

# BARLEY BRAIN

PREDICTING THE FUTURE OF YOUR FIELD

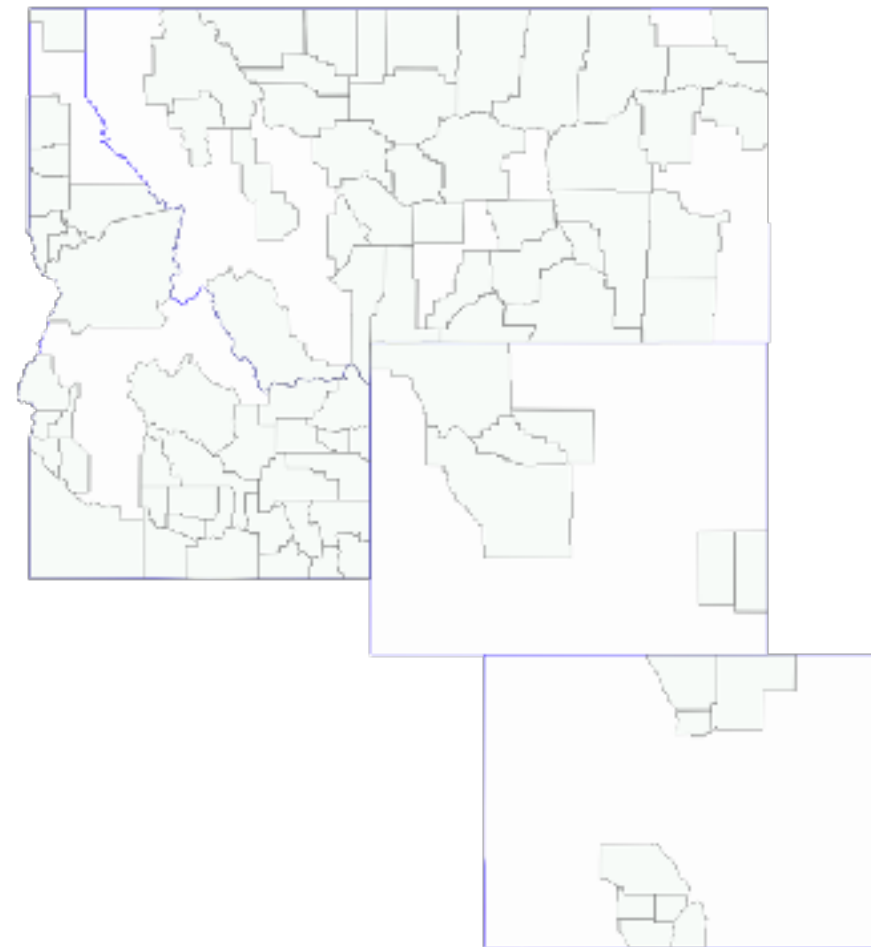


# INTRO

## What is Barley Brain

Barley Brain is a computer model to forecast regional barley yields in Colorado, Wyoming, Idaho and Montana.

The model aggregates satellite images, crop information, historic weather, and reported yield from 2010 to present to forecast future yields on a county basis



# DATA

## Public Data Sources

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- National Agricultural Statistics Service →
  - Yearly reported crop data
  - <https://www.usda.gov/wps/portal/usda/usdahome>



- NASA LANDSAT8 Satellite data →
  - Satellite image feed for field health analysis
  - [https://www.nasa.gov/mission\\_pages/landsat/main/index.html](https://www.nasa.gov/mission_pages/landsat/main/index.html)



- DARKSKY →
  - Historical and forecast weather (localized)
  - <https://darksky.net>

