

# Crop Yields

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# Recap: Crop yields and what we do with them

## What we do now:

- Combine multiple data sets to get unique values for every crop in every county

## What we want:

- Long-term average behavior
- Remove impacts of annual weather patterns (e.g. drought)

## How can we get there:

- Long-term trend in yields

# Where does yield data come from?

National Agricultural  
Statistics Service  
(NASS)

```
graph TD; NASS[National Agricultural Statistics Service (NASS)] --> Census[Five Year Census of Agriculture]; NASS --> Surveys[Annual Surveys];
```

The diagram is a flowchart with a light yellow background. At the top is a blue rectangular box containing the text 'National Agricultural Statistics Service (NASS)' in white. A vertical line descends from the bottom center of this box, then splits into two horizontal lines. These horizontal lines lead to two separate boxes below. The box on the left is dark grey and contains the text 'Five Year Census of Agriculture' in white. The box on the right is orange and contains the text 'Annual Surveys' in white.

Five Year Census of  
Agriculture

Annual Surveys

# Where does yield data come from?

## National Agricultural Statistics Service Information (NASS)

Five Year Census  
of Agriculture

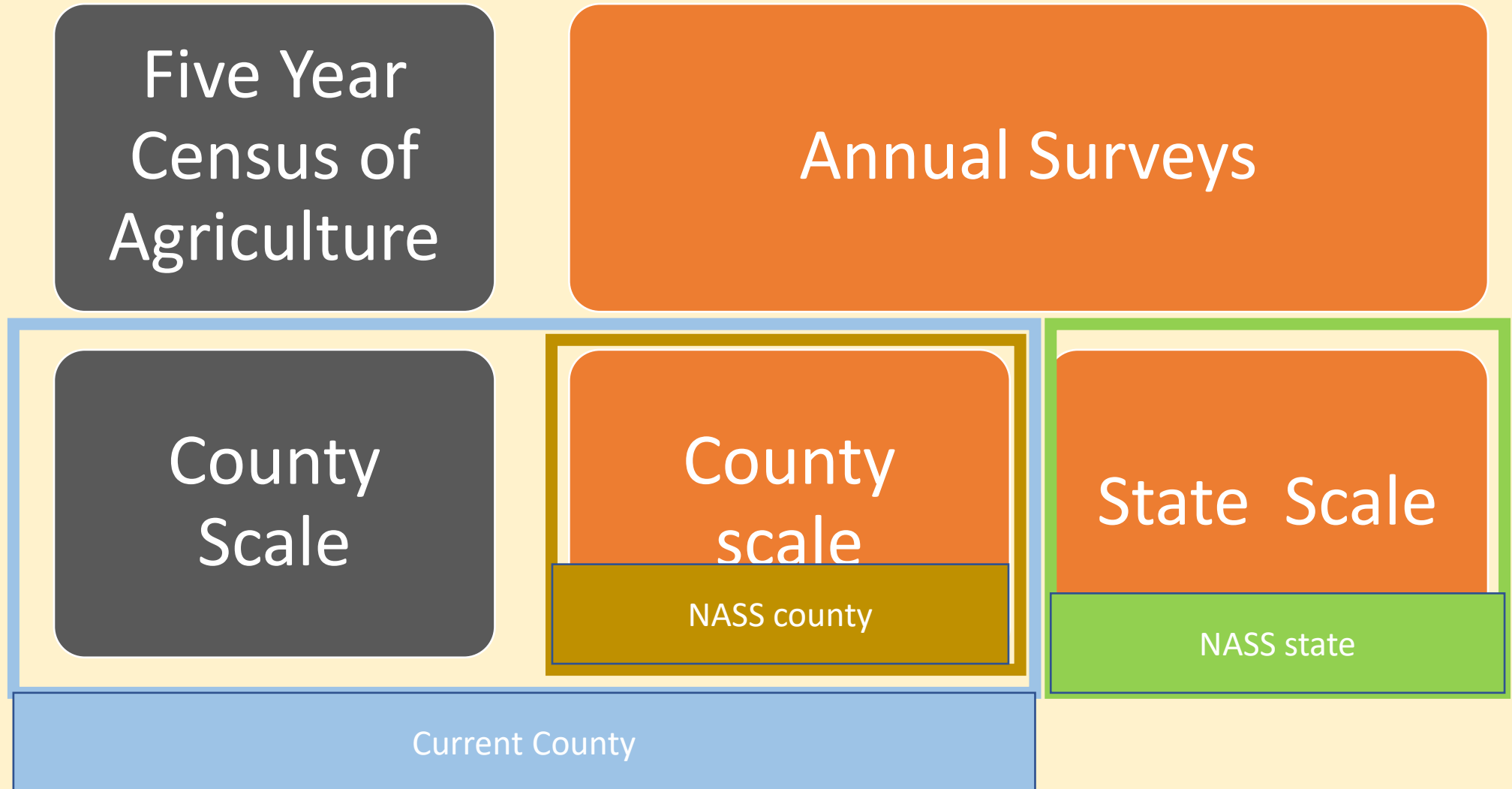
Annual Surveys

County Scale

County scale

State Scale

# Where does yield data come from?



# More on the data sources:

## NASS county

- Annual survey data for each county in the watershed

## NASS state

- Annual survey data for each state in the watershed

## Current County

- Existing method used in CAST which combines annual survey and census of agriculture data

