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

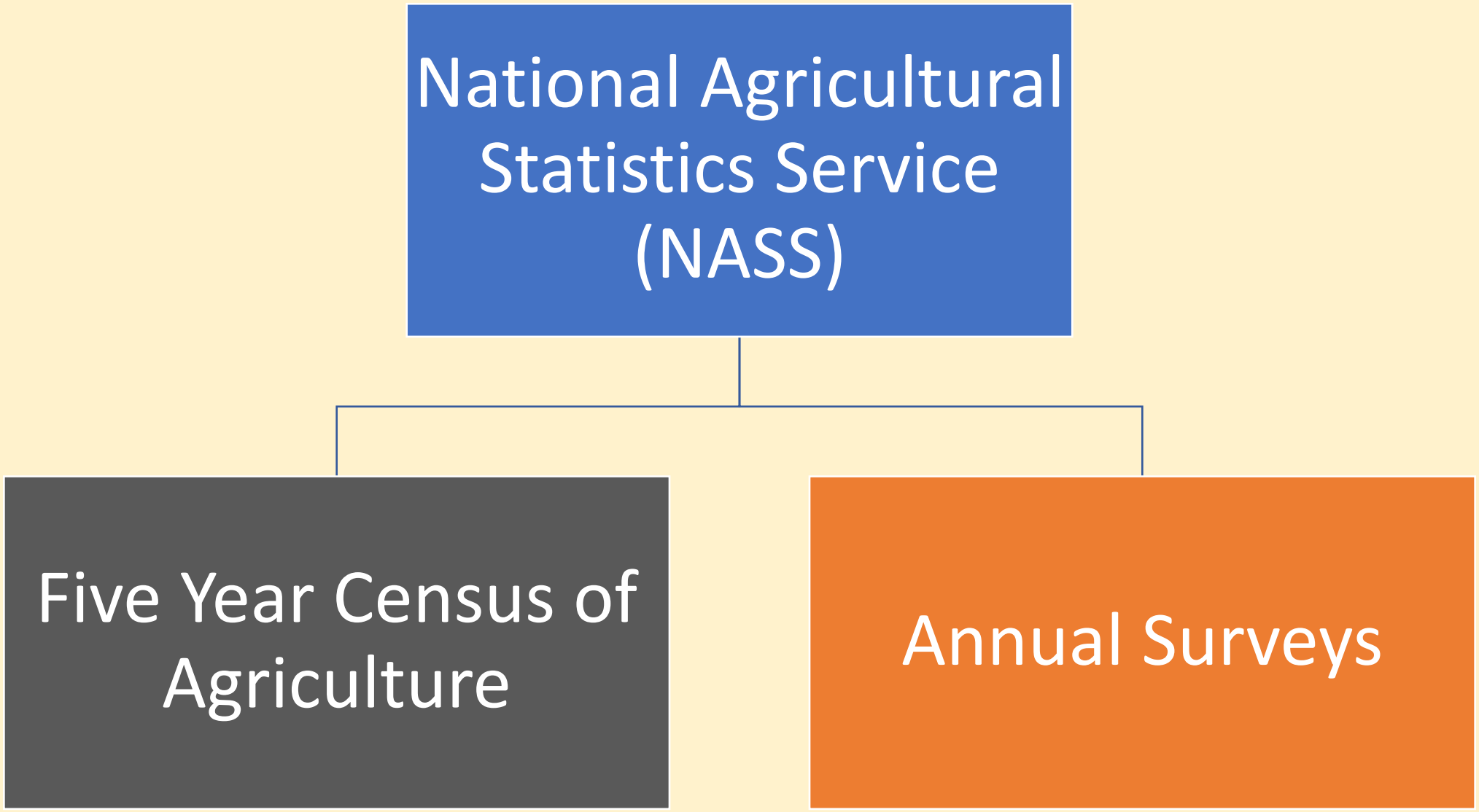
What we want:

- 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?



Where does yield data come from?

National Agricultural Statistics Service Information (NASS)