## Private Data Sources

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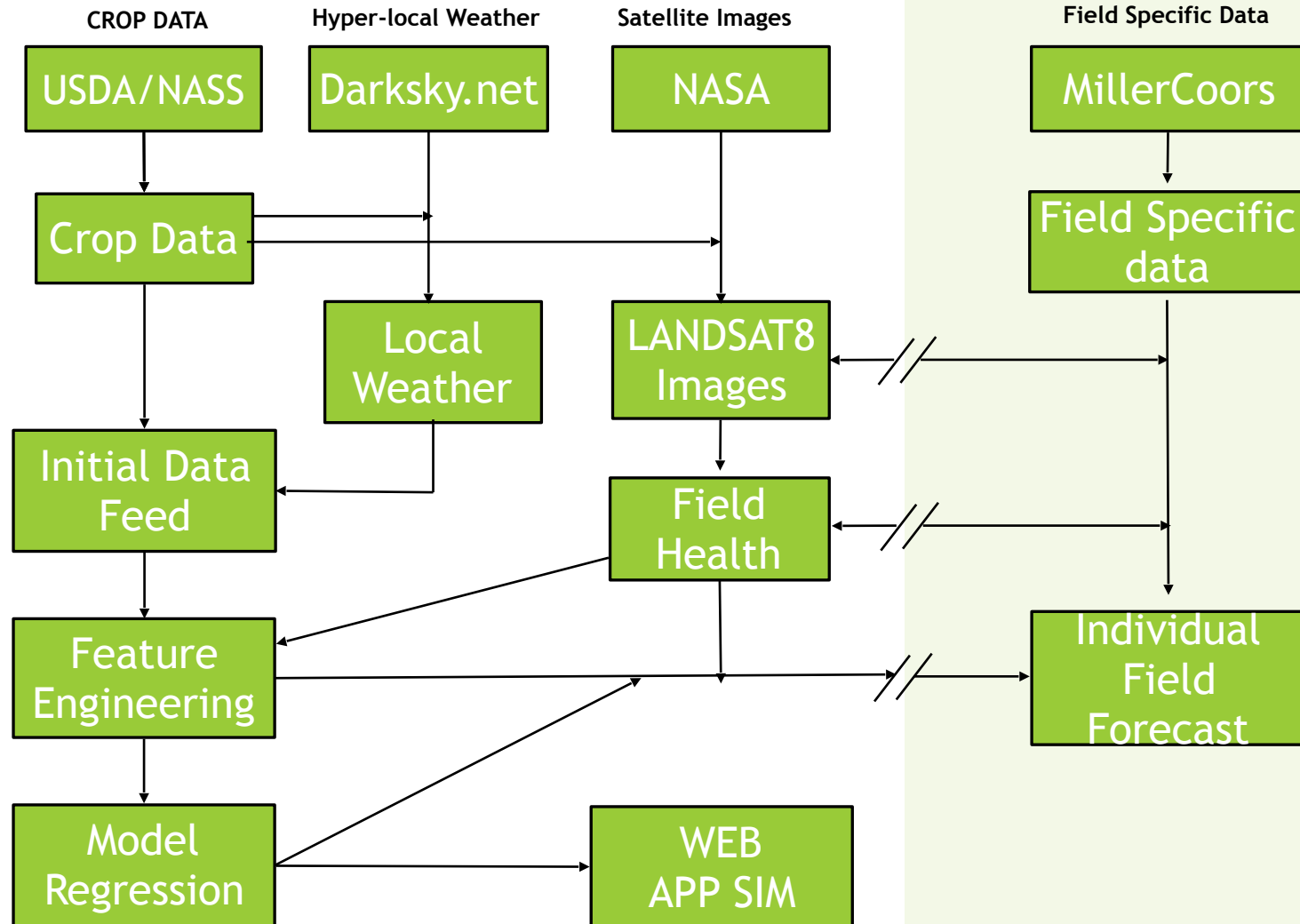
- **Miller-Coors**
  - Barley purchasing and horticulture group
  - Tribal knowledge on environmental factors for barley
  - <https://www.millercoors.com>

