

PPSN Meeting, Fall 2023

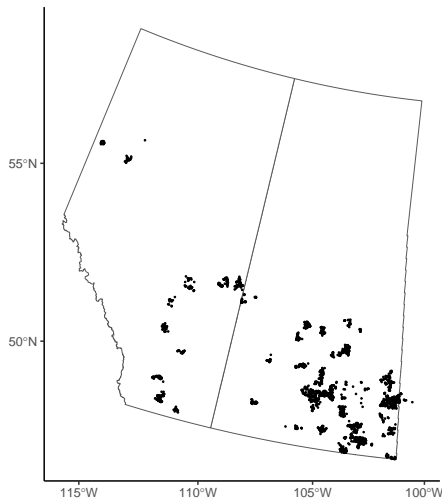
Update on yield data processing

Samuel Robinson, Ph.D.

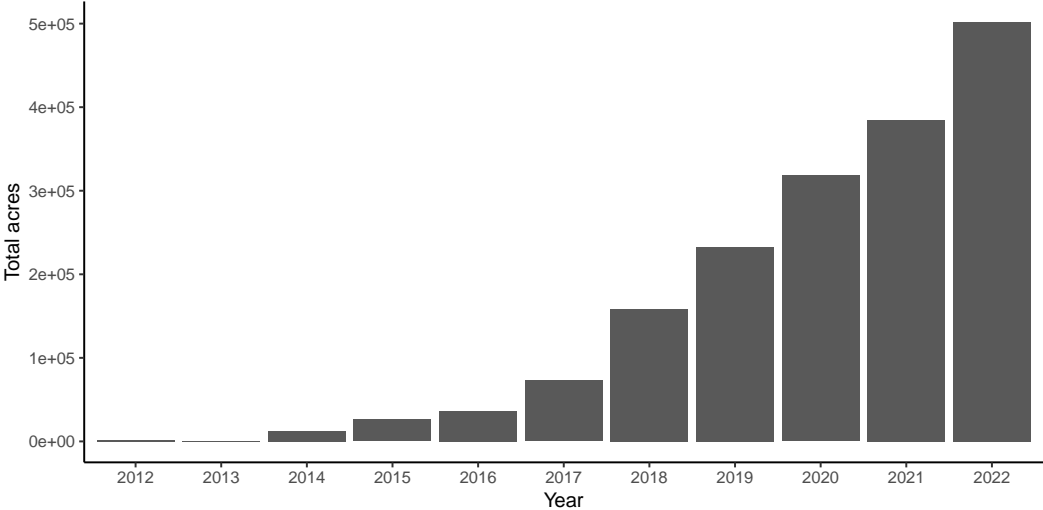
Oct 18, 2023

Update on yield data collection

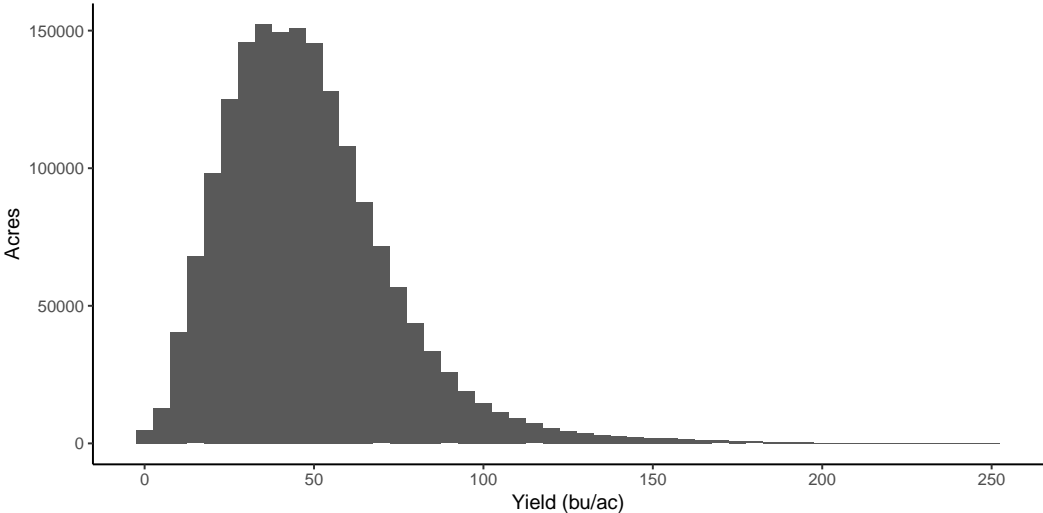
- 49 growers' datasets loaded
- 4 datasets in progress: require custom coding for each dataset
- 6523 field-years, 2016 individual fields
- 10 years of data (2012-2022)
- 15 crop types
- Field areas (acres):
 - Total = 795181
 - Mean = 330.9
 - Median = 271.4
 - Min = 2.1
 - Max = 2651.9



