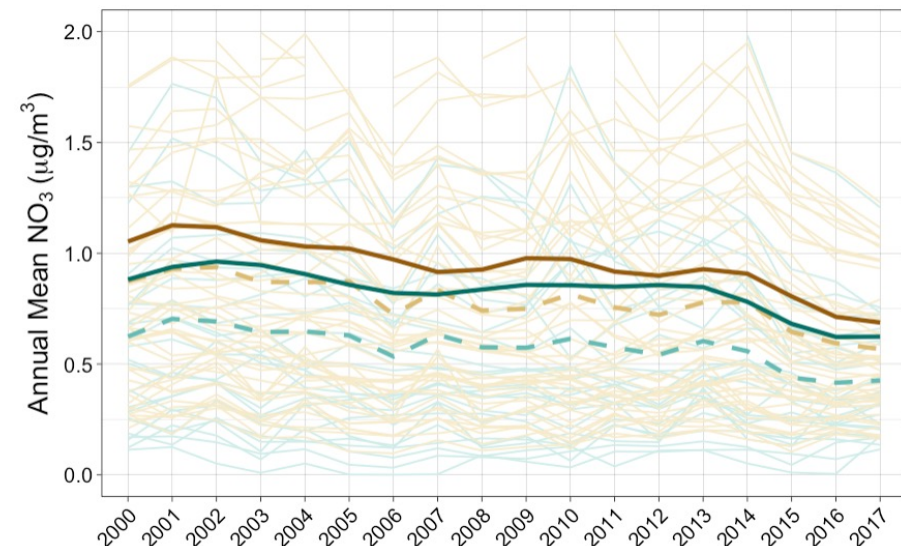
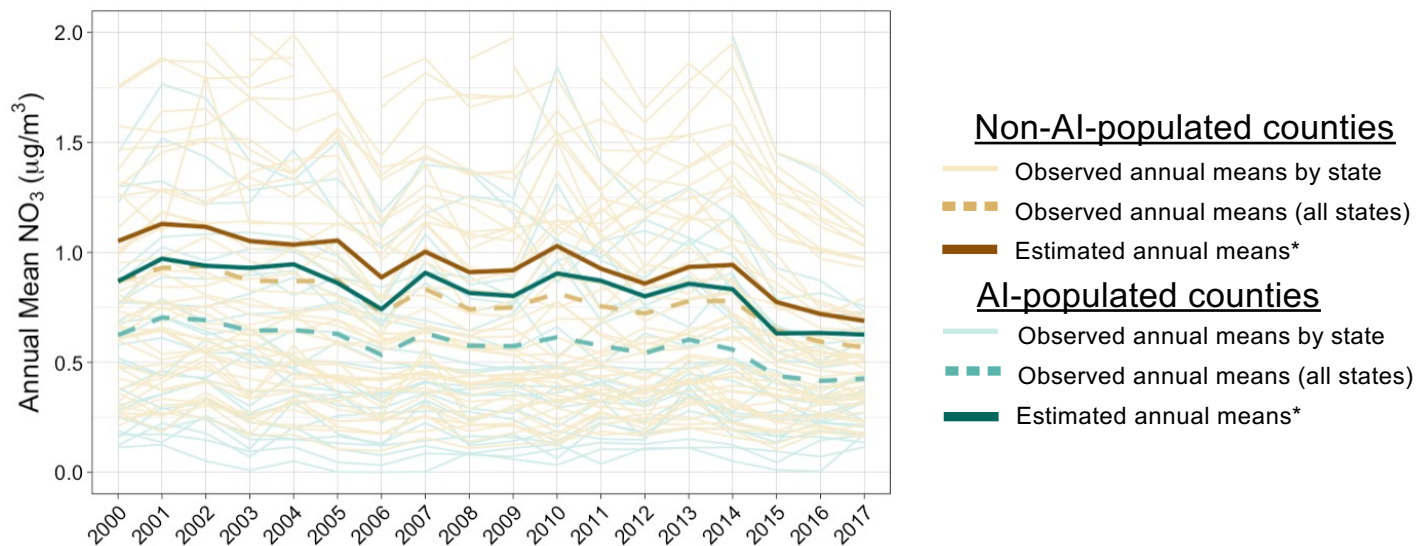