# Process

SIMPLIFY

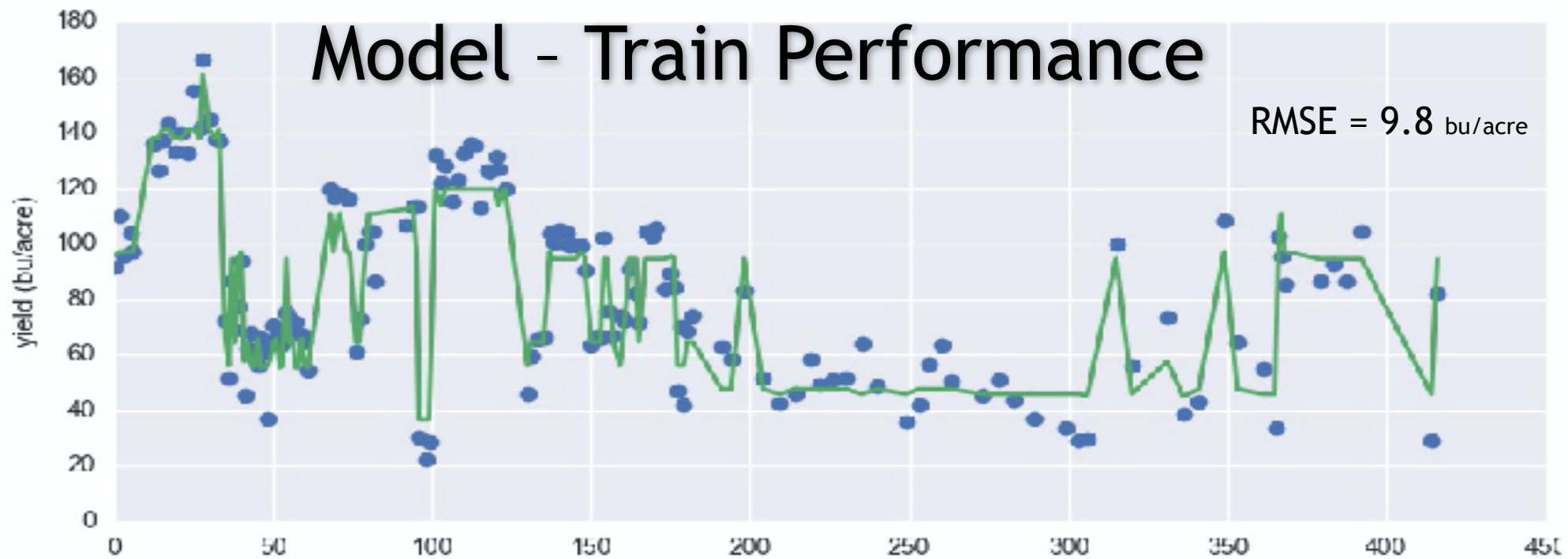
## Model - Public Side

## Private Side

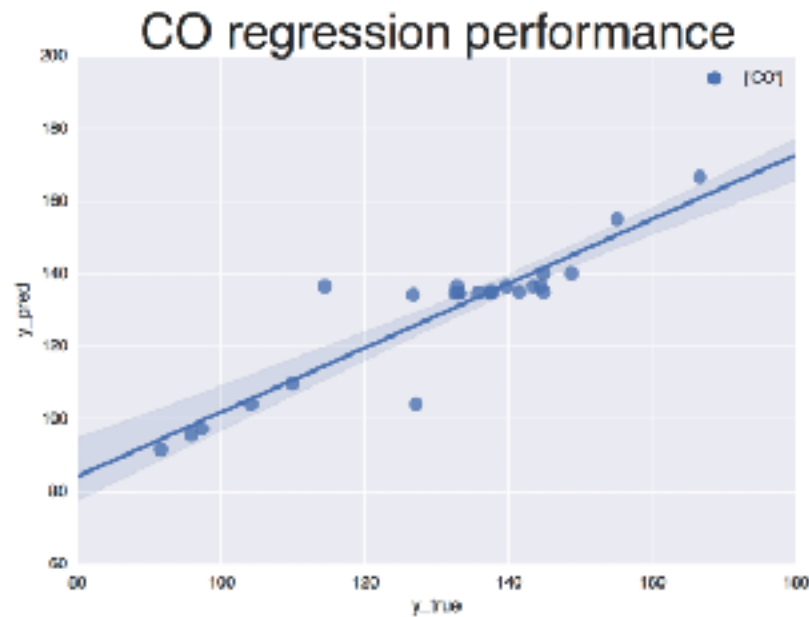