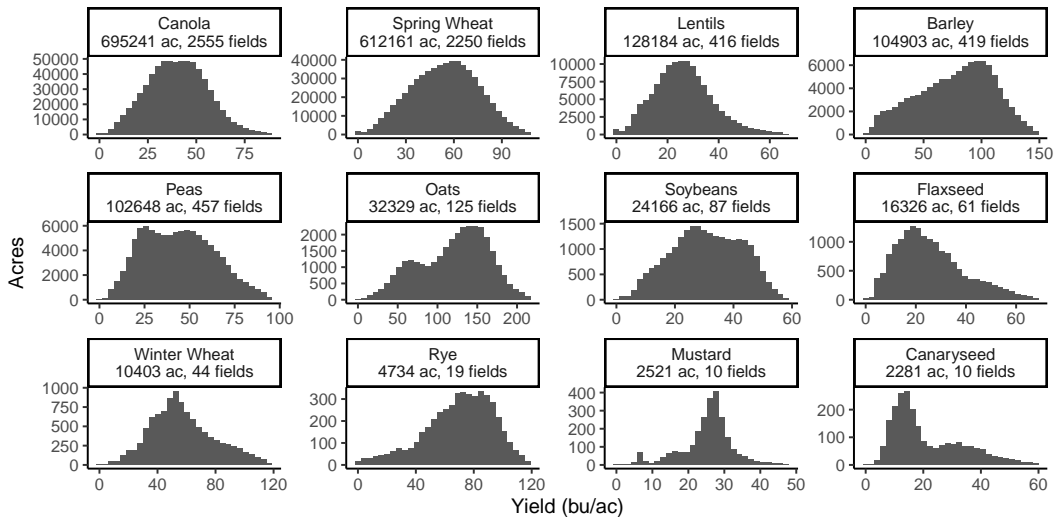
Acreage by year



Overall yield

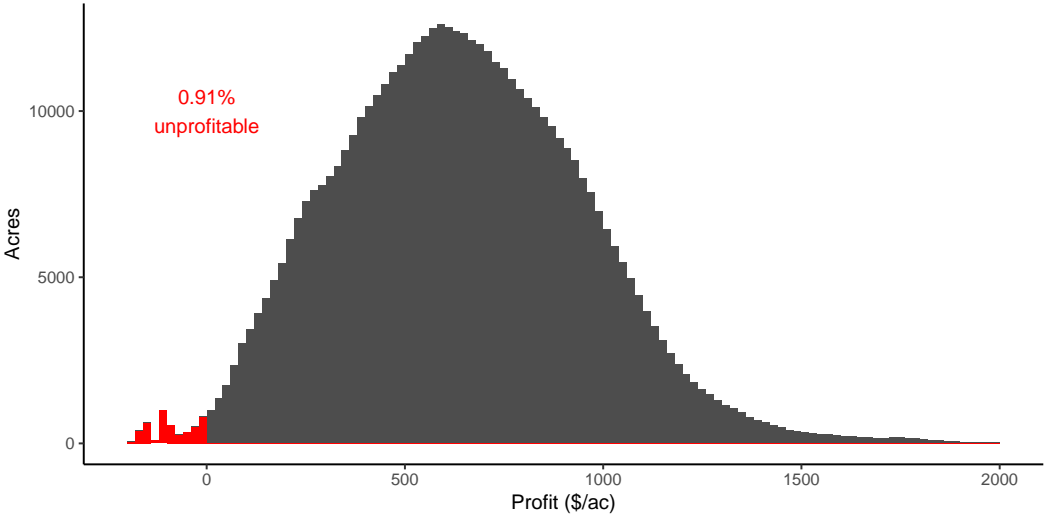


Crop specific yield

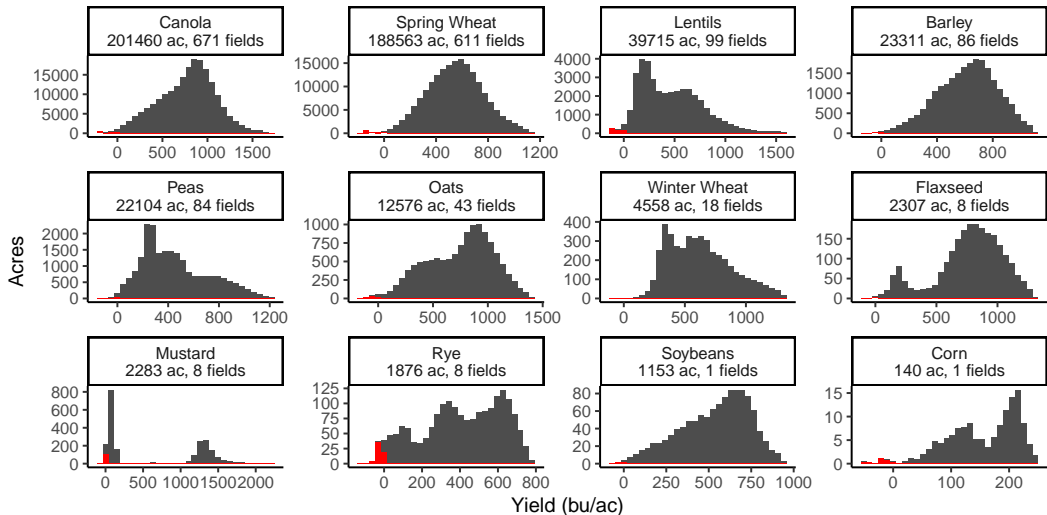