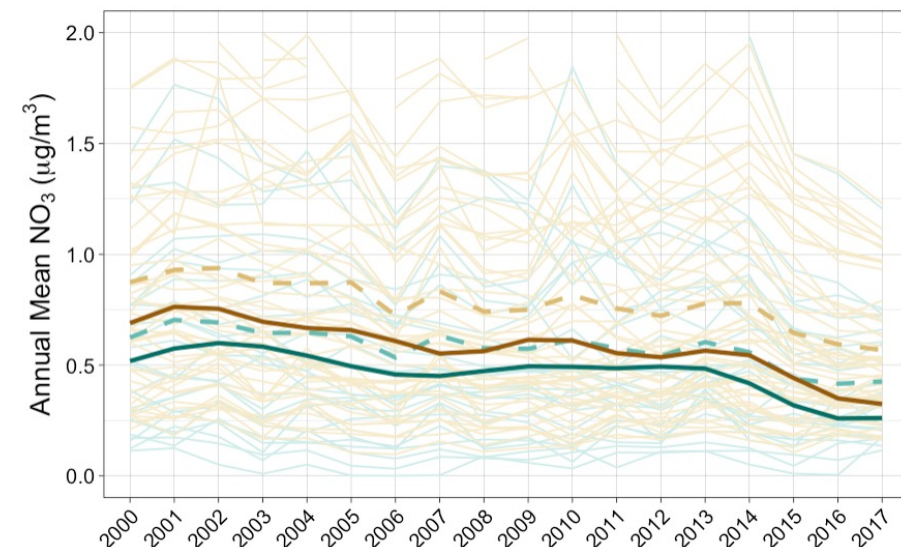
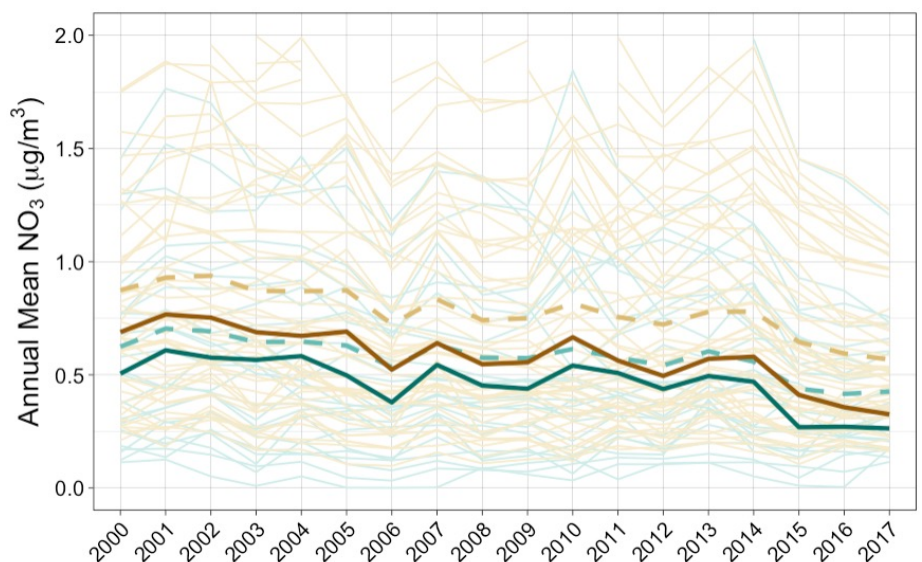
GAMM4 interX categorical year and county type

GAMM4 year as penalized spline s(year, by = county type, k=10)

\* Annual predicted **NO<sub>3</sub>** in most common non-AI decile of HH income (\$57.5k–116k) and pop density (160-382 persons/mi<sup>2</sup>)



