

# Agricultural Classification of Multi-Temporal MODIS Imagery in Northwest Argentina Using Kansas Crop Phenologies

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# RESEARCH QUESTIONS

Can I...

- ▶ develop a phenological classification toolset?
- ▶ extract crop signatures from Kansas data?
- ▶ classify an Argentina study area with the Kansas signatures?

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# OUTLINE

1. Background
2. Study Areas
3. Data and Methods
4. Results and Discussion
5. Concluding Remarks

BACKGROUND

# DEFORESTATION IN ARGENTINA

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## DEFORESTATION IN ARGENTINA

**Table:** Deforestation in Argentina, 2006 to 2011

<b>Time Period</b>	<b>Hectares Deforested</b>
2006 to <i>Ley de Bosques</i> (2007)	573,296
Ley de Bosques to OTBN (2009)	473,001
OTBN to 2011	459,108
<b>Total</b>	<b>1,505,405</b>

# DEFORESTATION IN ARGENTINA

- ▶ Deforestation has remained extremely high
- ▶ The effect of the the *Ley de Bosques* has been questioned

## SOY AND ITS EFFECTS

- ▶ Argentina's soybean cultivation has continually increased
  - ▶ 5 million ha in 1993 to 19 million ha in 2011

## SOY AND ITS EFFECTS

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- ▶ Over 99 percent of Argentine soy is genetically modified
  - ▶ Resistance to glyphosate = heavy pesticide use
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## Questions

- ▶ What if two crops have similar VI values on a single date?
- ▶ How to determine the VI values of a crop in an image?



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Use imagery from multiple dates.

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# PHENOLOGICAL CLASSIFICATION

Graphics/wardlowCropSignatures.png

(From Wardlow and Egbert 2005)



# PHENOLOGICAL CLASSIFICATION

## Question

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## Answer

Existing approaches require training sites.

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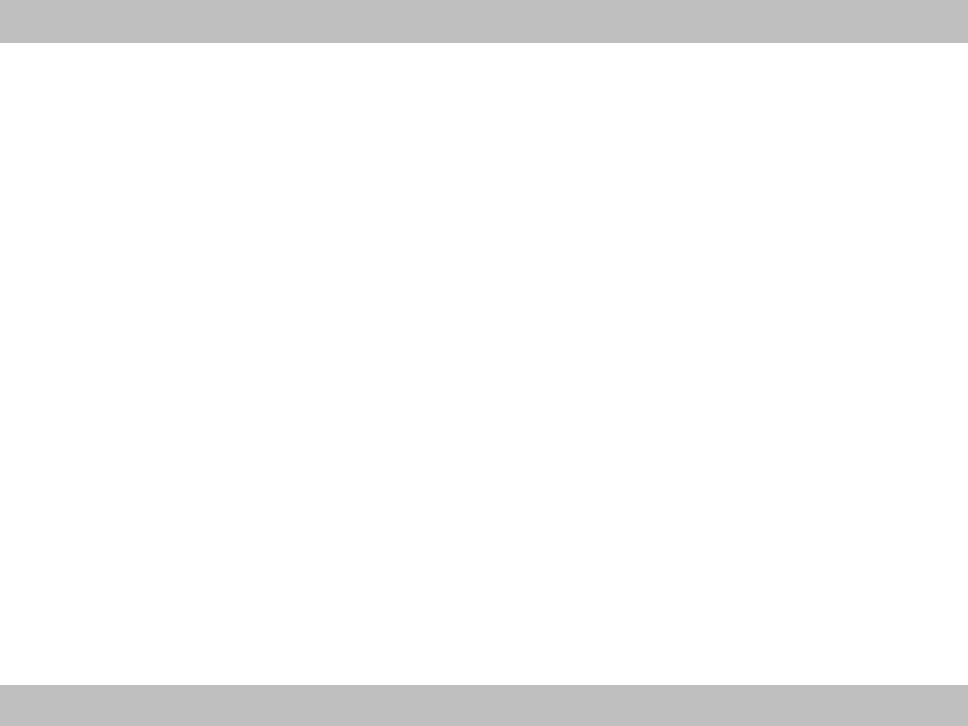
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# PHENOLOGICAL CLASSIFICATION

## Problem

What if you don't have training sites?

# STUDY AREAS



# DEPARTMENT OF PELLEGRINI

# DATA AND METHODS

## RESULTS AND DISCUSSION



## CONCLUDING REMARKS