### Number of Corn Crop Quality Observations per State

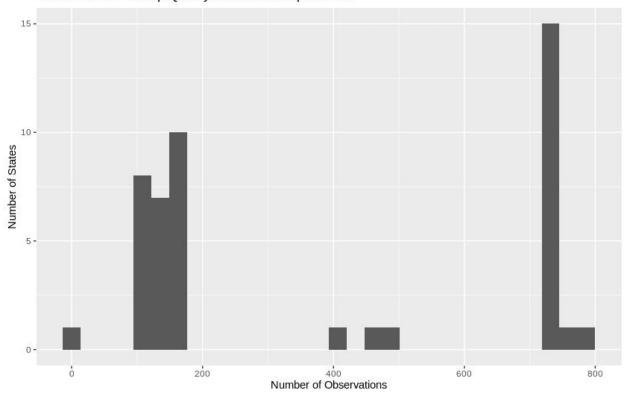


Figure 1: Number of corn crop quality observations per state

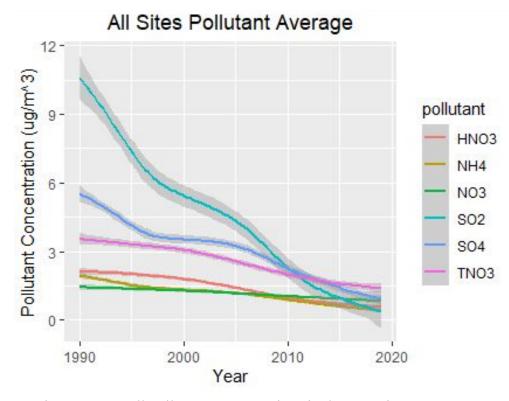


Figure 2: Overall pollutant concentrations in the U.S. since 1990

#### Air pollutant concentrations in 2019 by site type Sulfate (SO4) Sulfur Dioxide(SO2) Pollutant Concentration (ug/m<sup>A</sup>3) Pollutant Concentration (ug/m<sup>A</sup>3) SiteTypeN SiteTypeN agricultural agricultural coastal coastal natural urban 🖶 urban 0.5 agricultural agricultural urban coastal natural urban coastal natural Location Type Location Type Ammonium (NH4) Nitric Acid(HNO3) 1.00 -0.75 Pollutant Concentration (ug/m^3) Pollutant Concentration (ug/m^3) SiteTypeN SiteTypeN agricultural agricultural coastal coastal natural natural urban