Five Year Census of Agriculture

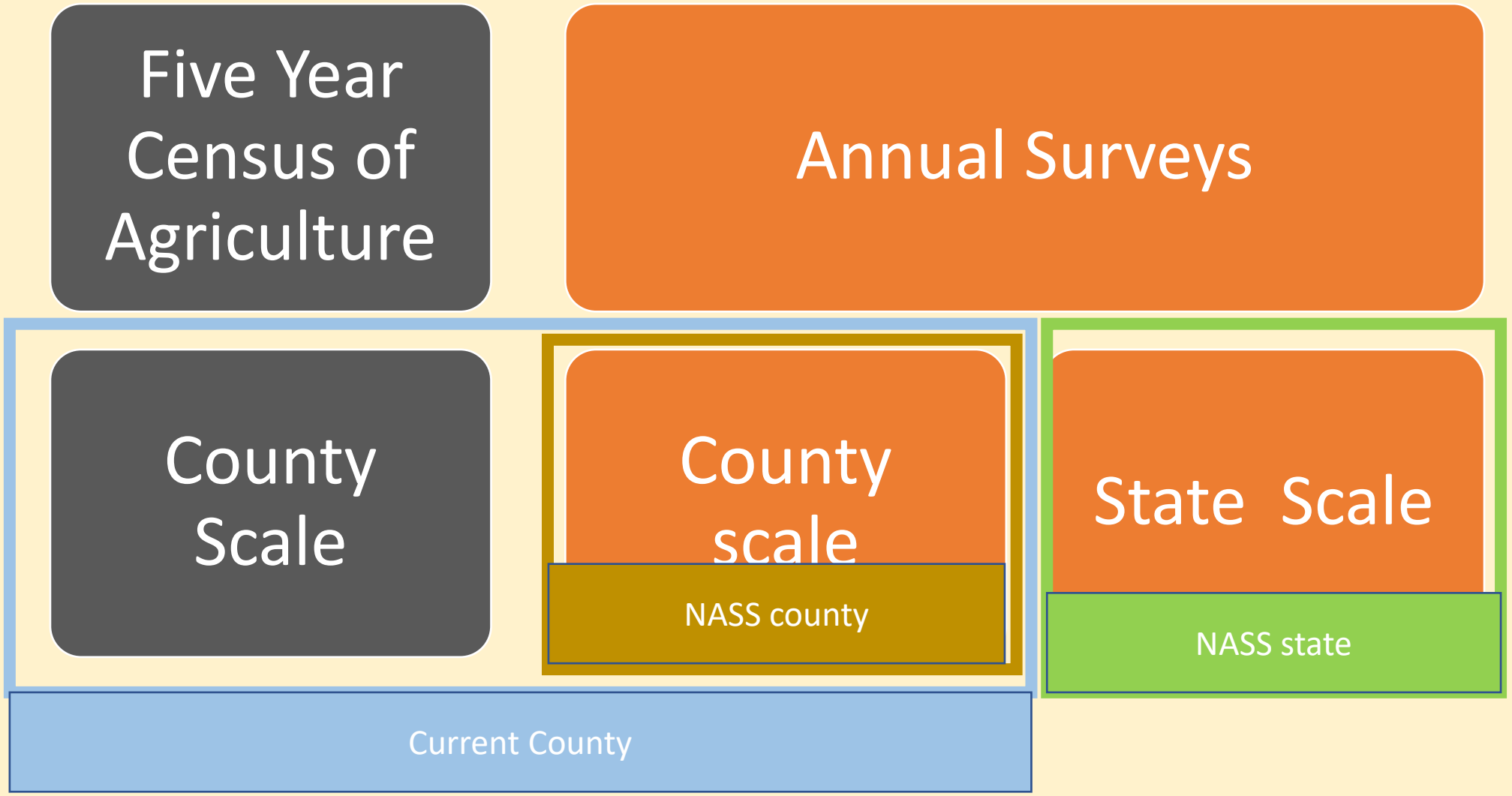
Annual Surveys

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?

