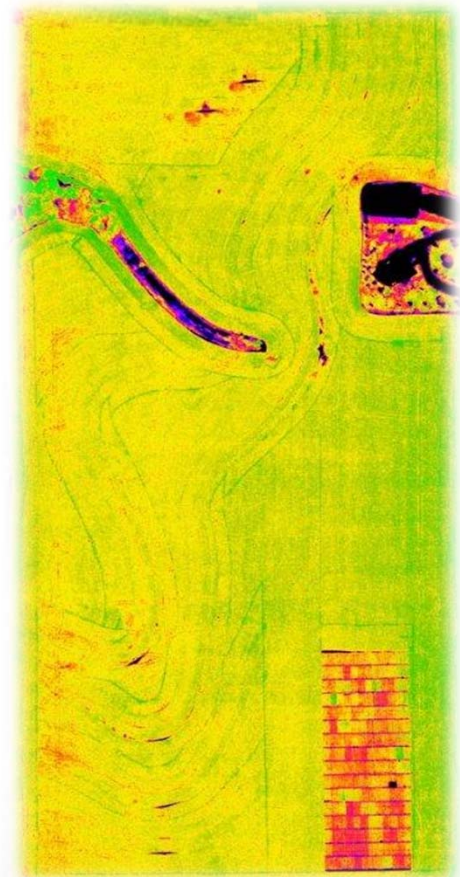




UAS NIR (4.5cm)



Satellite (Rapid Eye) (6.5m)



UAS Enhanced NDVI (4.5cm)

## DATA EXAMPLES

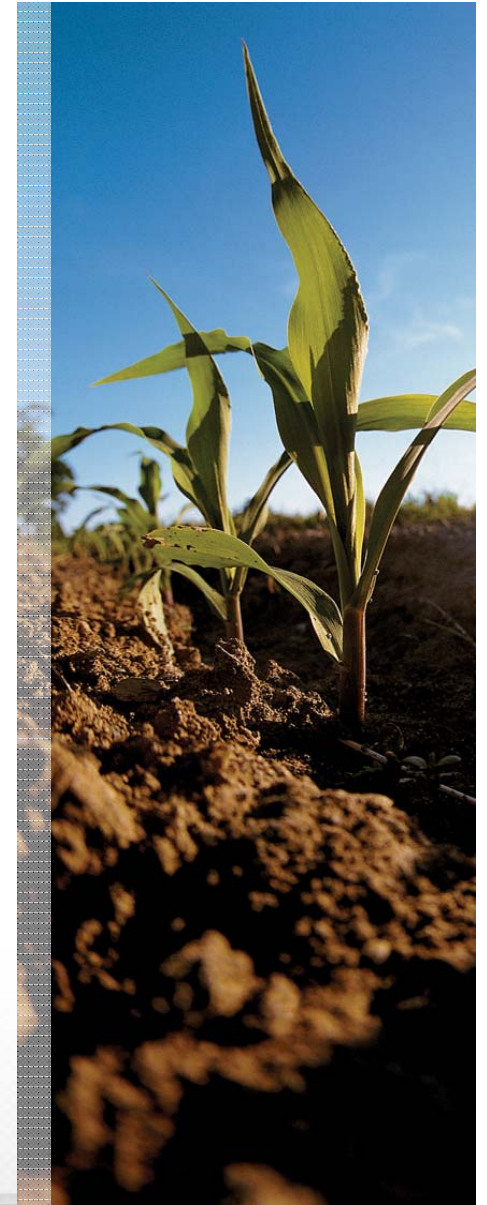
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## Next Steps / Post Harvest Analysis

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- **Harvest Data!!!! (raw data from combine)**
- **KSU and AgJunction jointly explore UAS data in combination with other available data:**
  - To better understand/explain in-field variability,
  - To potentially increase forecast accuracy, and
  - To improve decision-making (increased returns)





*AgJunction*<sup>®</sup>

Simply connected.