

A Decade of Toxin Release

JOANNA PITTARI & CEDAR CALLAHAN



Contextualizing the Data

- ④ The state of chemical and environmental welfare in the U.S. (and partially out of it)
- ④ Changing laws and regulations
- ④ The Environmental Protection Agency's (EPA) yearly Toxic Release Inventory (TRI)

Why Care?

- ④ Public Health
Many chemicals in the TRI
have been shown to be
harmful to human health
- ④ Environmental Protection
Other chemicals have
considerable and
detrimental environmental
impacts



The Dataset

- ✓ The goal - to identify the patterns of waste chemicals across the U.S.
- ✓ The TRI we are focusing on starts in 2011 and ends in 2021
- ✓ It is non-comprehensive due to reporting laws.

Facility Map



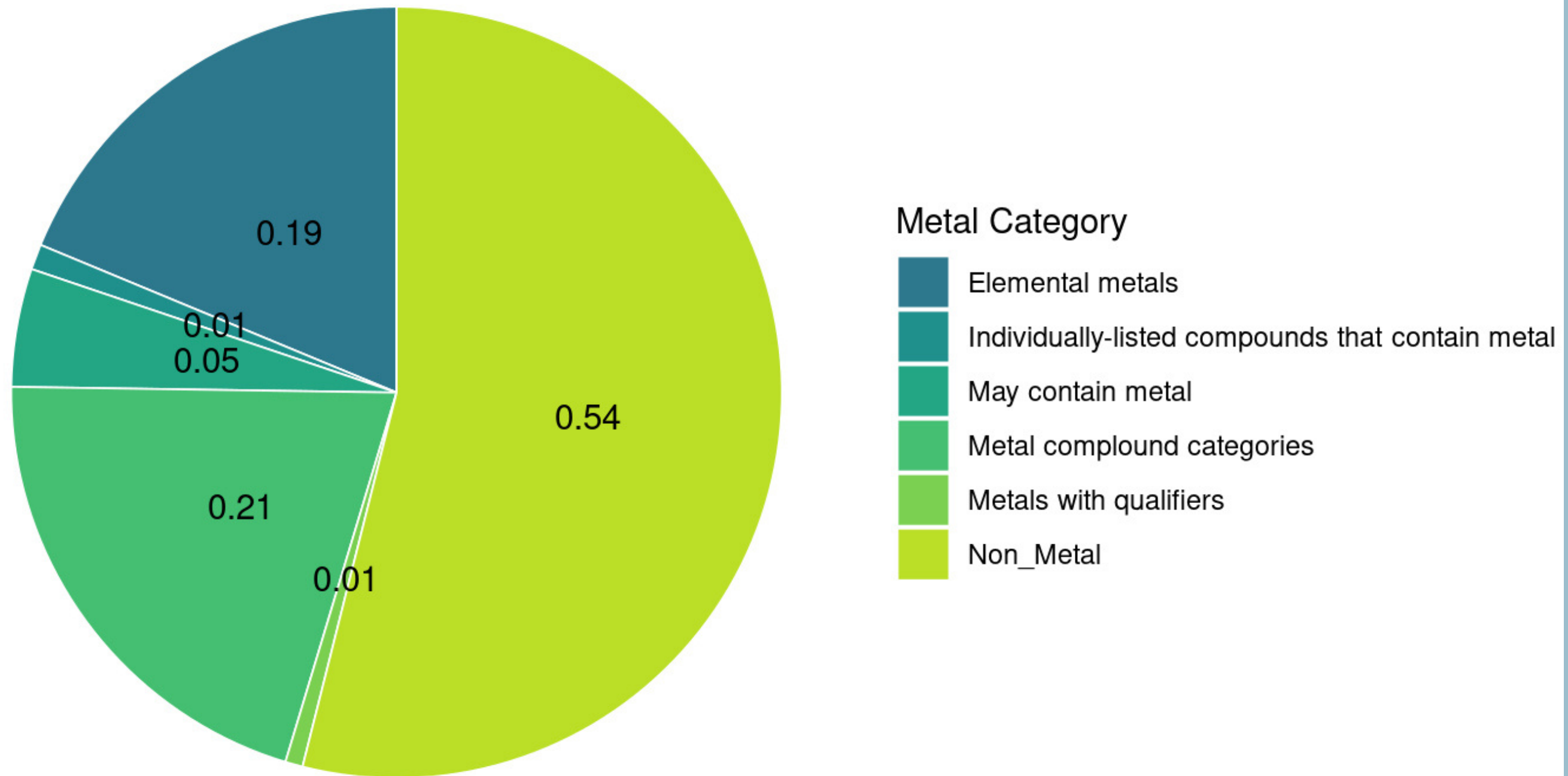
01

What chemical trends are present?

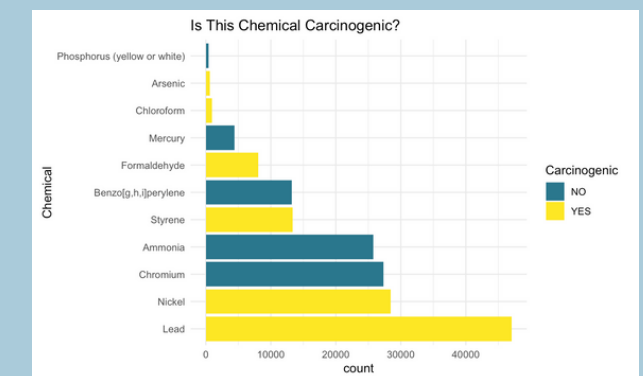
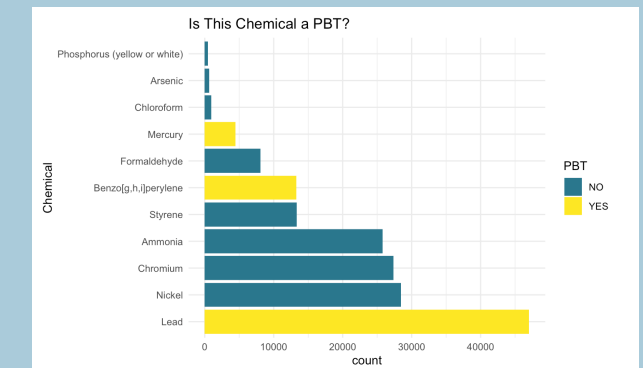
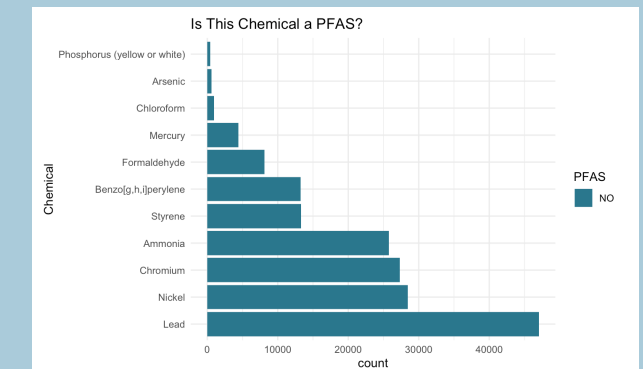
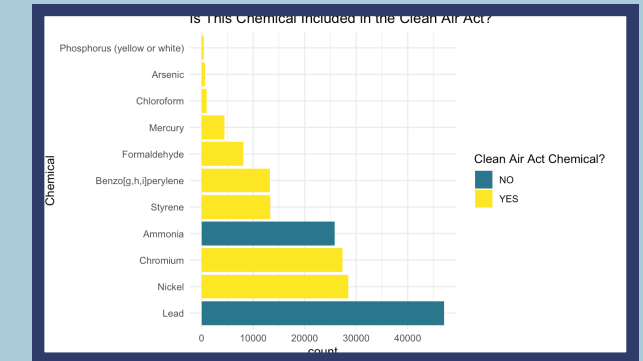
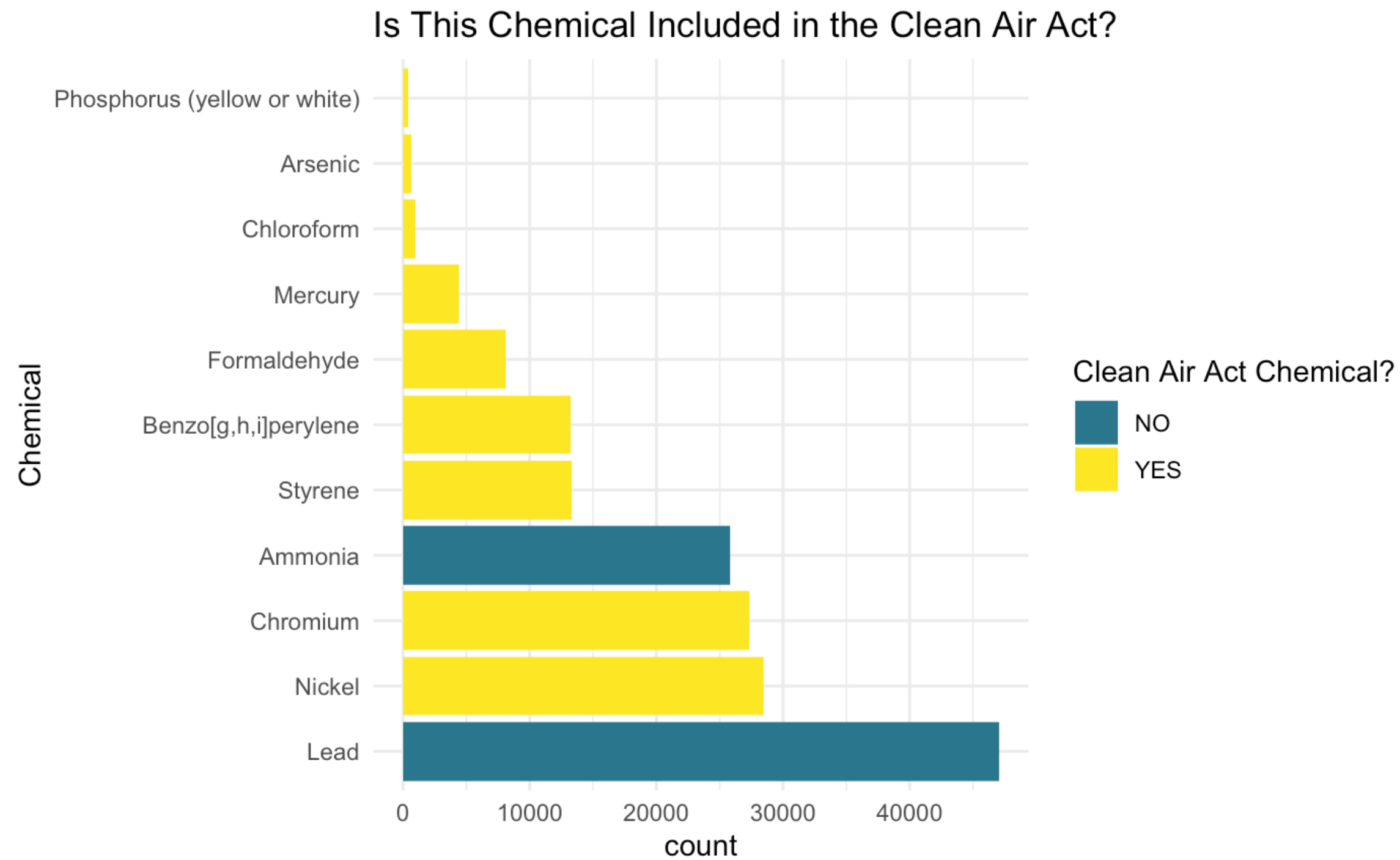
By industry sector?
Whether placed on tribal land or not?
Their purposes?

