Radionuclide and Heavy Metal Concentrations in Australian Riverways

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## Research Questions:

* How has the Ranger Mine contaminated the surrounding Alligators River Region with radionuclides and metals.
  + Where are the sample types of interest located in relation to the mine?
  + How does the concentration of radionuclides and metals change with distance from the mine?

## Problem

Have you made a convincing case that this is an important or interesting problem?You could meet this criterion even by convincing me that this is a problem that just one of you is passionate about (as an example, see here).

Are the data that you chose to use reasonable for answering the question? Have you explained any caveats or limitations to the data that I should keep in mind when interpreting your results? As an example of how to do this for an analysis with secondary (imperfect) data, see how this post handles describing the data it uses, particularly in footnotes 1 and 3 and the sentences in the main text that correspond to them.

## Analysis

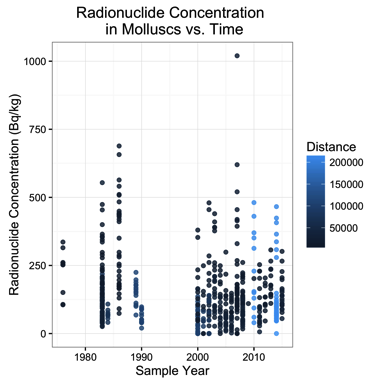
Have you explained the way you analyzed the data clearly enough that I think that I could reproduce your analysis if I had your data?

Have you explained a bit why your method of analyzing the data is appropriate for your question?

Have you let me know about major caveats or limitations related to the methods of analysis you’re using?

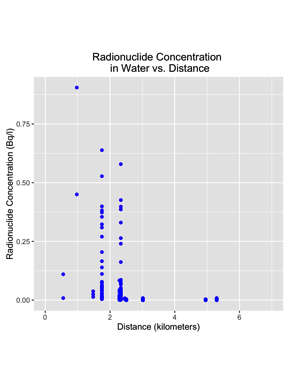
## Results

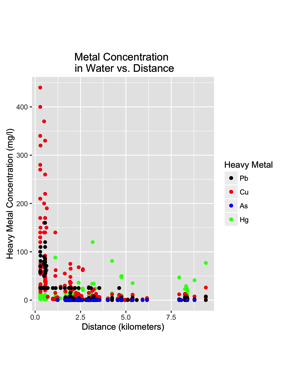
Below are the results for the radionuclide concentration (Bq/Kg) in Mulluscs as a function of the year sampled. The color of each point is scaled by it's proximity to the mine.



If the presence of the mine had a direct impact on the radionuclide concentrations in the environment, one would expect to see concentrations of radionuclides increase over time from the point before the mine was established to after. However, there is no apparent data to indicate an upward trend in radionuclide concentration over time, nor does the radionuclide concentration seem to depend on distance for a particular year.

The fluctuations in radionuclide content is most likely caused by naturally radionuclide concentrations in the local geology. There has been a presence of radionculides in the surrounding geology preceding any excavation from the mine.

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Is it clear what each is showing and how I should interpret it? (For a nice example of explaining how to interpret results, see footnote 4 here.) Have you explained and interpreted your main results in the text? Have you pointed out any particularly interesting observations (interesting outliers, for example)?

When I’m finished with your article, do I have more insight into your research question than when I started? ##Further Research