# Pros and Cons of each data set:

## NASS County

### Pro

- County level
- Watershed coverage

### Con

- Null values are reported

## NASS State

### Pro

- Watershed coverage
- No null values reported

### Con

- State scale

## Current County

### Pro

- Combines multiple data sets
- No null values

### Con

- Data requires manipulation

# How did we compare these data?

## Selected crops

- Corn
- Soybeans
- Alfalfa Hay

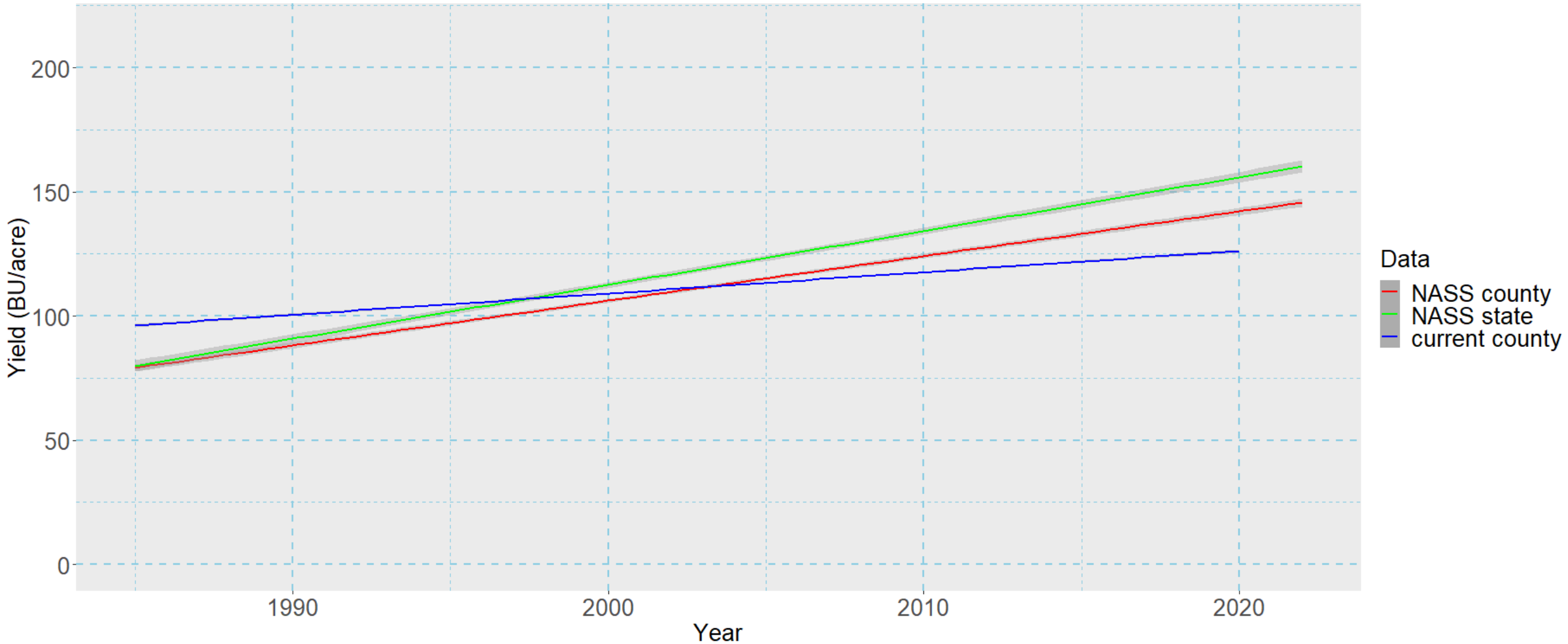
## Linear regression

- 1985-2022



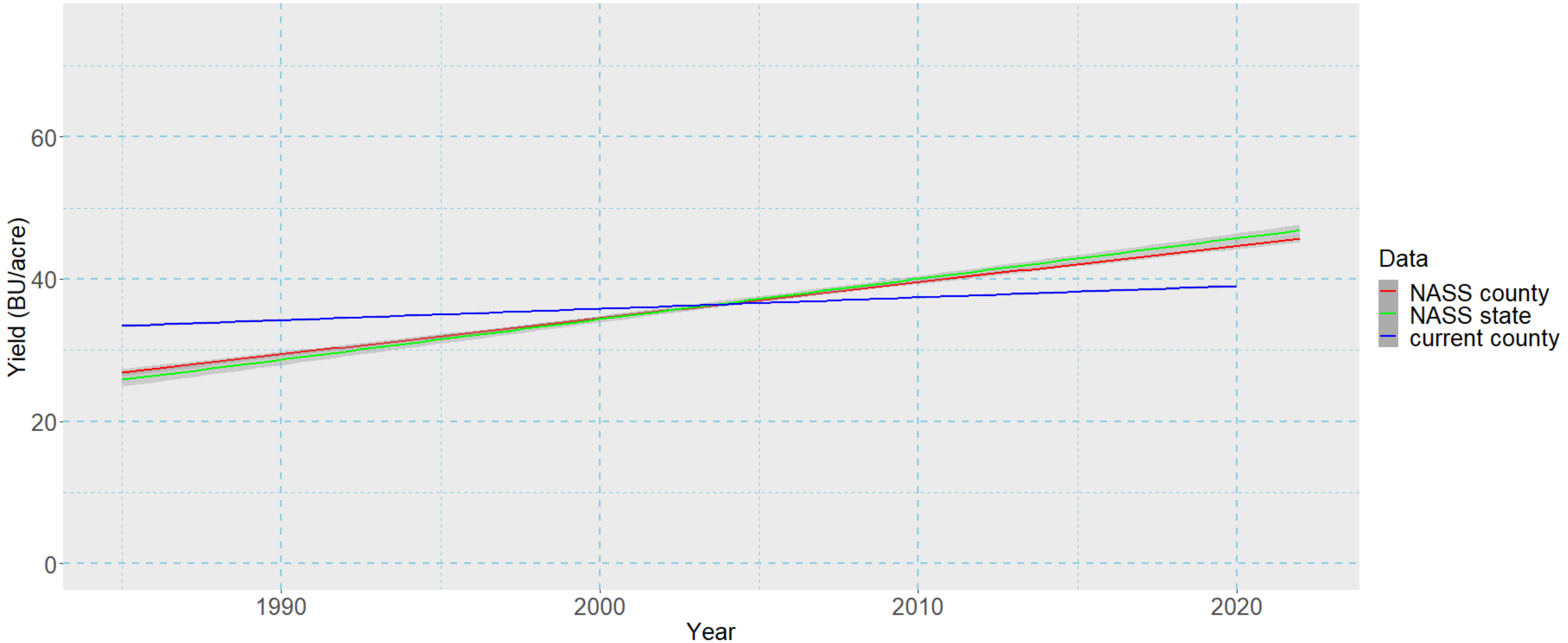
# Trends: Corn

Yield trend comparison for state and county level data for Corn



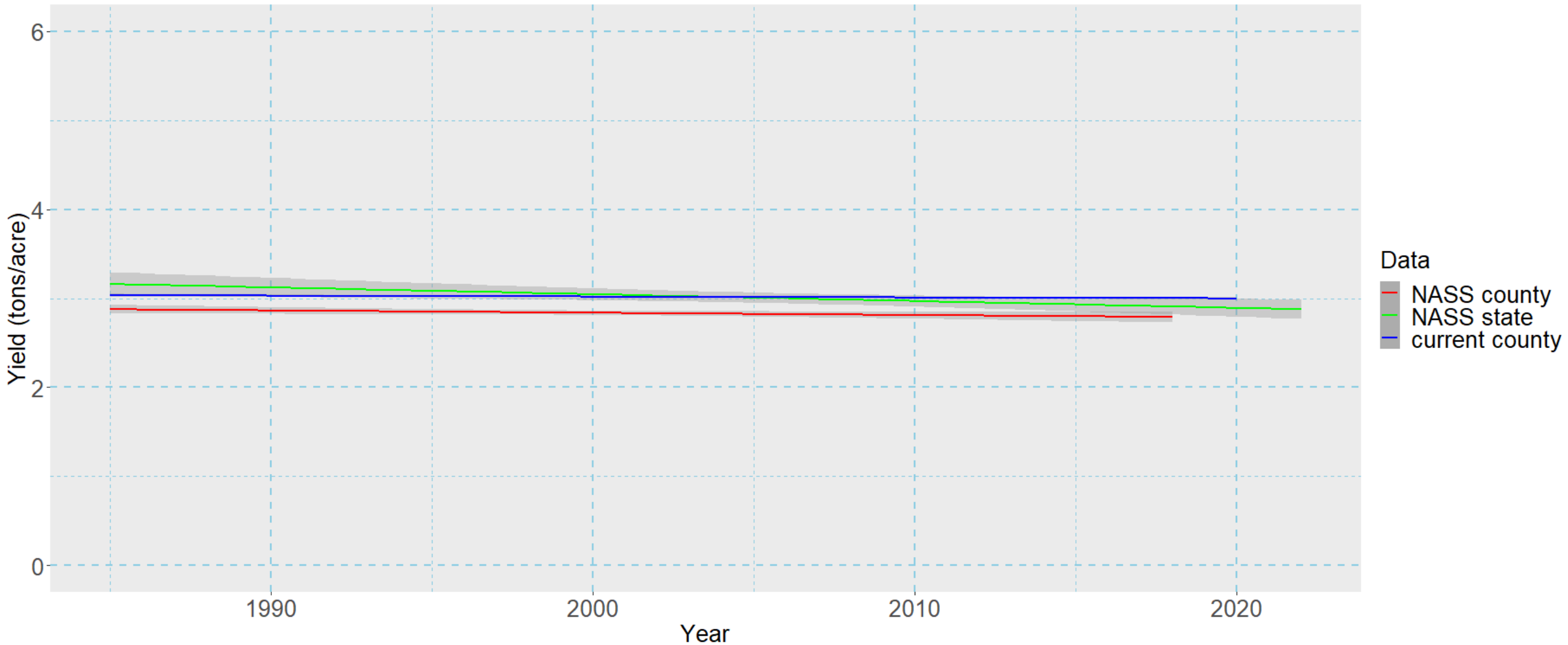
# Trends: Soybeans

Yield trend comparison for state and county level data for Soybeans



# Trends: Alfalfa Hay

Yield trend comparison for state and county level data for Alfalfa Hay



# Takeaways

## Raw Annual NASS trends:

- Have gaps in County data
- Have higher yields in several cases (Corn and Soybeans)

## Comparing the Current data to the Raw data trends:

- Both raw trends have higher uncertainty vs the current method

Questions?