Statistics

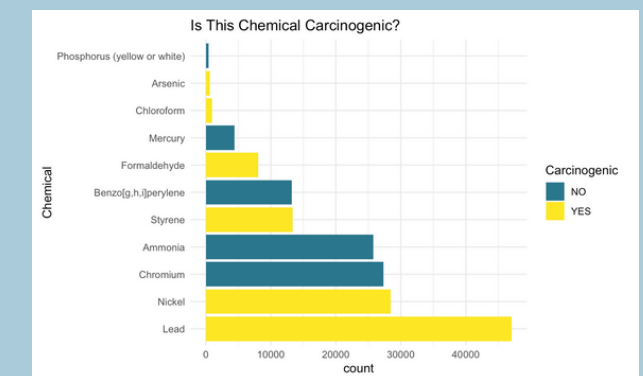
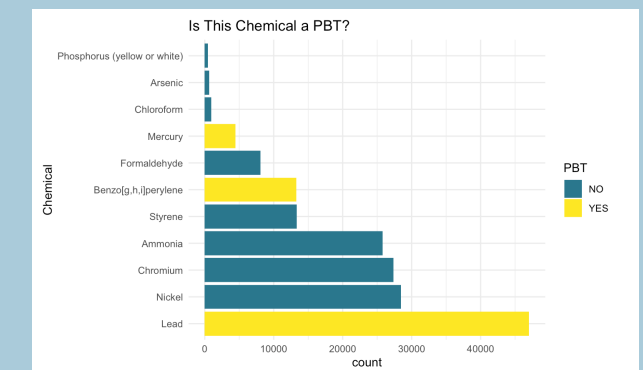
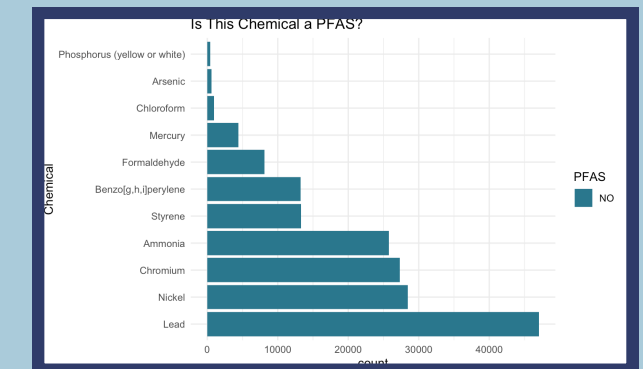
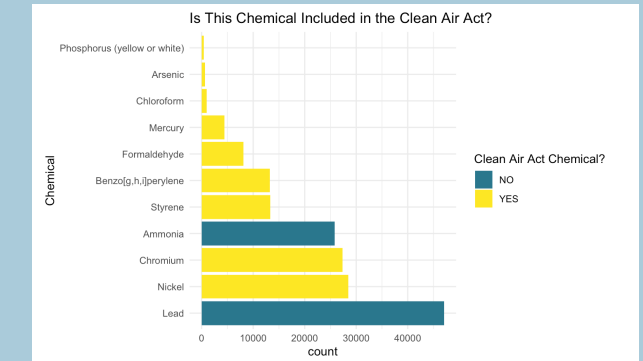
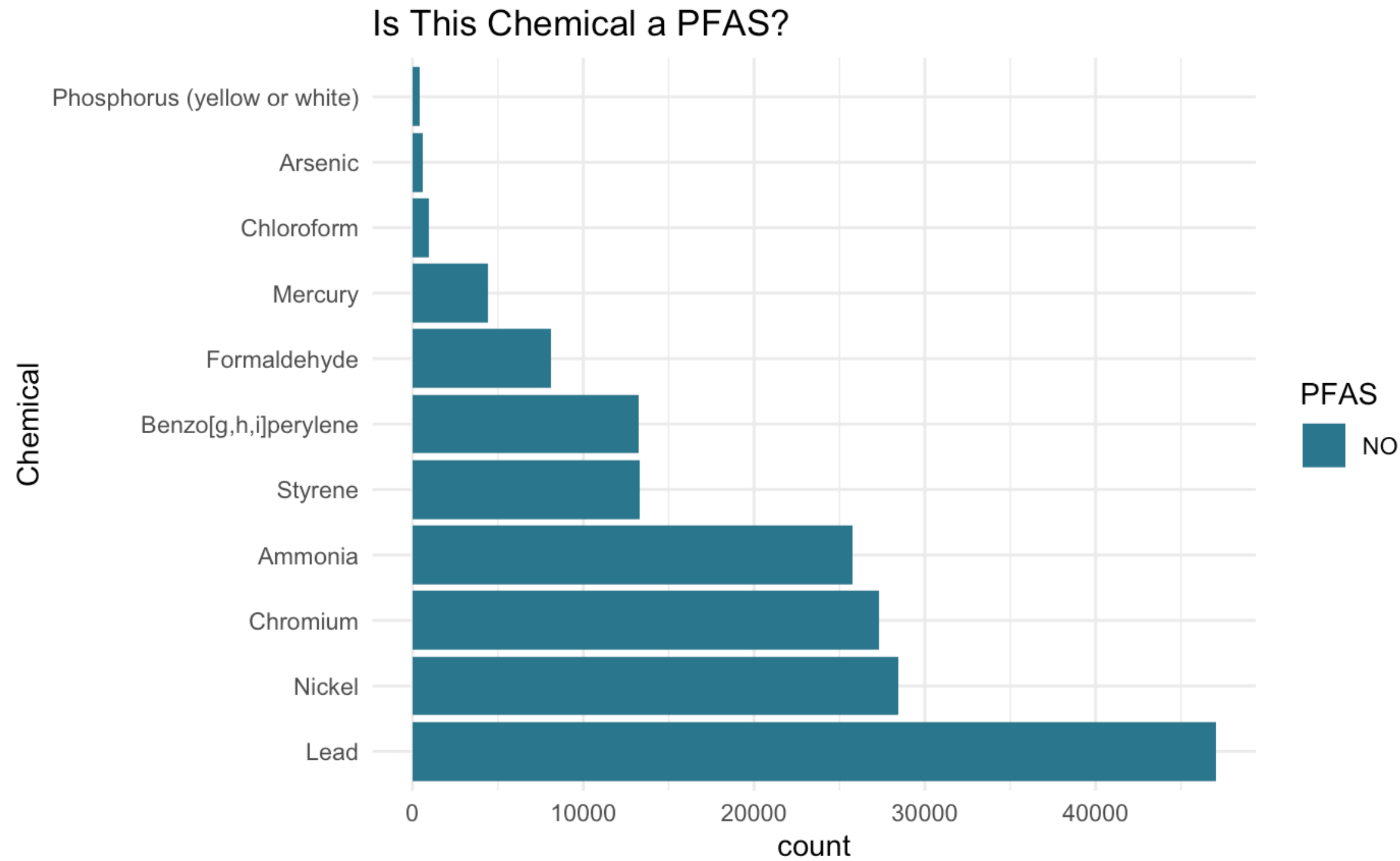
Metal Category Distribution