Figure 3: Pollutant concentrations by site classification in the U.S. in 2019

agricultural

coastal natural Location Type

urban

coastal

0.25

coastal natural Location Type

urban

coastal

agricultural

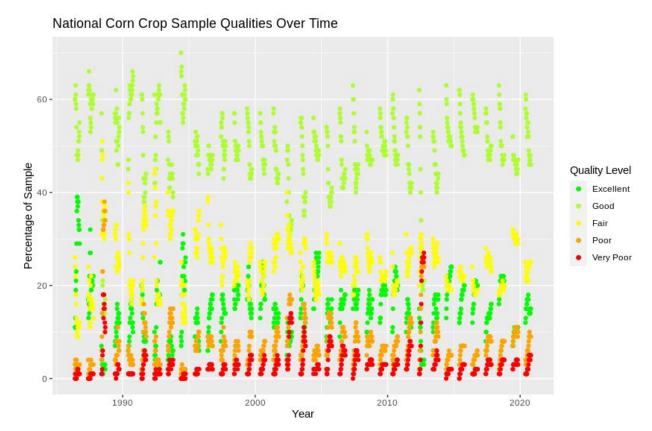


Figure 4: National corn crop sample qualities over time

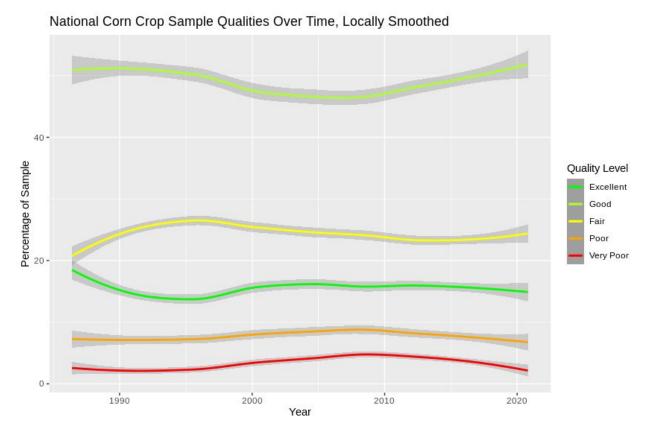


Figure 5: National corn crop sample qualities over time, locally smoothed

# Corn Crop Quality Level Correlations

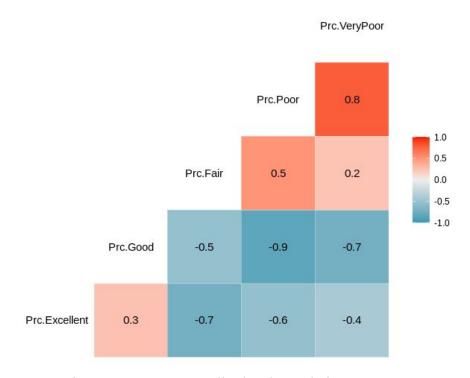


Figure 6: Corn crop quality level correlations

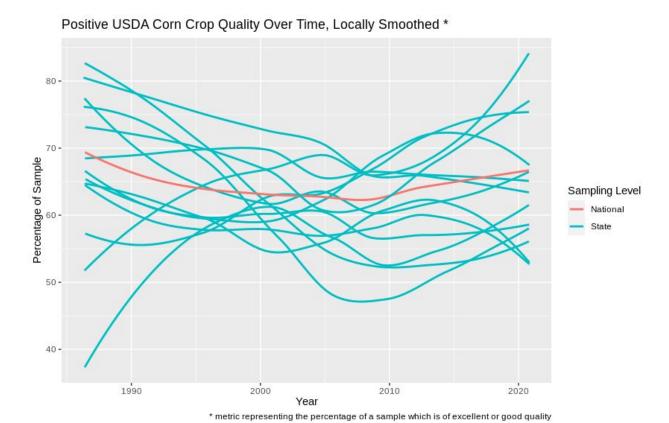


Figure 7: Positive USDA corn crop quality over time, locally smoothed

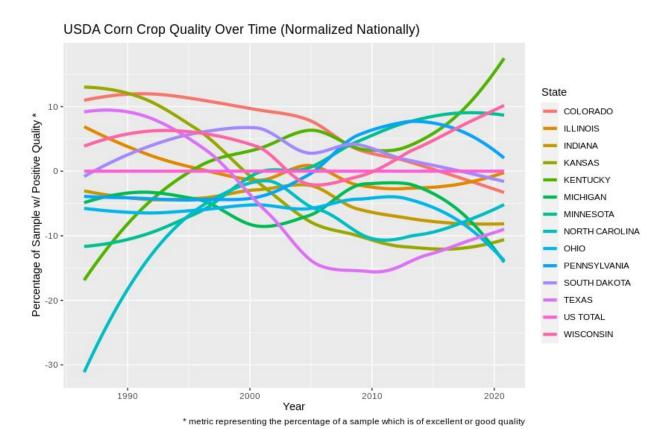


Figure 8: USDA corn crop quality over time (normalized nationally)

### Trace Gas and Corn Crop Quality Correlations

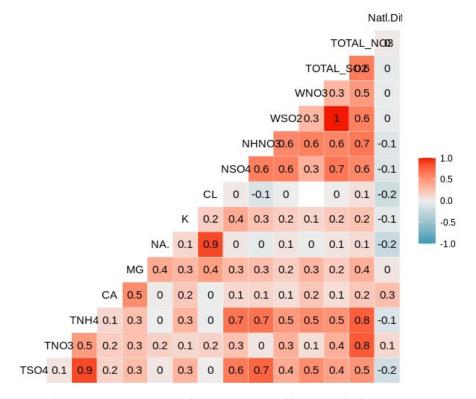


Figure 9: Trace gas and corn crop quality correlations

# Positive Crop Quality vs. Atmospheric Calcium Concentrations

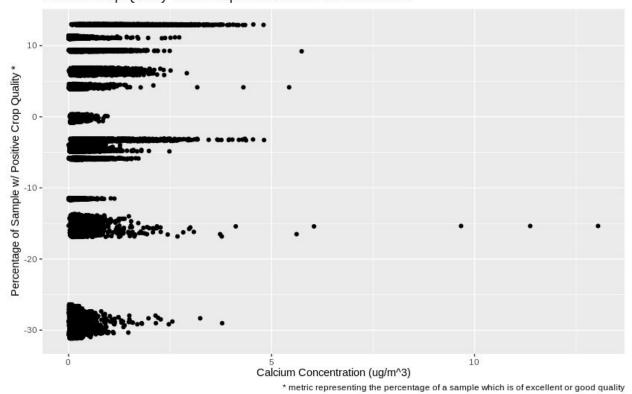


Figure 10: Positive crop quality vs. atmospheric calcium concentrations

### Positive Crop Quality vs. Atmospheric Sulfate Concentrations

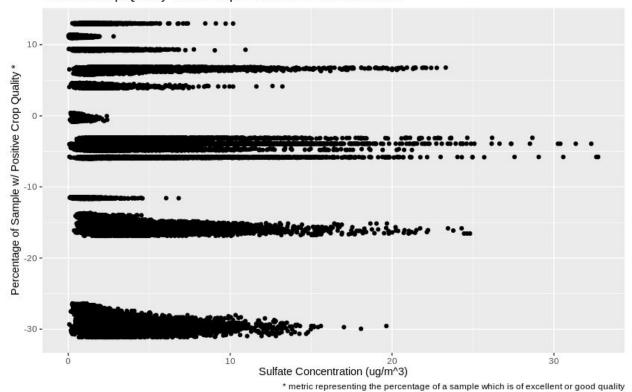
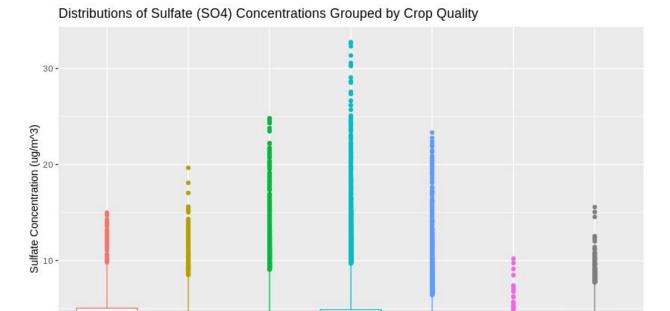


Figure 11: Positive crop quality vs. atmospheric sulfate concentrations



\* metric representing the percentage of a sample which is of excellent or good quality

Figure 12: Distributions of sulfate (SO4) concentrations grouped by crop quality

Percentage of Sample w/ Positive Quality, Rounded Down \*

10

0 -

-40

-30