Not shown: corn, chickpeas, soybeans

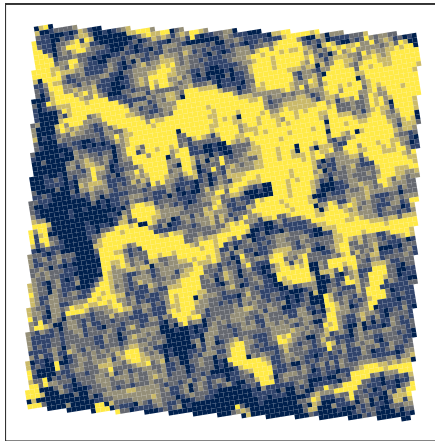
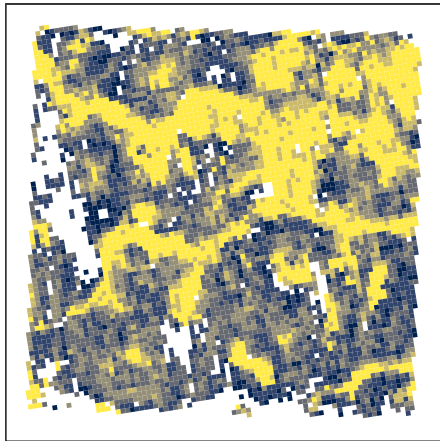
Overall profit (2022 only)



Crop-by-crop profit (2022 only)