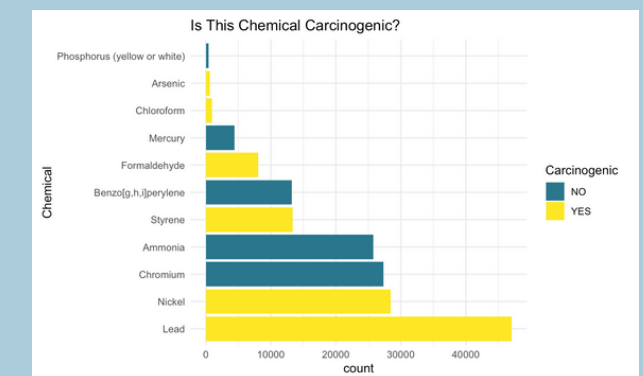
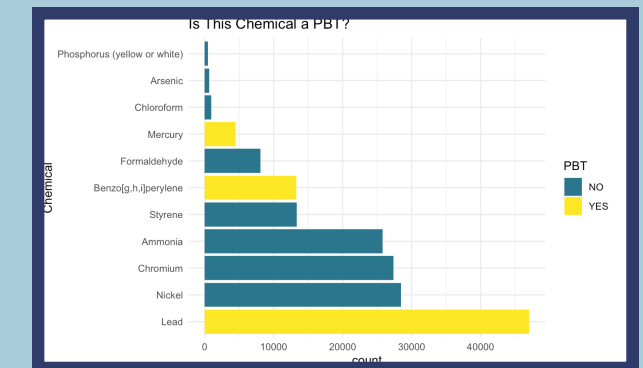
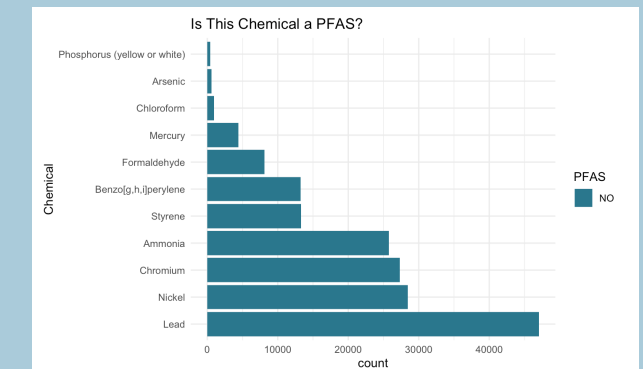
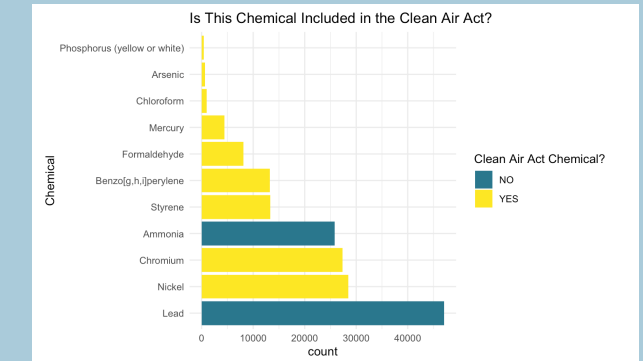
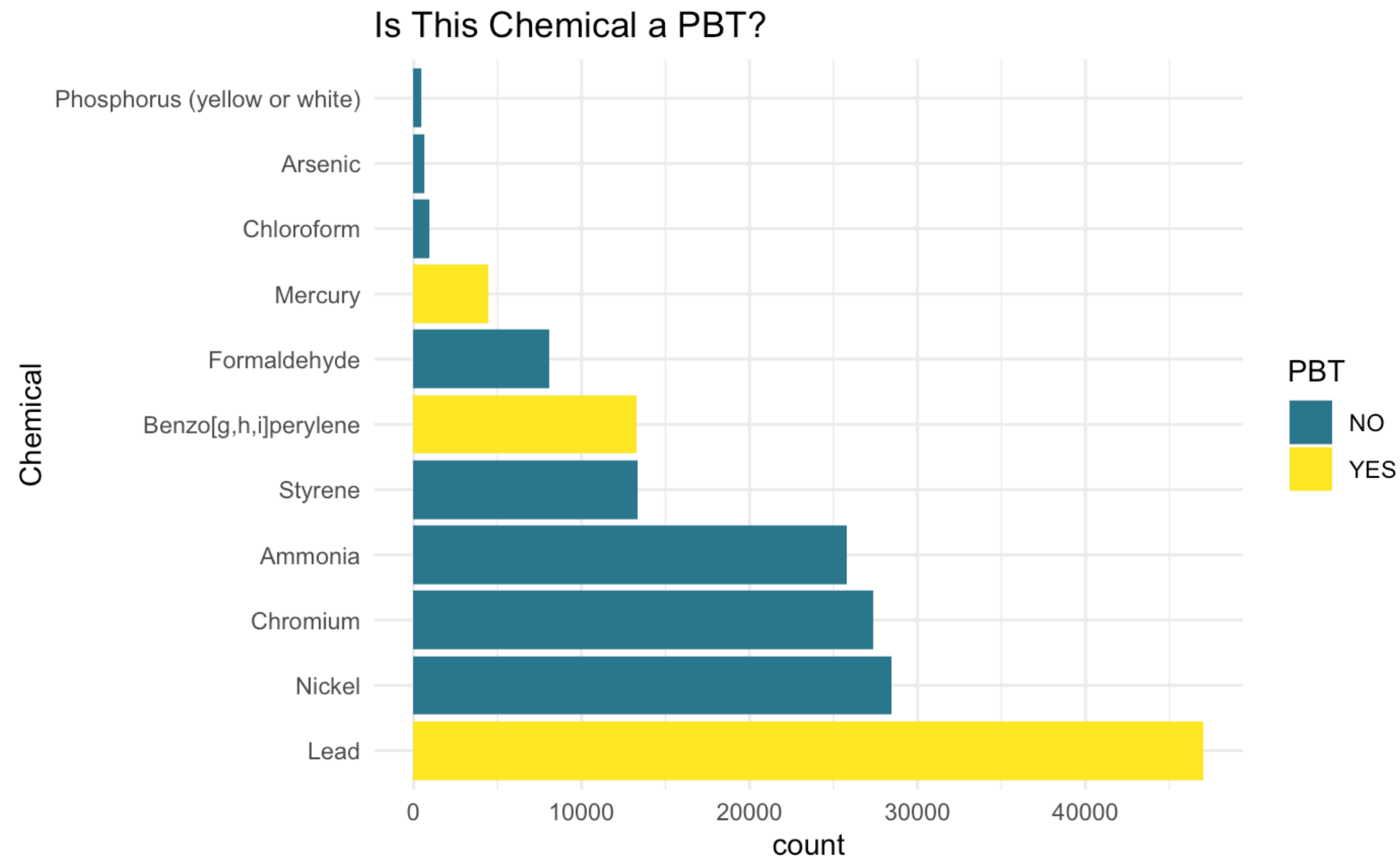
Statistics