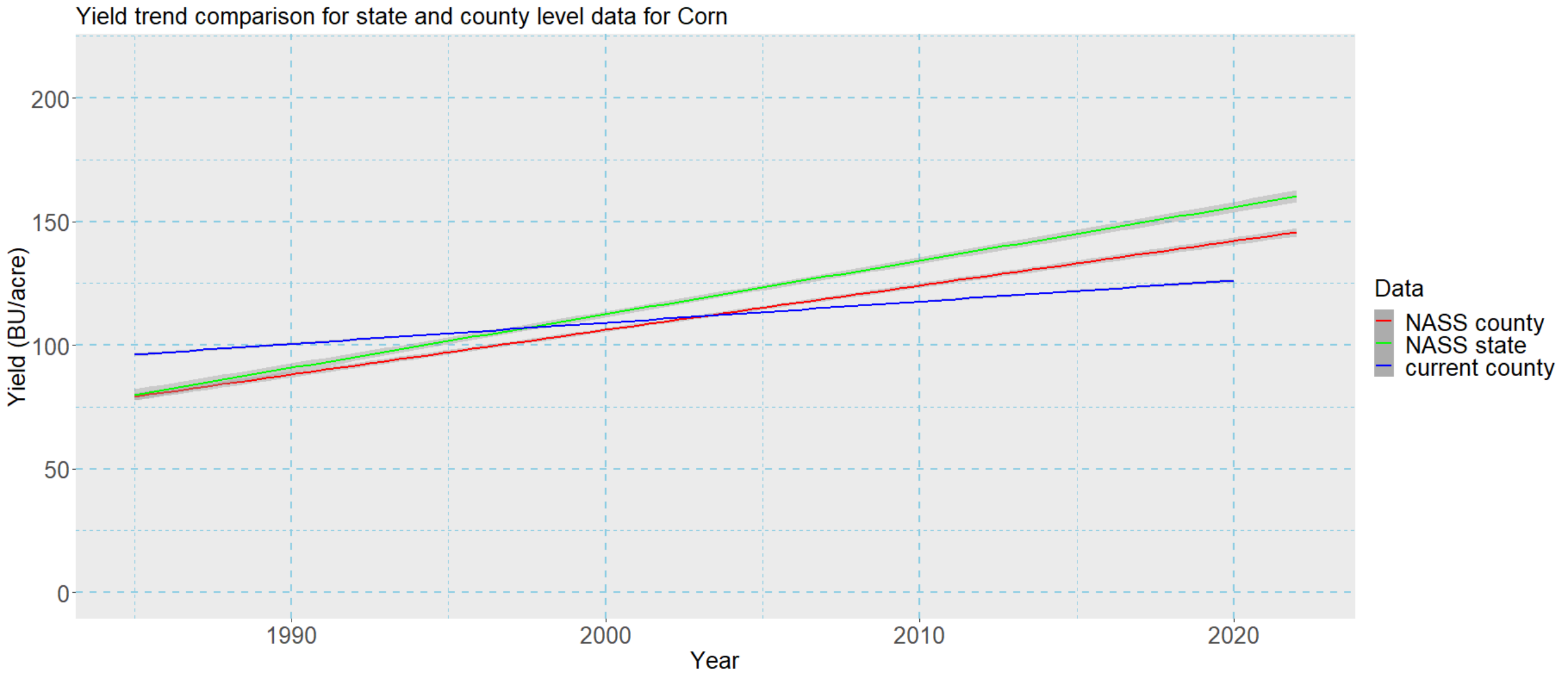
Selected crops

- Corn
- Soybeans
- Alfalfa Hay

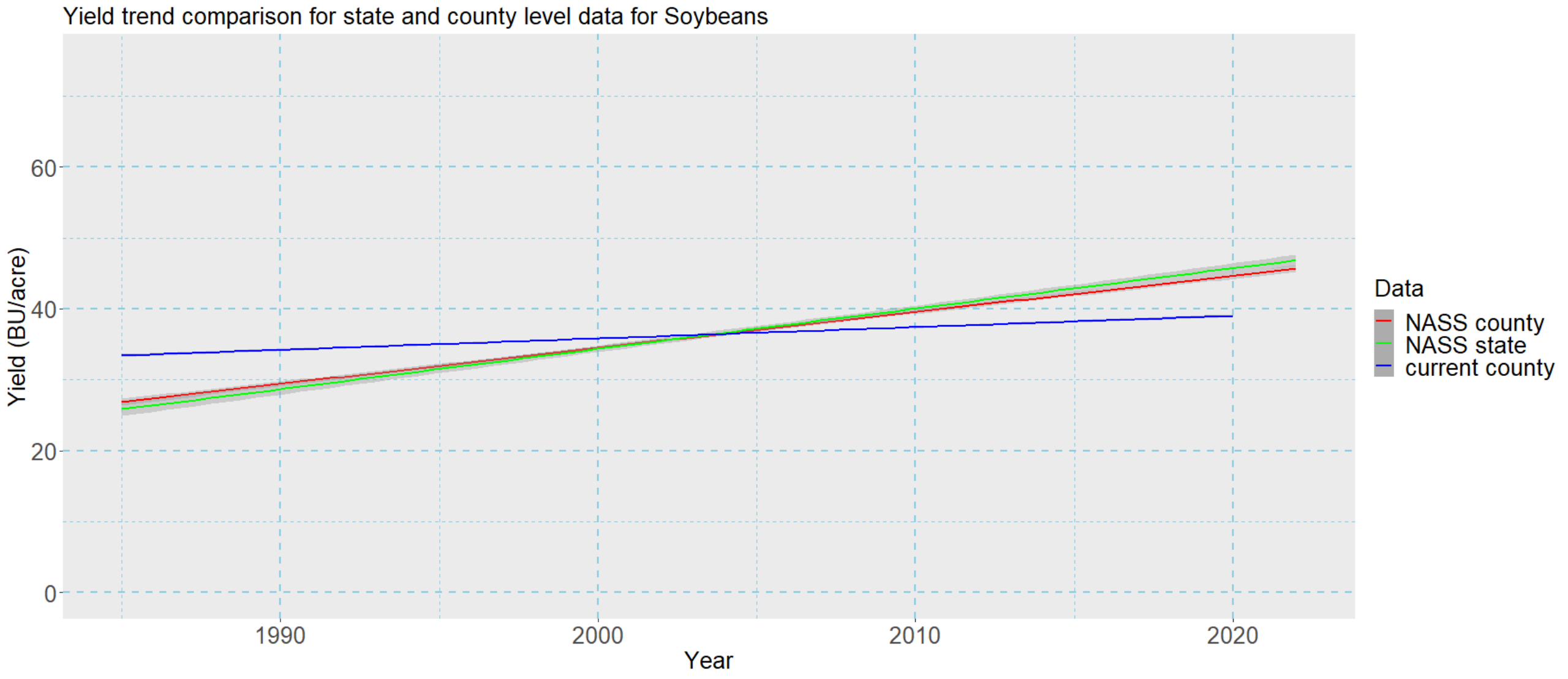
Linear regression

- 1985-2022

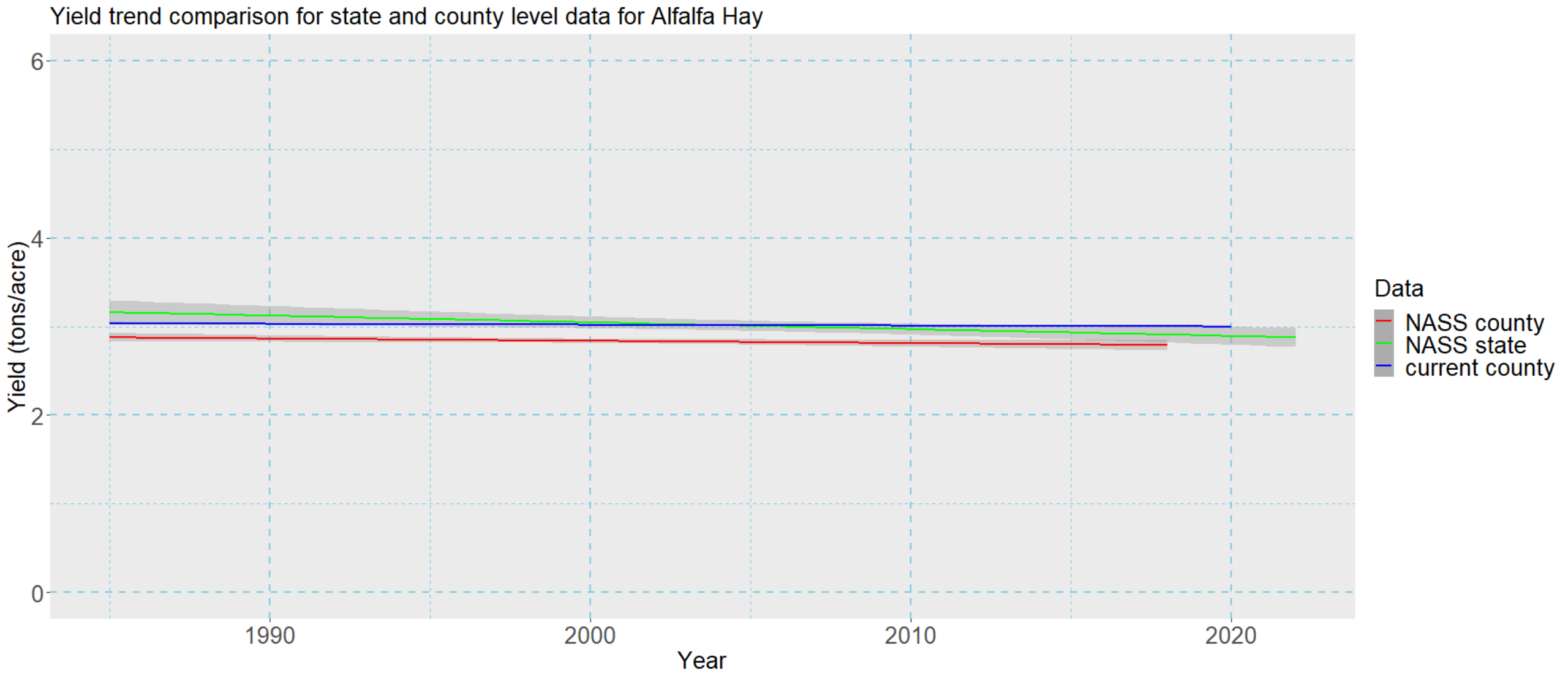
Trends: Corn


Yield trend comparison for state and county level data for Corn
Yield (BU/acre)
200
150
100
50
0
1990
2000
2010
2020
Year
Data
NASS county
NASS state
current county

Trends: Soybeans



Trends: 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?