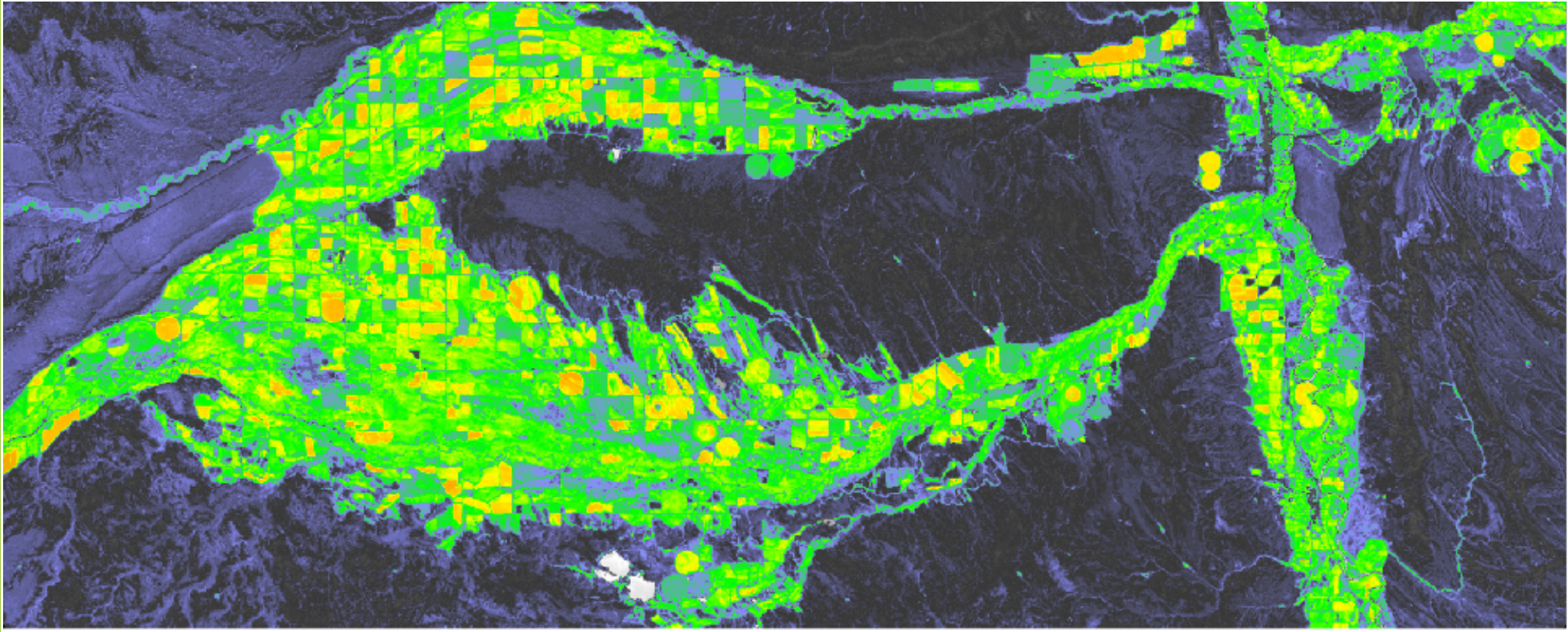
# Results



# Results

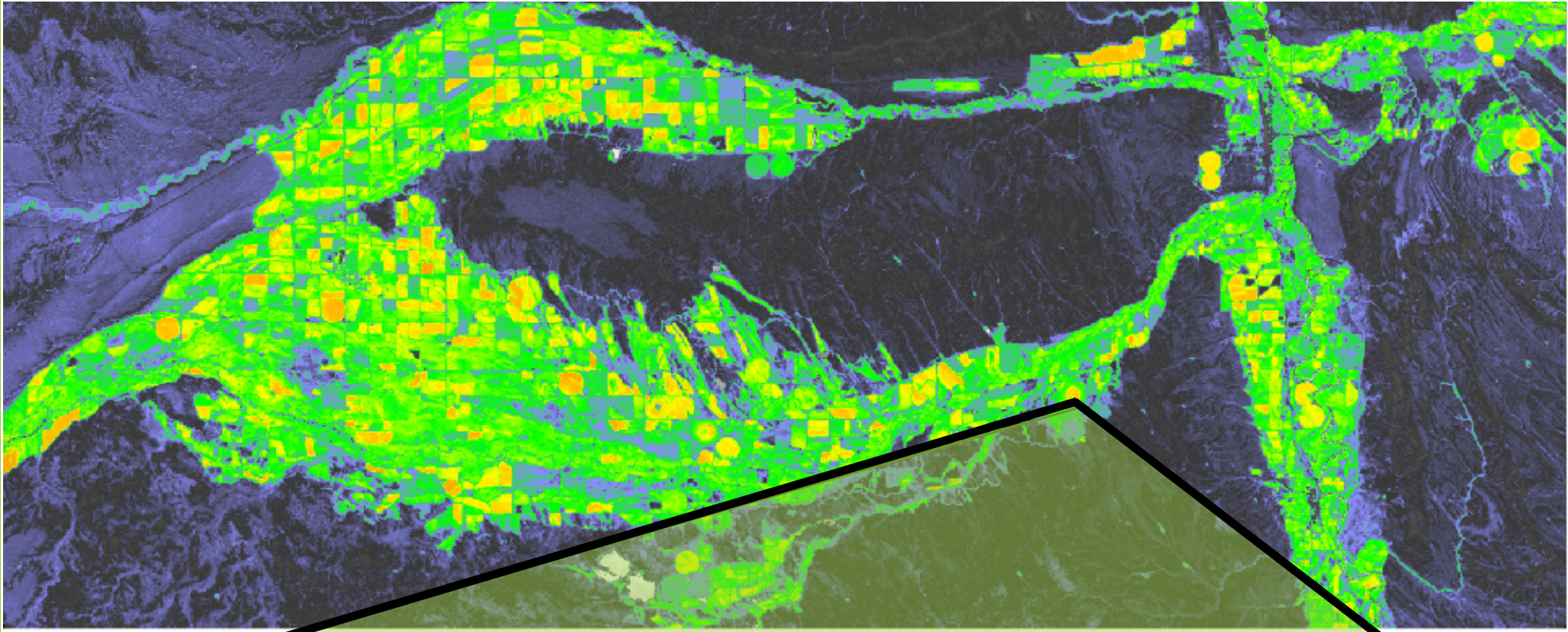