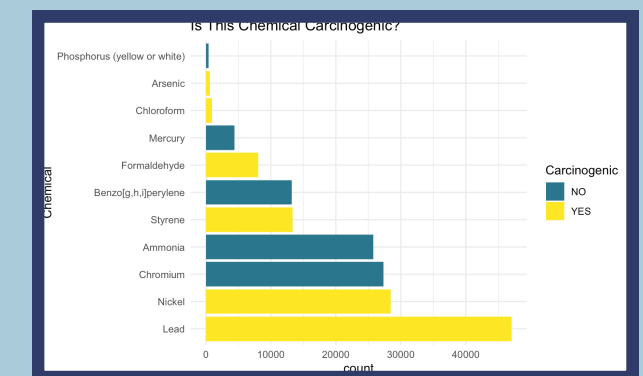
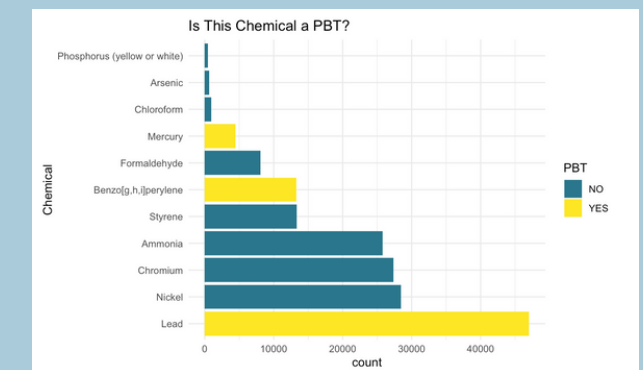
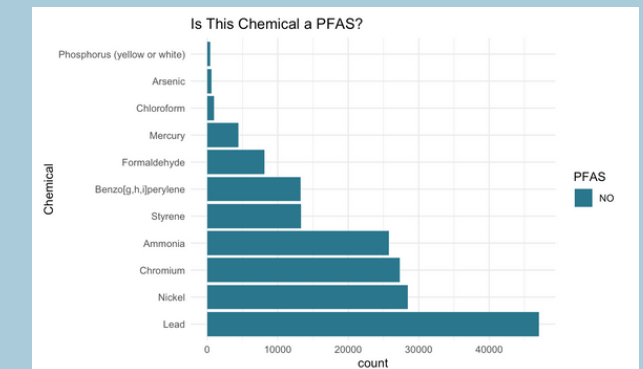
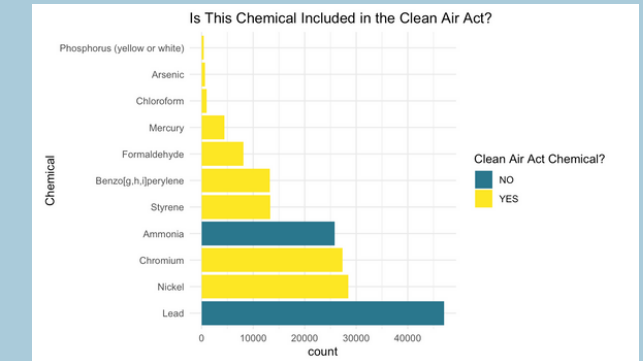
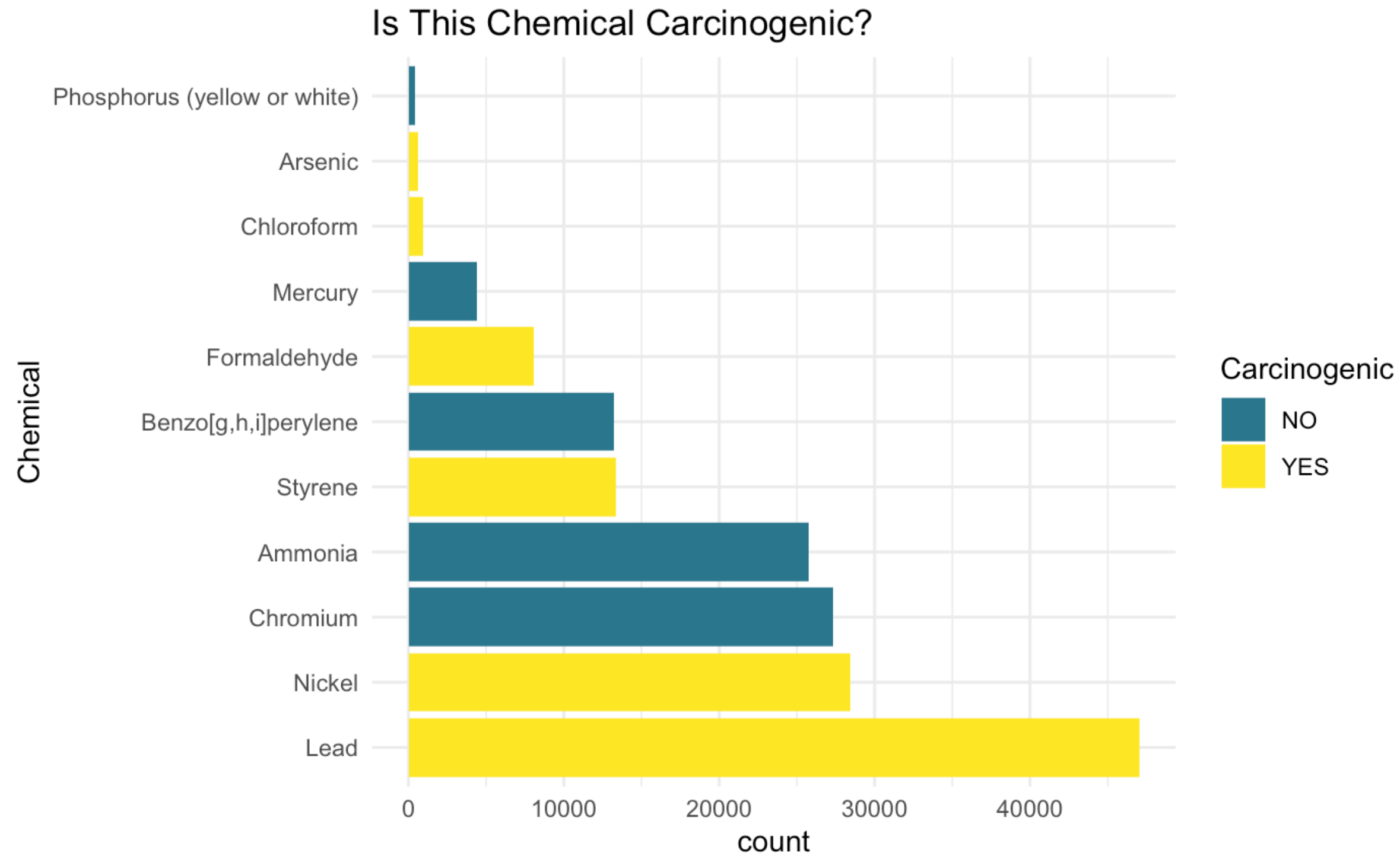
Statistics