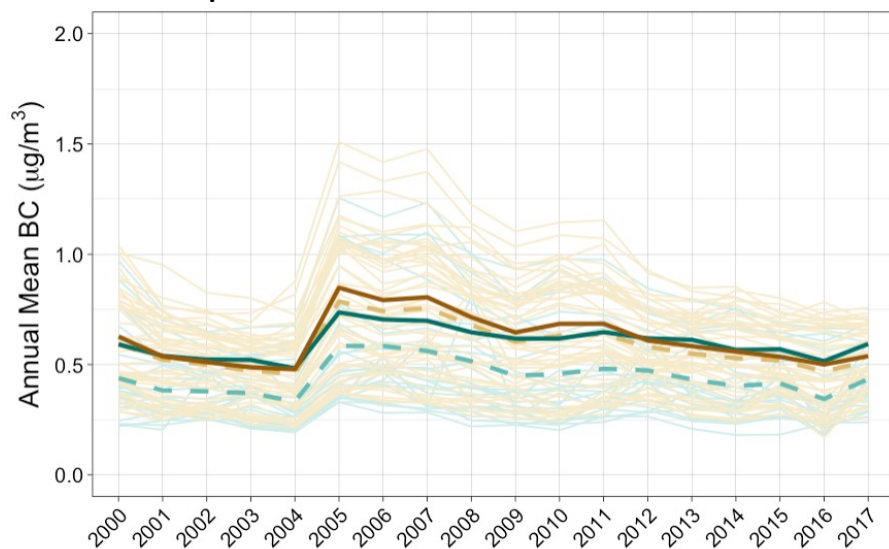
\* Annual predicted **NO<sub>3</sub>** in most common AI decile of HH income (\$35.6k–38k) and pop density (4.4-12.7 persons/mi<sup>2</sup>)



GAMM4 interX categorical year and county type

GAMM4 year as penalized spline s(year, by = county type, k=10)

\*Annual predicted **BC** in most common non-AI decile of HH income (\$57.5k–116k) and pop density (160-382 persons/mi<sup>2</sup>)