# Satellites



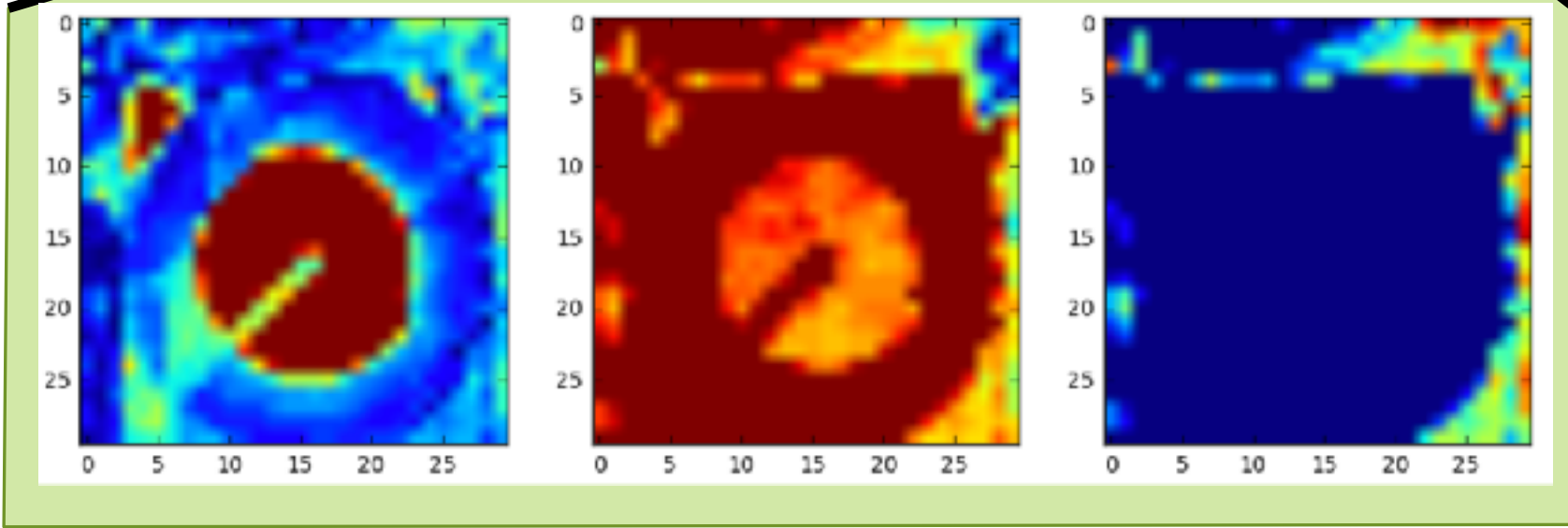
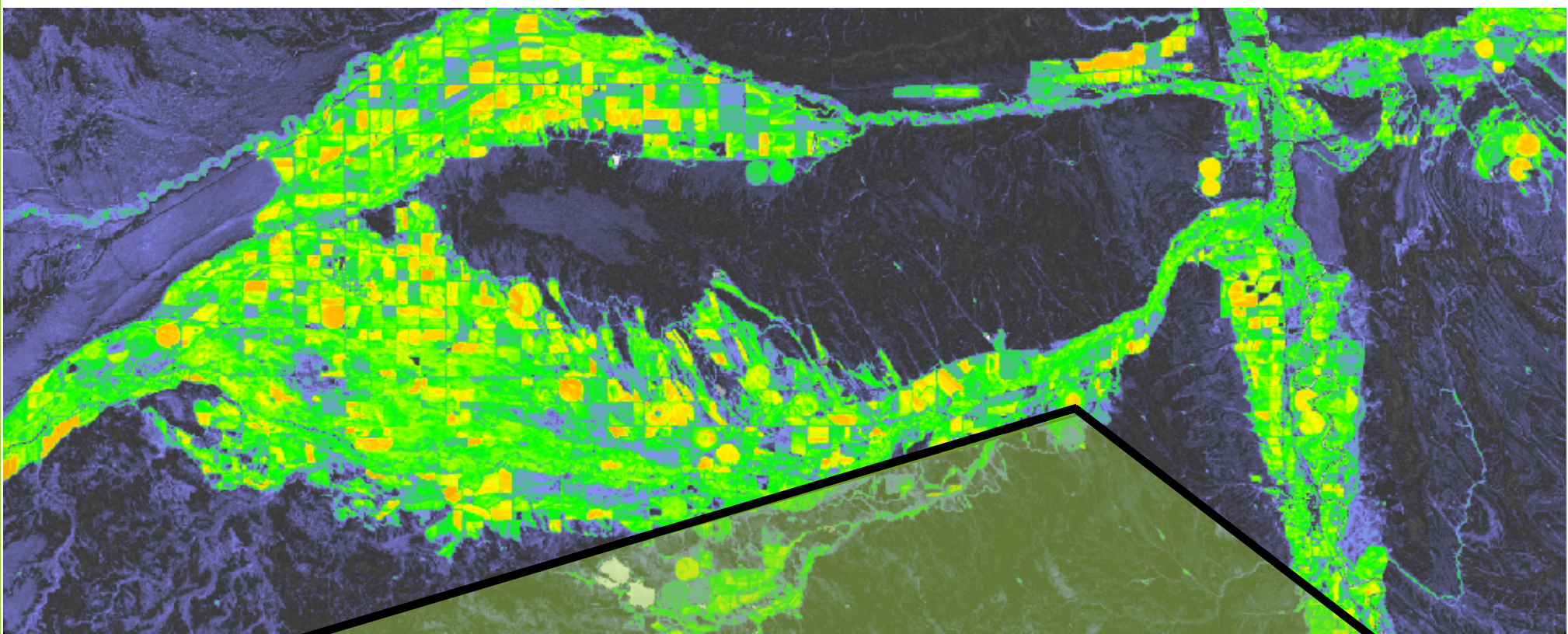


# Satellites





# Satellites



Thanks!