Statistics



Statistics

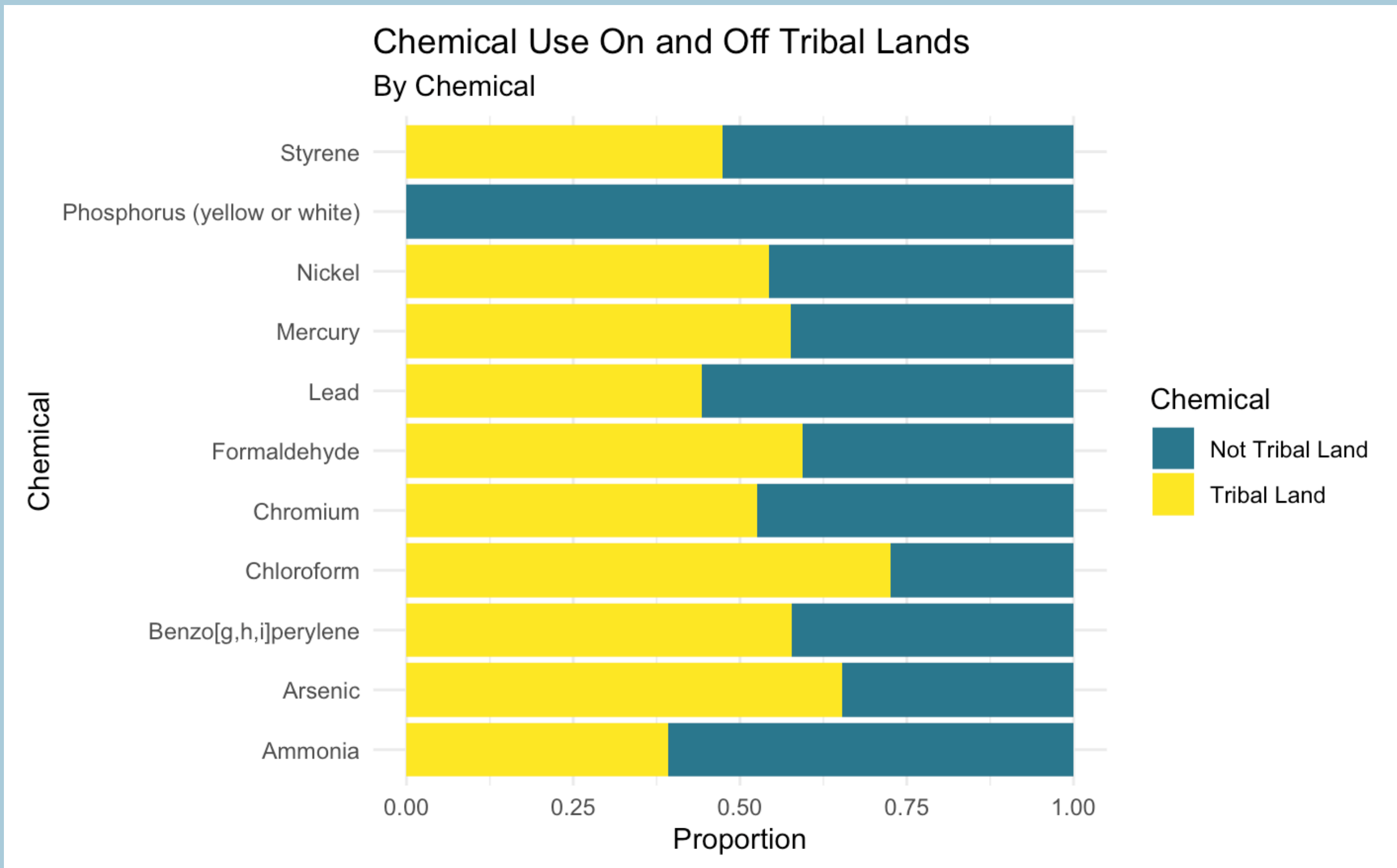


02

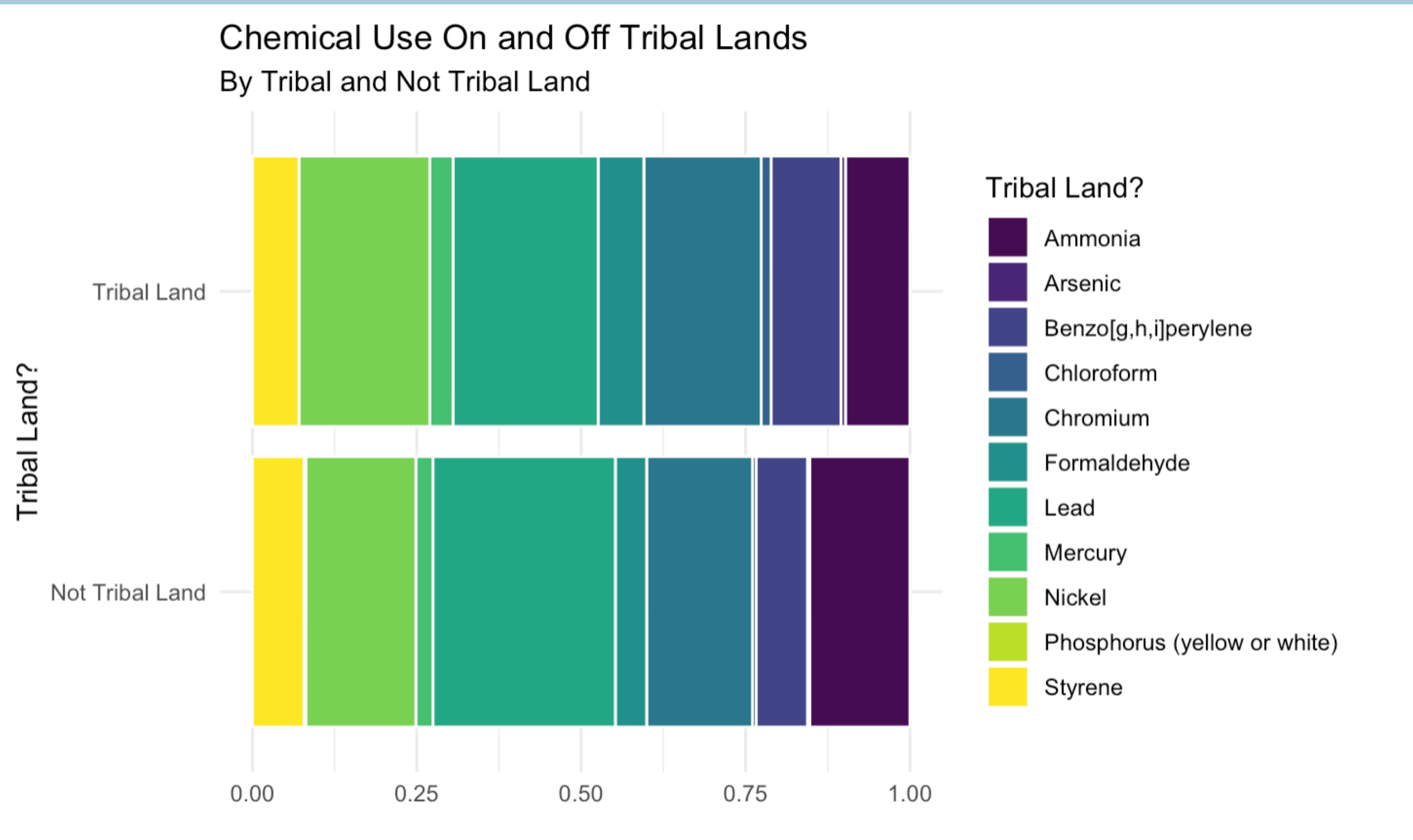
What is the correlation between location and chemical use?

Is there a type/category/attribute of chemical that is most common (ie. Clean Air Act)?

Statistics



Statistics

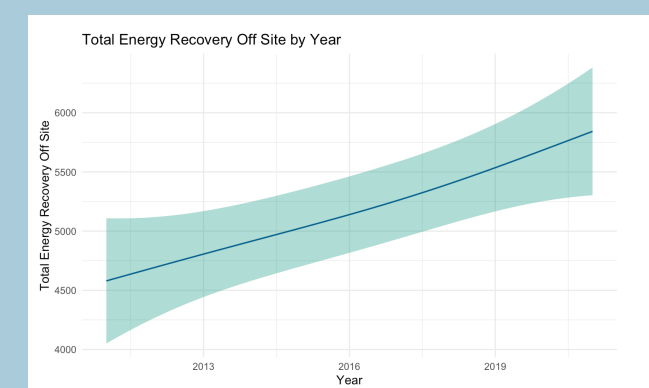
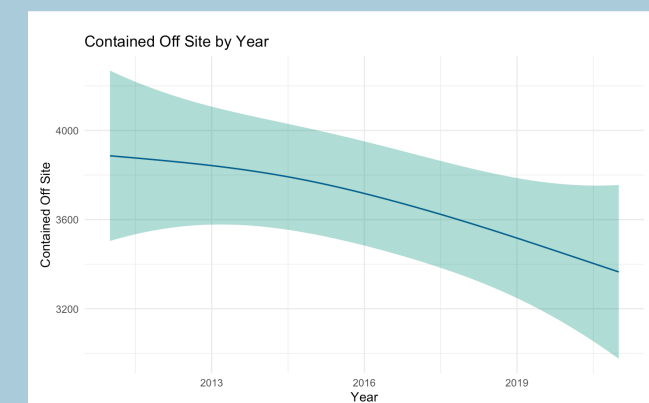
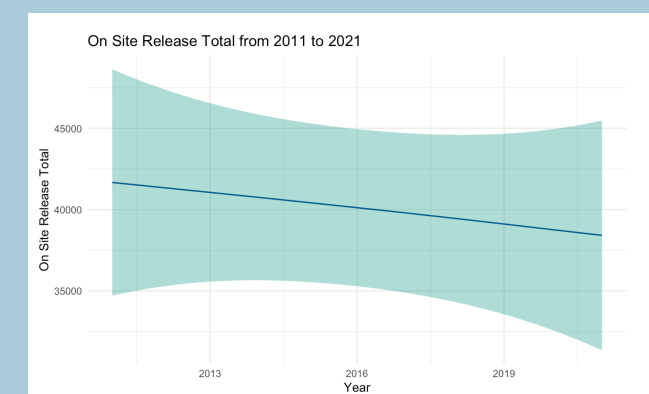
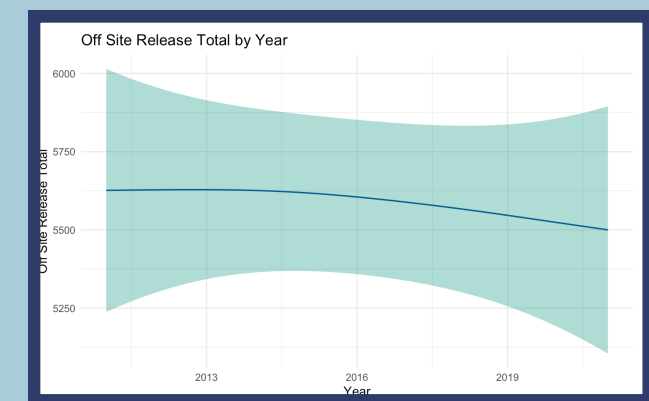
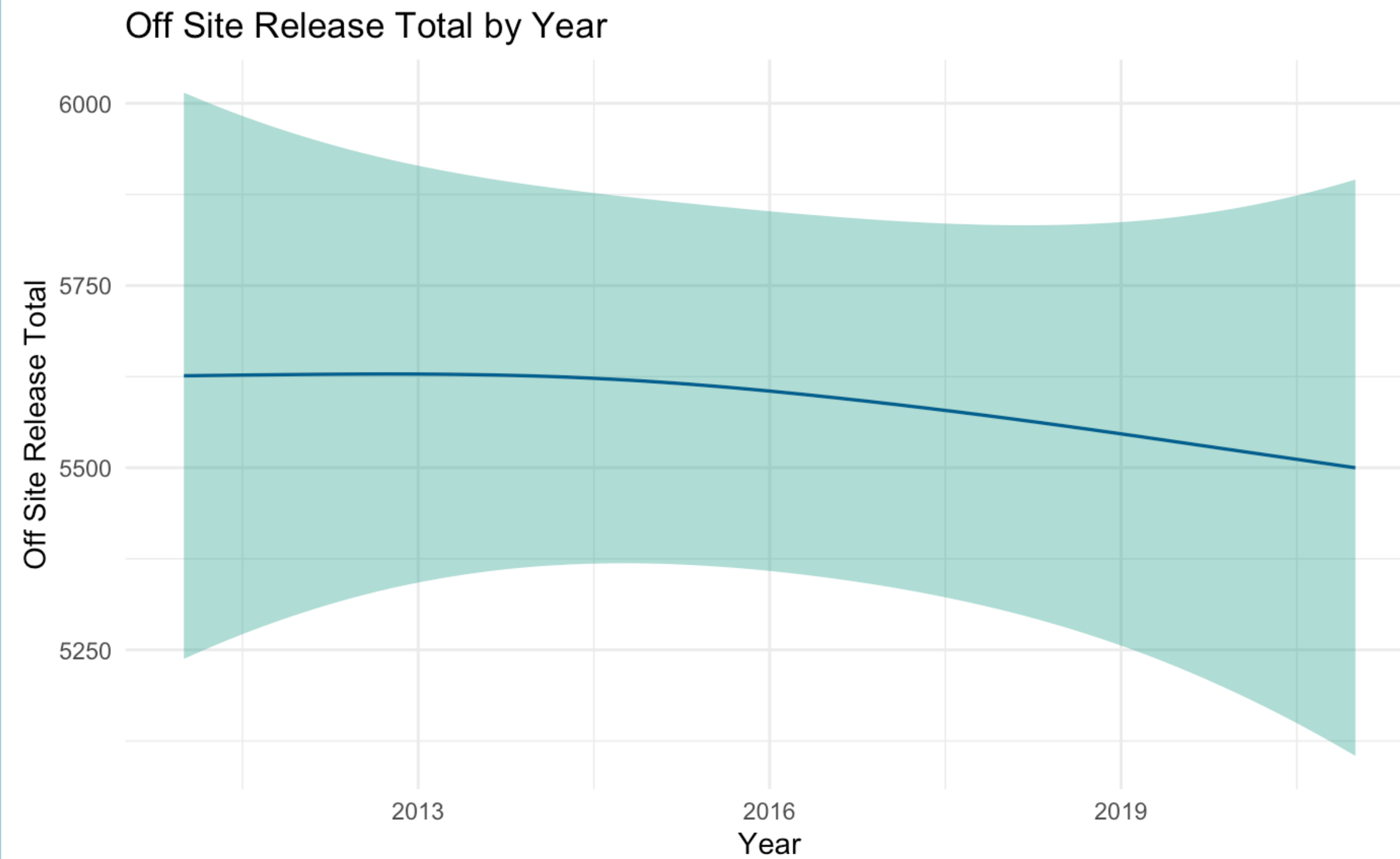