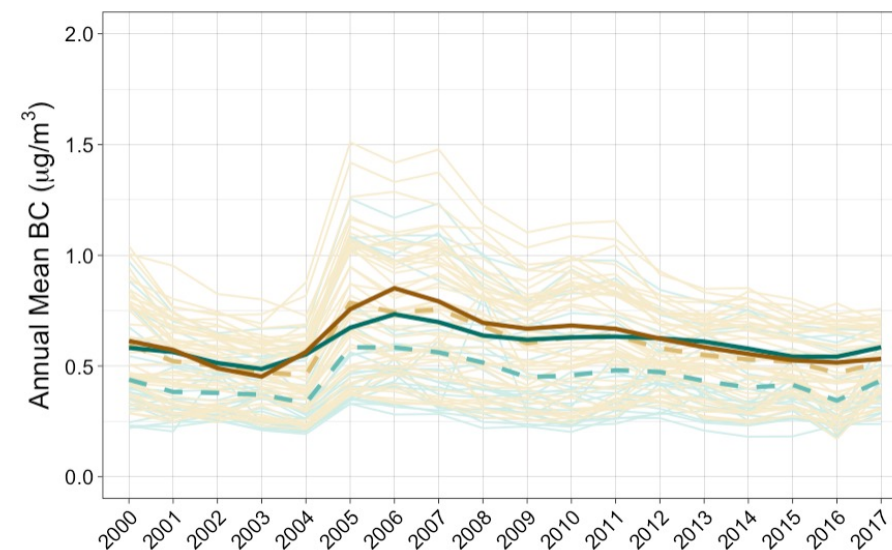


Non-AI-populated counties

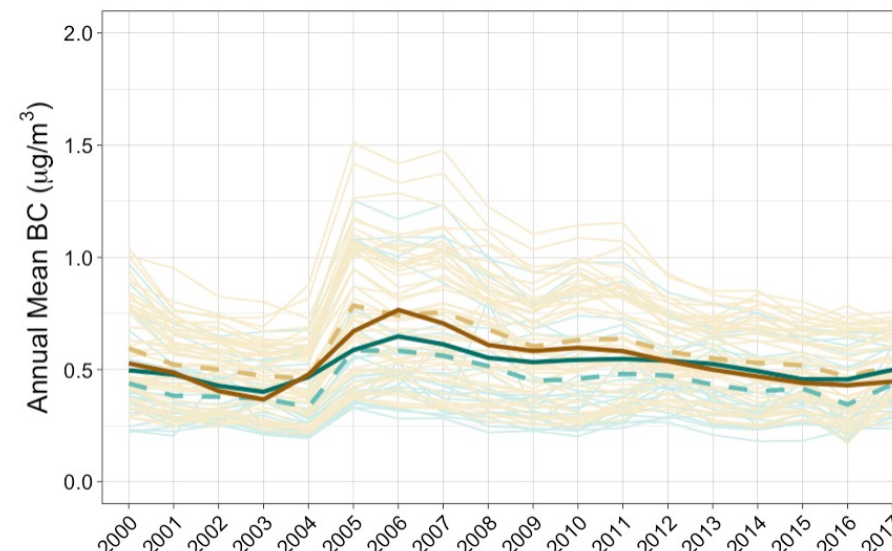
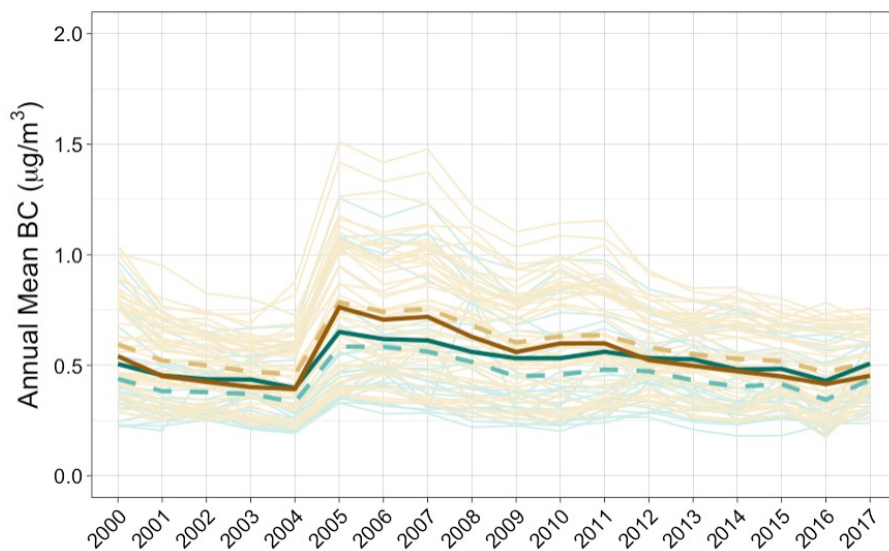
- Observed annual means by state
- Observed annual means (all states)
- Estimated annual means\*

AI-populated counties

- Observed annual means by state
- Observed annual means (all states)
- Estimated annual means\*



\*Annual predicted **BC** in most common AI decile of HH income (\$35.6k–38k) and pop density (4.4-12.7 persons/mi<sup>2</sup>)