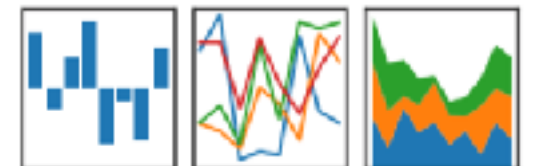
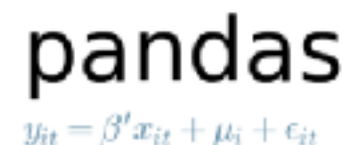
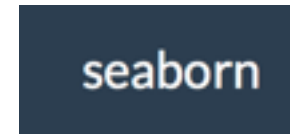
# Contact Information

**Robert Wade**

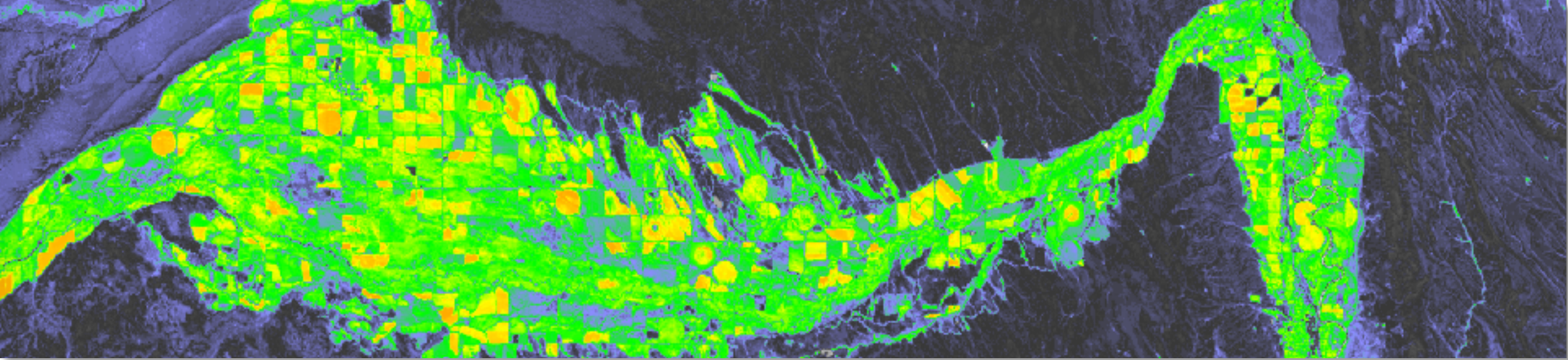
Linkedin: [Linkedin.com/in/wadere](https://www.linkedin.com/in/wadere)

GitHub: [GitHub.com/wadere/Barley\\_Brain](https://github.com/wadere/Barley_Brain)

Web App: [BarleyBrain.com](https://BarleyBrain.com)