03

What pollution trends are present?

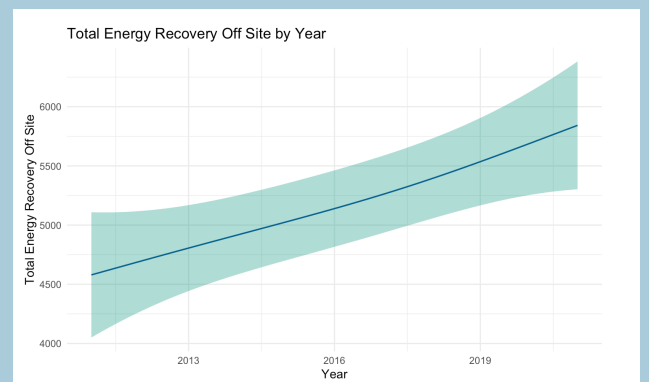
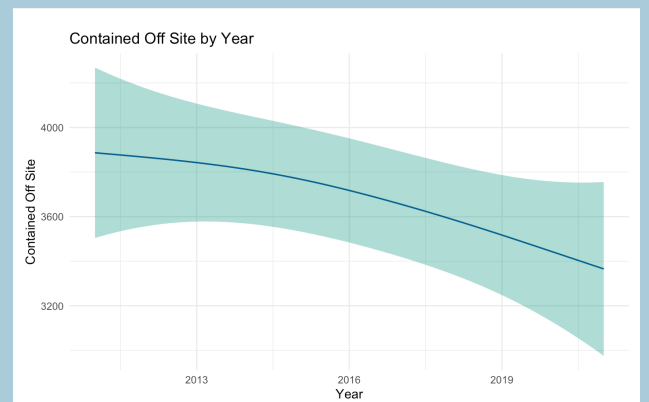
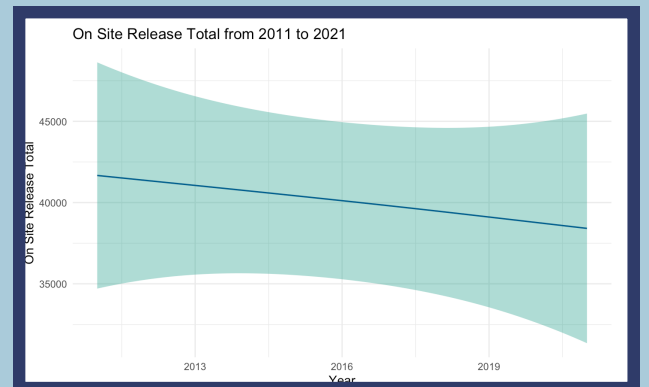
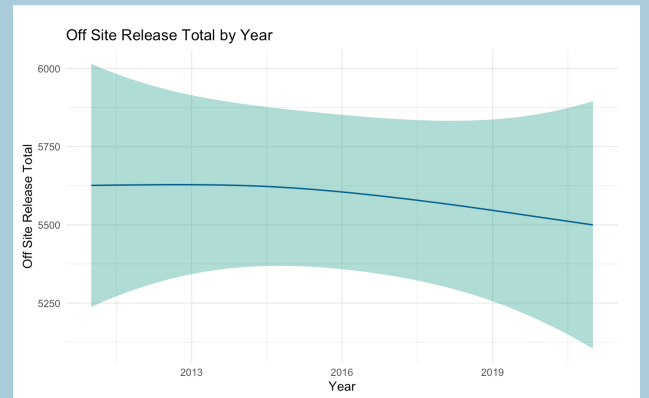
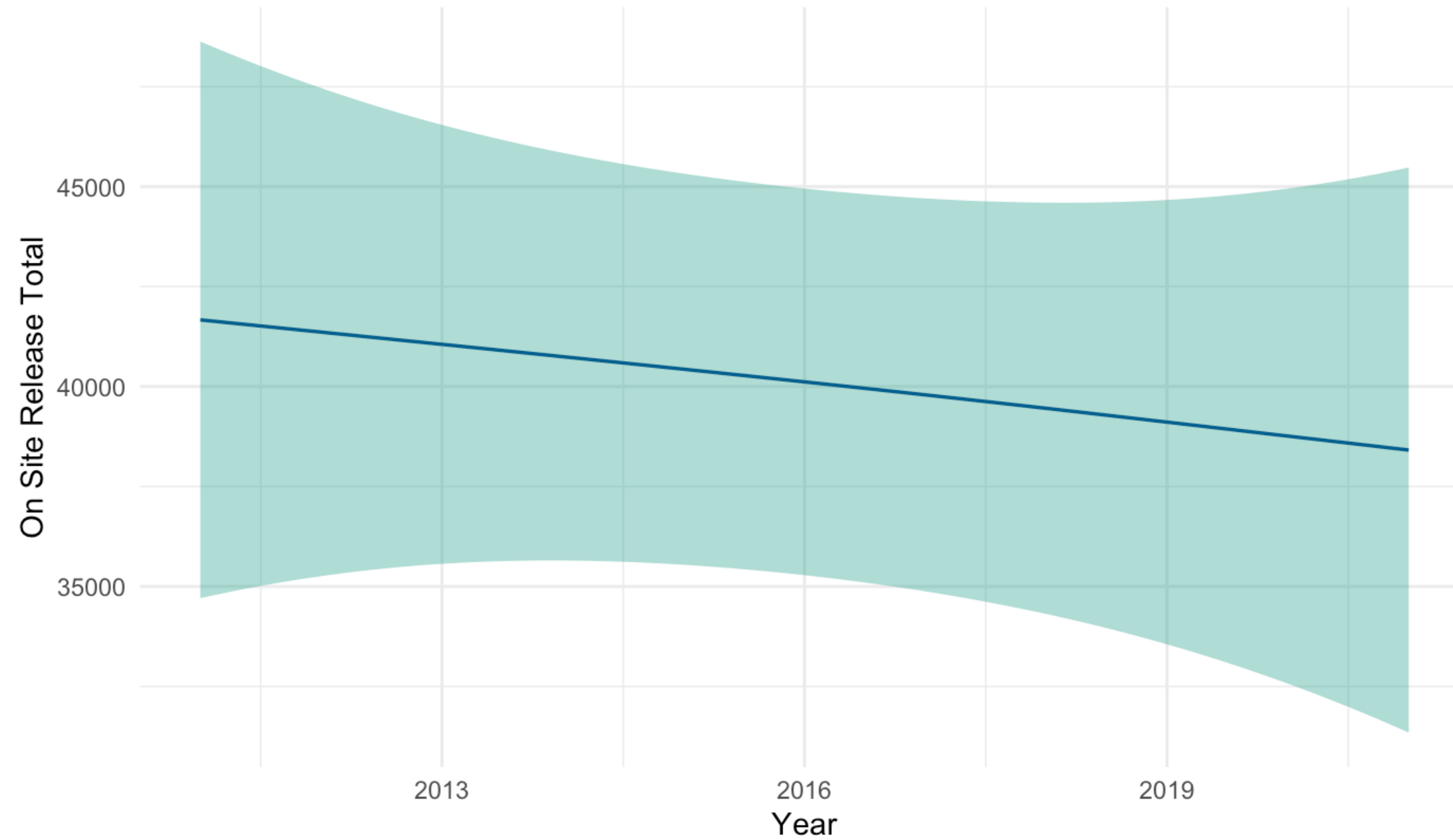
The trends in air, ground, and water disposal? Whether on-site or off?