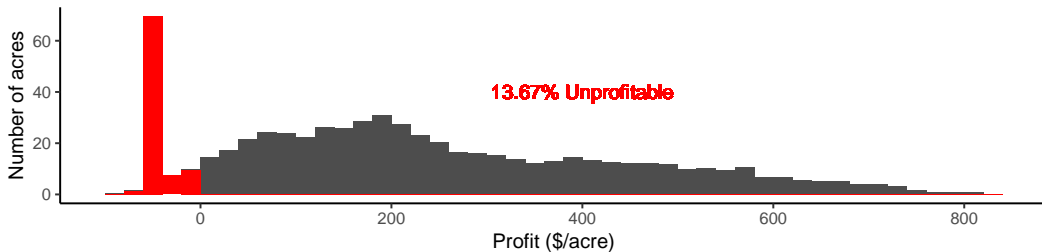
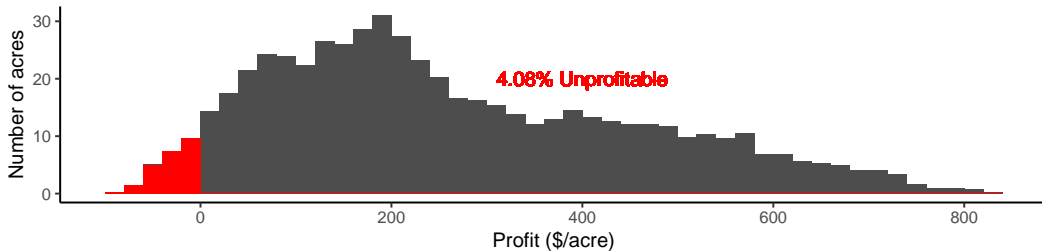
Challenge: missing data or zero yield?



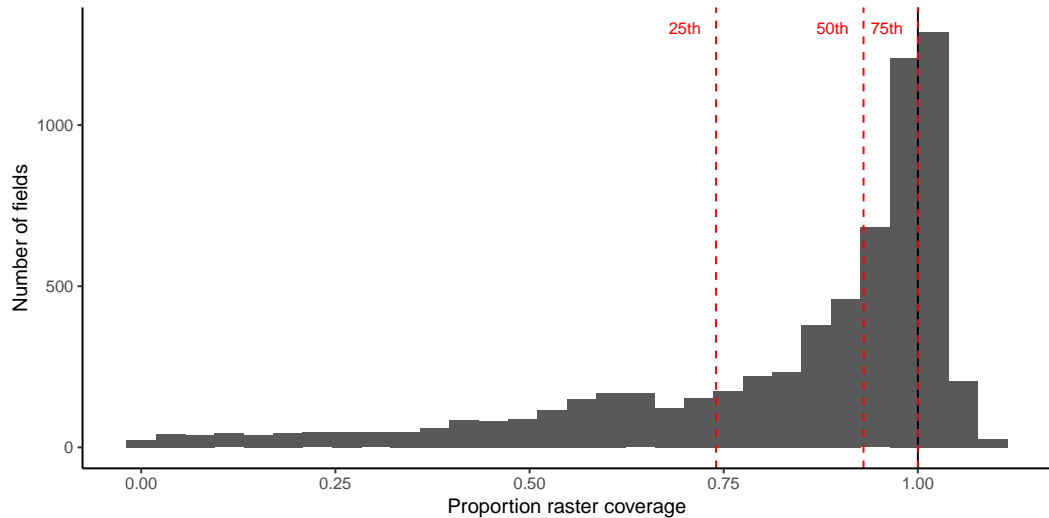
Dollars
per acre



Challenge: missing data or zero yield (cont.)



Data coverage (per field)



Other challenges

- Grower records
 - Need standardization/name matching
 - Mismatches between yield data, grower records, satellite data
- Data Filtering
 - Parameters (i.e. “throw out when $X = \dots$ ”)
 - Order of filtering pipeline
 - Combine back-correction smoothing
 - Not trivial: affects grower reports, final models, and grower trust/buy-in
 - **GARBAGE IN, GARBAGE OUT**
- Further profit mapping
 - Require economic data prior to 2022