# APPENDIX



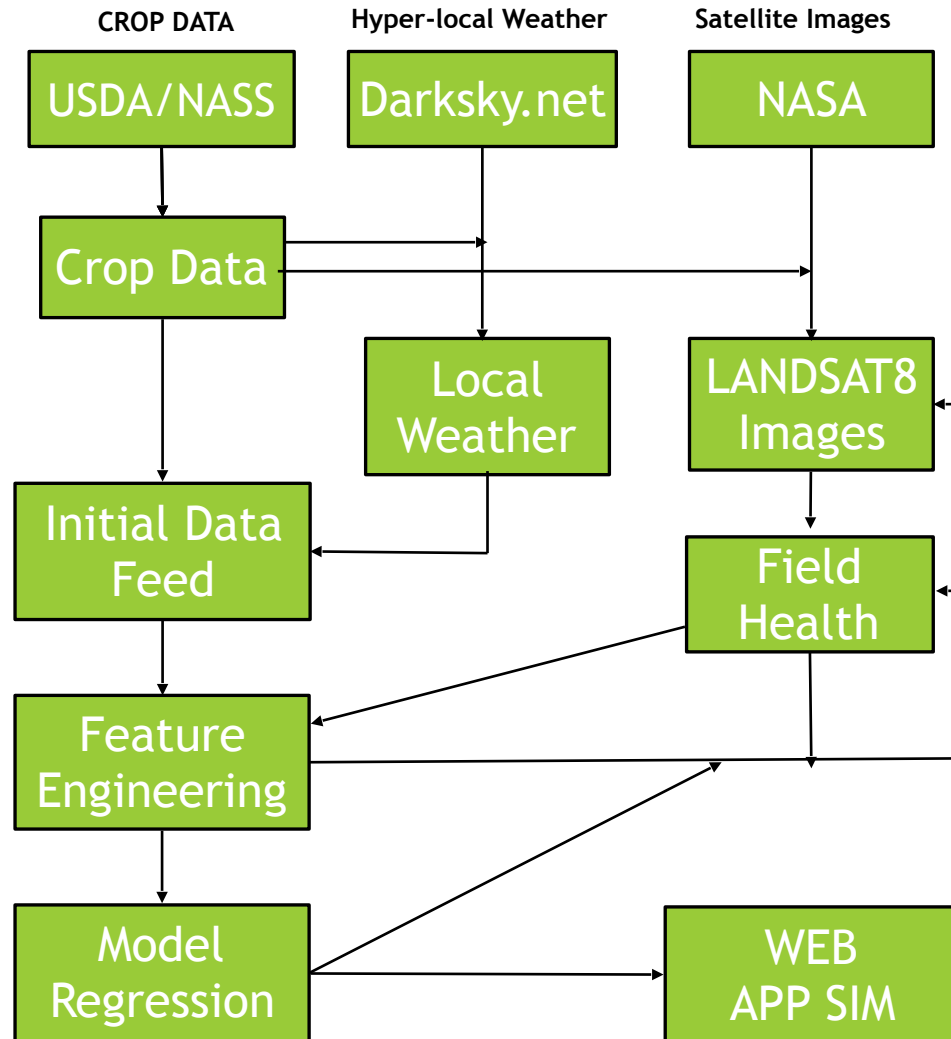


# Process

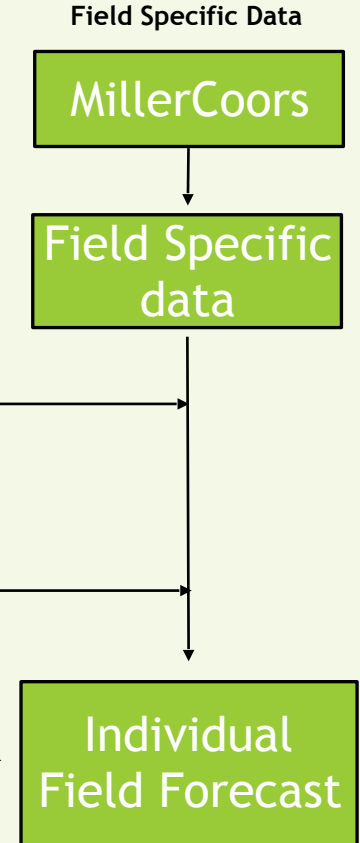
SIMPLIFY



## Model - Public Side

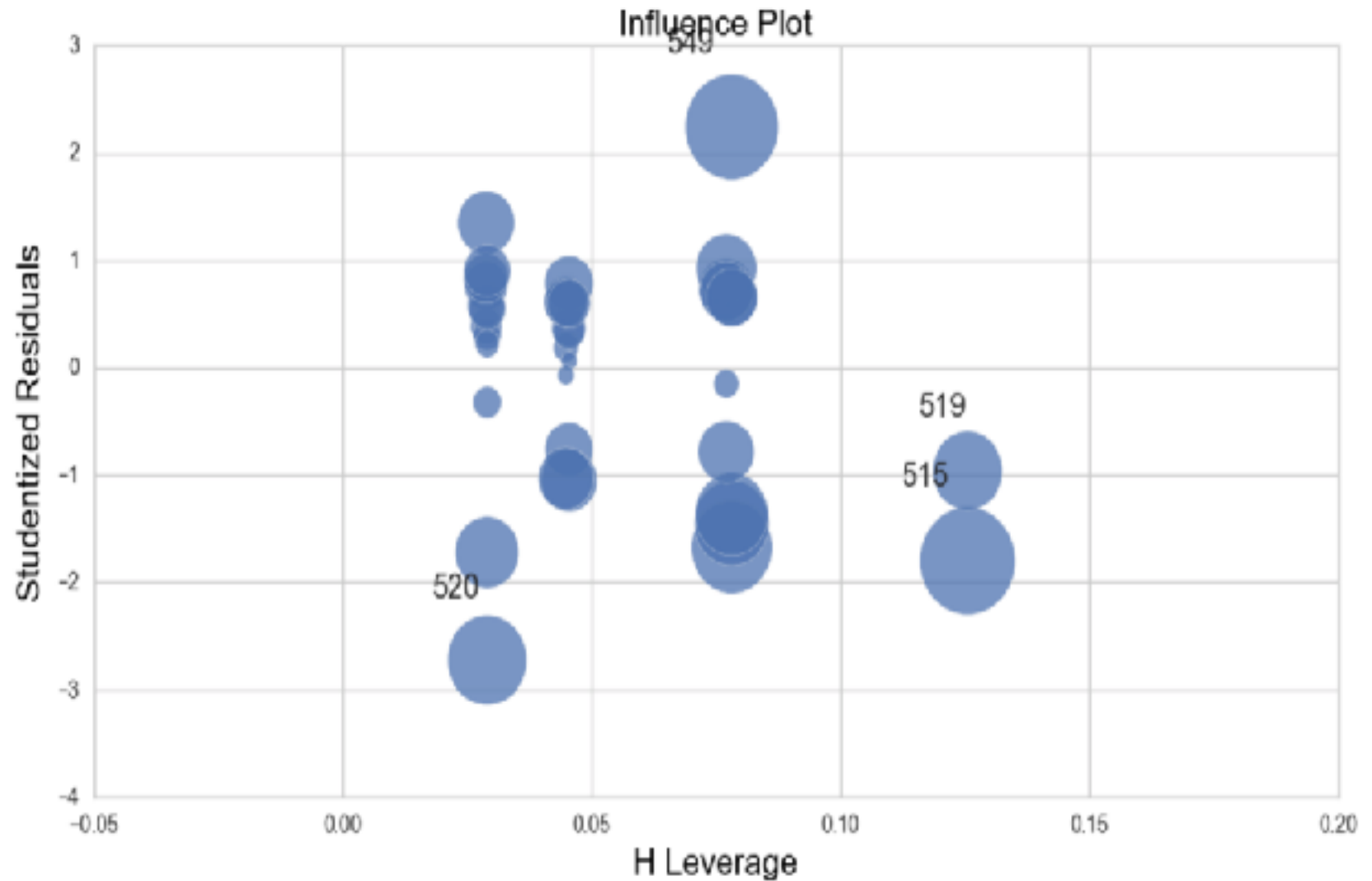