Statistics

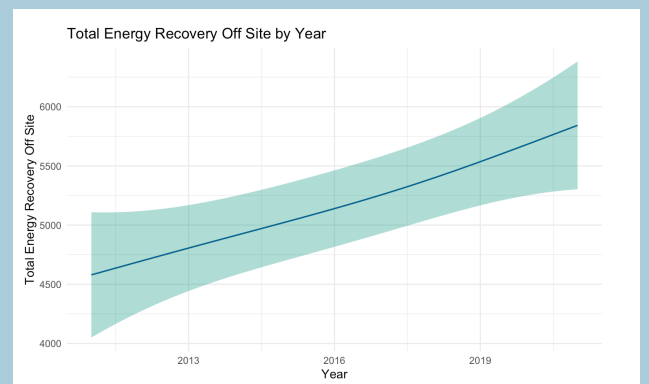
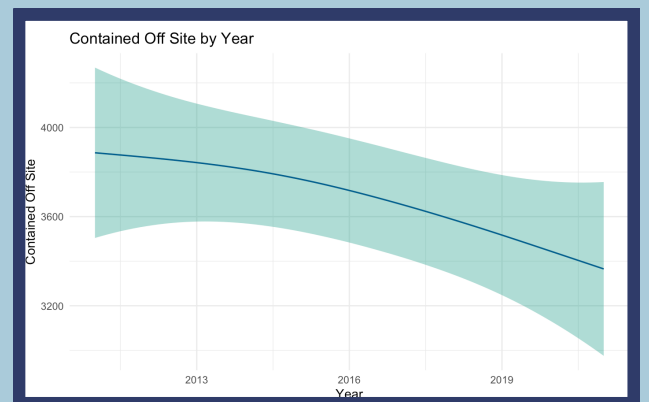
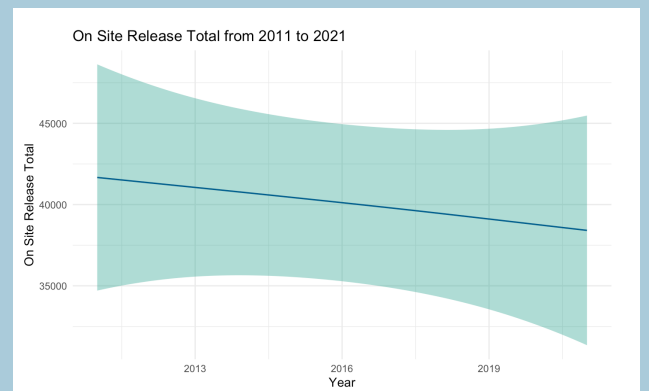
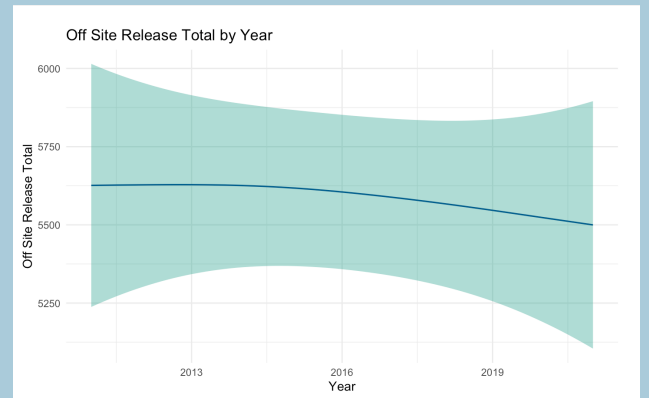
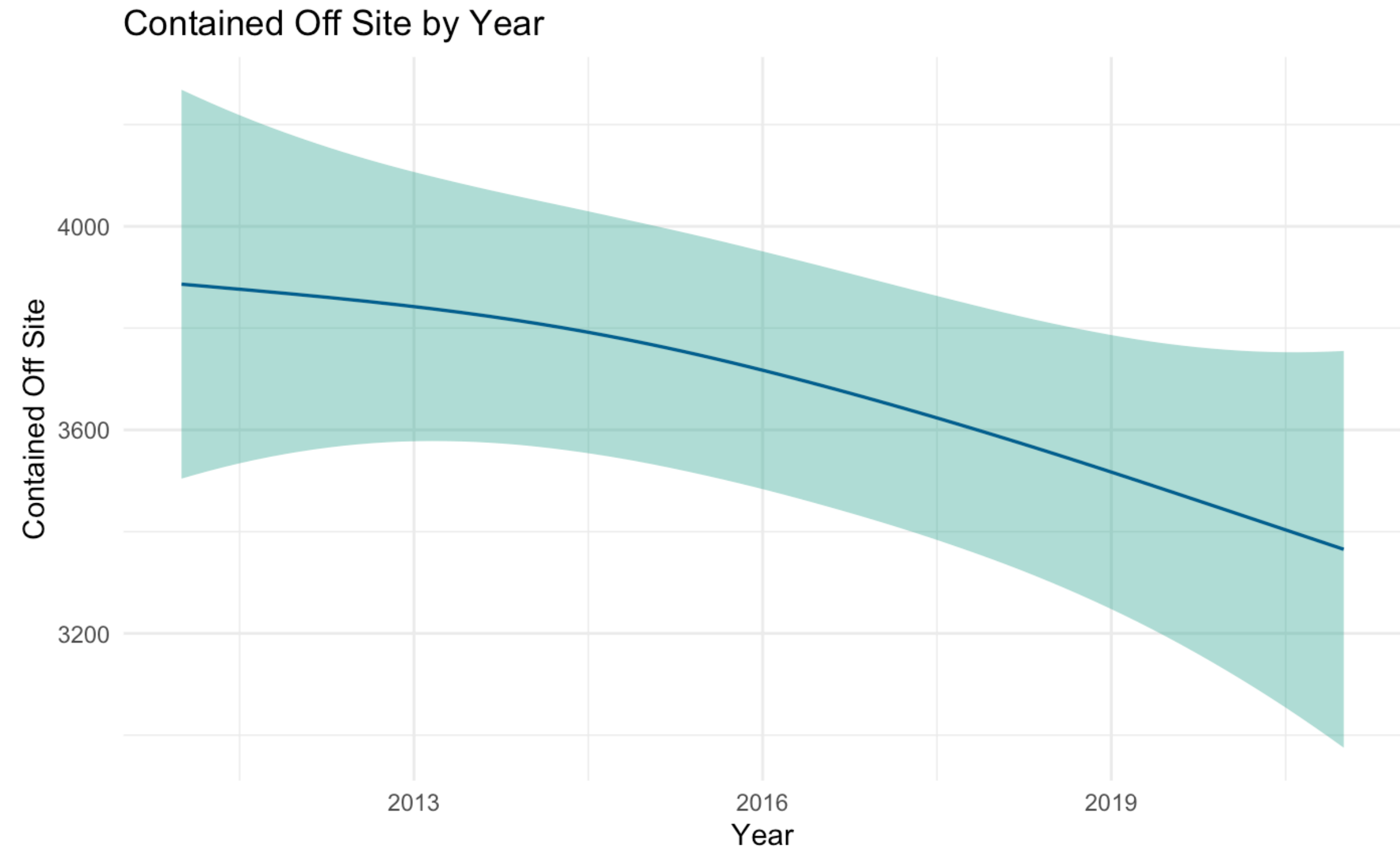


