

Preregistration

Carbon sequestration in shelterbelts surrounding Alberta cropland

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Data collection	Yes , the data comes from https://doi.org/10.5061/dryad.0zpc86711 and this data was created into a paper by (Gross et al., 2022).
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Hypothesis

How much carbon do the shelter belts of Alberta sequester and what is the benefit of this? (Huffman et al., 2015)

Dependent variable

Amount of carbon stored in each individual plant.

Conditions

The conditions for the collection of this data is that the vegetation being studied must be located in Alberta and it must be surrounding cropland. Additionally these vegetation must be in the form of trees or shrubs.

Analyses

Analyses will be done by using statistics incorporated into R packages
 - the type of statistics and what packages will be used still must be decided.

**Outliers and
exclusions**

Outliers will be identified when cleaning data by using R code.

Sample size

Sample size for this mini project is 10 (hedge grows and shelter belts).

Other

My plan for my own data from Saskatchewan will be added to this preregistration.

Study type	Observational/archival study
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References

- Gross, C.D., Bork, E.W., Carlyle, C.N., Chang, S.X., 2022. Agroforestry perennials reduce nitrous oxide emissions and their live and dead trees increase ecosystem carbon storage. *Global Change Biology* 28, 5956–5972. <https://doi.org/10.1111/gcb.16322>
- Huffman, T., Liu, J., McGovern, M., McConkey, B., Martin, T., 2015. Carbon stock and change from woody biomass on Canada's cropland between 1990 and 2000. *Agriculture, Ecosystems & Environment* 205, 102–111. <https://doi.org/10.1016/j.agee.2014.10.009>