## Private Side



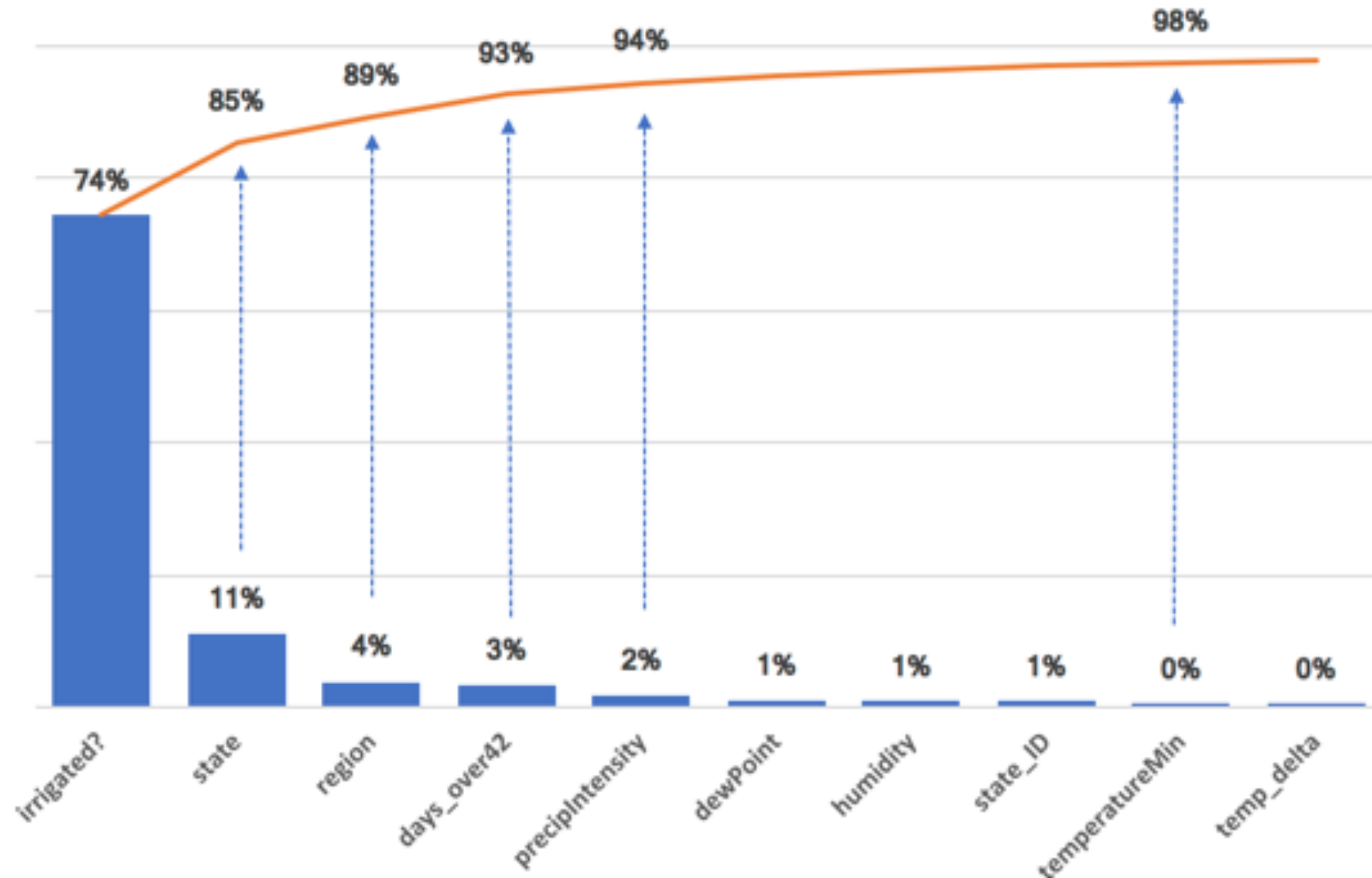
# INFLUENCE

# INFLUENCE ANALYSIS



# Feature Importance

## Feature Analysis





# Feature Importance

## Impact of Irrigation