Statistics

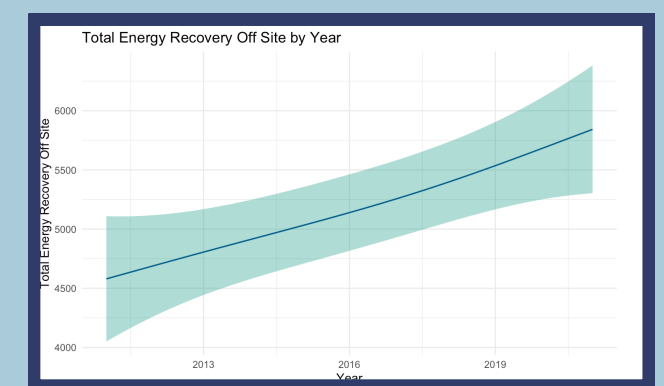
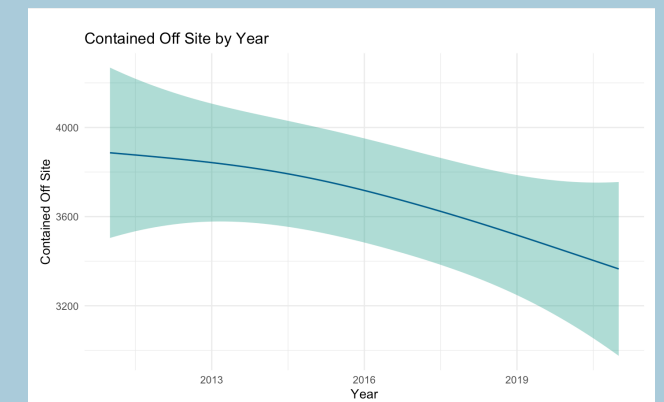
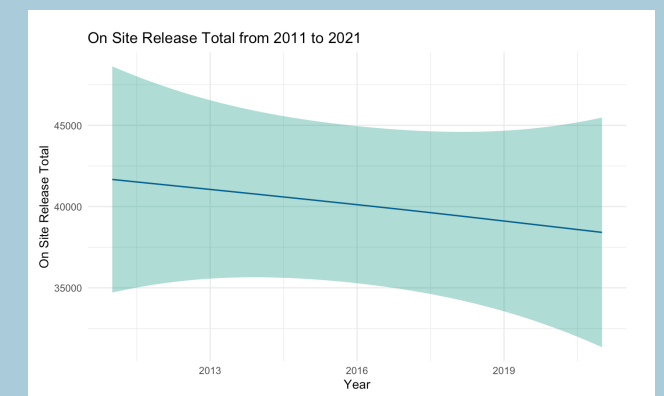
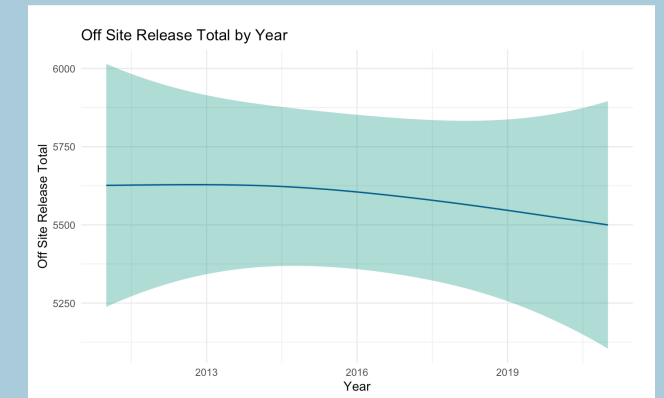
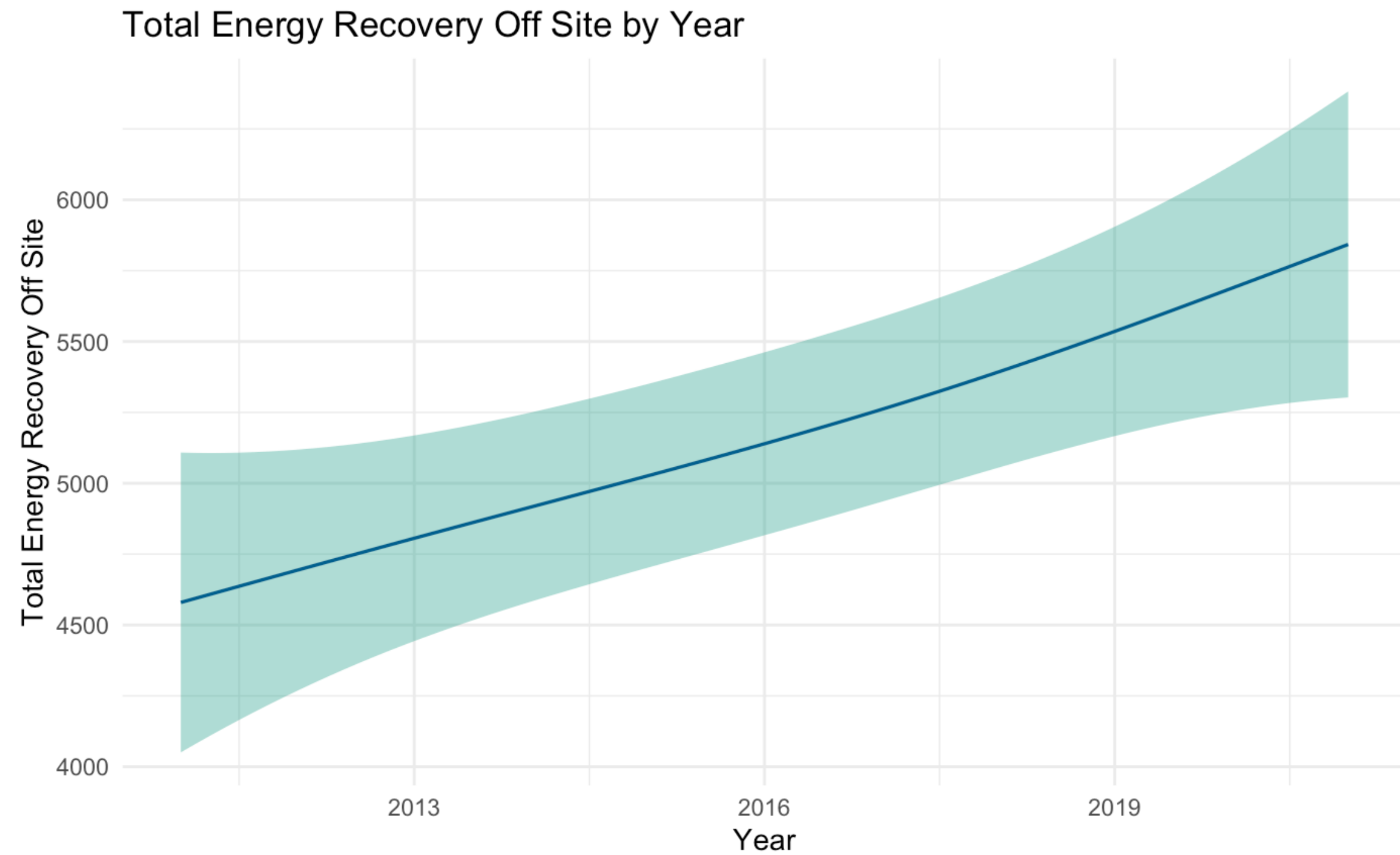
On Site Release Total from 2011 to 2021



Statistics



Statistics



Conclusion

Generally, pollution and
① releases have decreased over
the past 10 years

② Out of the 11 chemicals we
chose to analyze, 7 are used
more frequently on tribal land
than off

③ Energy recovery has greatly
increased

The Not-Findings

- Prevalence of PFAS use
 - ✔ (because we know they've been in use since the 1940s)
- In depth analysis of chemical use, industry sector, and chemical release on tribal lands
 - ✔
- Distribution between federal and private facilities
 - ✔

Next Steps?

- Analysis of timing of
 - ✓ regulations and chemical controls
- Prevalence of chemicals used
 - ✓ in each state throughout the entire TRI
- Adding analysis of reporting
 - ✓ threshold to disposal and release

- ✓ Prevalence of chemical use on and off tribal land
- ✓ Finding and adding PFAS data from before 2020
- ✓ Analyzing all data from the TRI
- ✓ Analysis of specific health and environmental effects

Thank you!

& stay safe

check where your products are coming from

look at their impacts