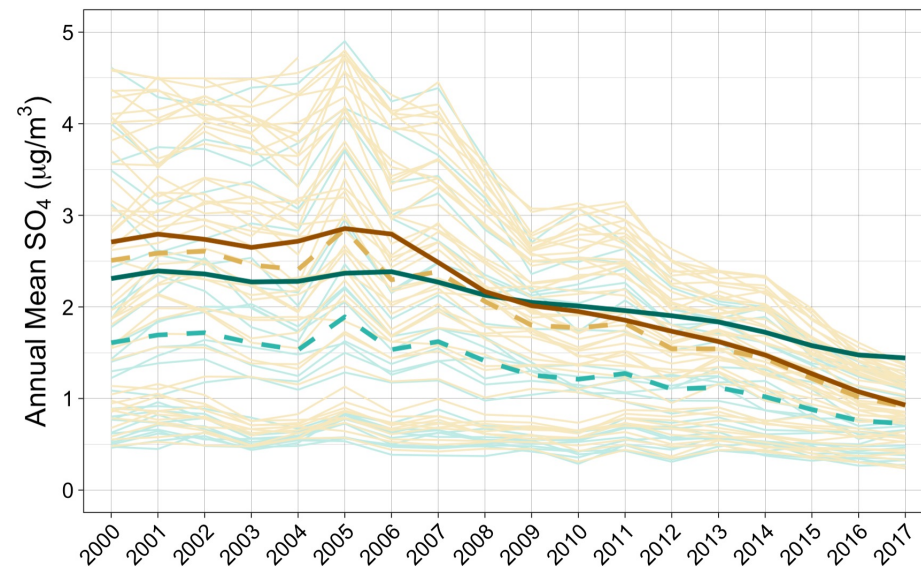
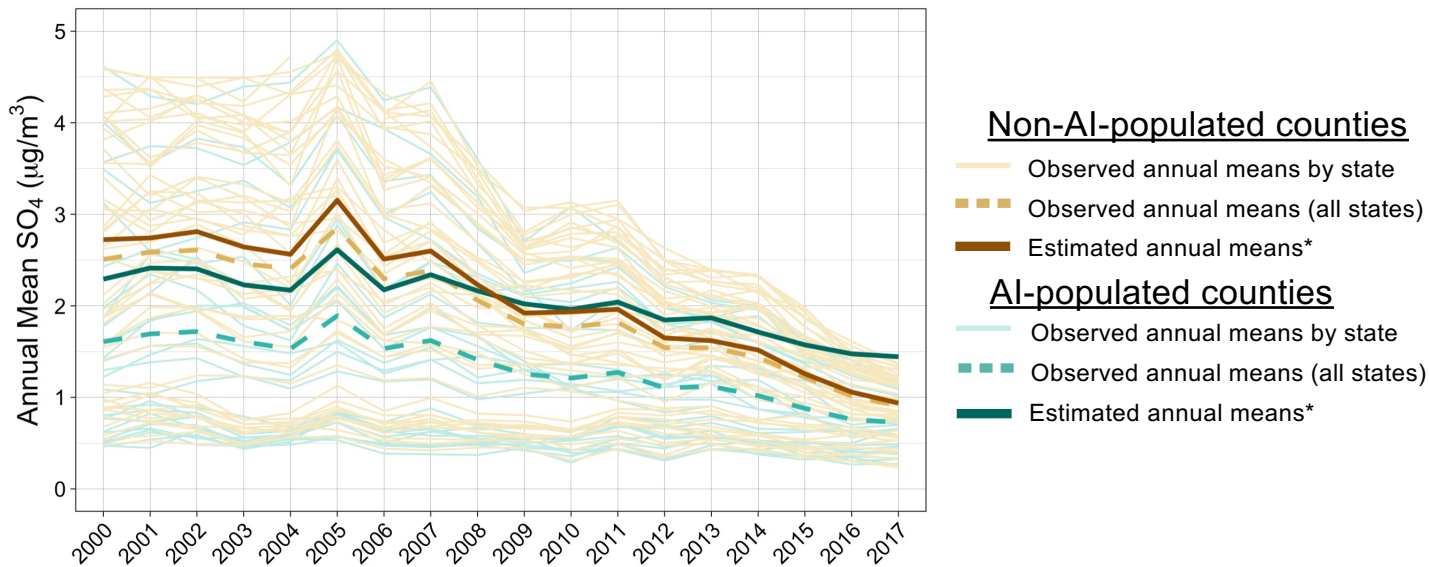




GAMM4 interX categorical year and county type

GAMM4 year as penalized spline s(year, by = county type, k=10)

\* Annual predicted **SO<sub>4</sub>** in most common non-AI decile of HH income (\$57.5k–116k) and pop density (160-382 persons/mi<sup>2</sup>)



\* Annual predicted **SO<sub>4</sub>** in most common AI decile of HH income (\$35.6k–38k) and pop density (4.4-12.7 persons/mi<sup>2</sup>)

