Task 2

Task 2.1: Explain/demonstrate the steps of how you would select the 10 most commonly encountered genera from the first file and add the average bottom water temperature values from the second file to the selected survey records. The expected outcome would be a spreadsheet (.csv).

I would again create an r script to perform all data analysis. In the script I would load the libraries terra (to work with rasters), sf ( to work with spatial data), and tidyverse ( to work with data). Using these packages I would load the data into r.

I would first count the number of records for each species using the function count\_ and select only the top 10 species. I would then use this vector to select only these top ten species in the original file using dyplr::filter\_. I would then use the sf package to convert the file to a spatial object with the same crs as the raster of ave temperatures using the sf::st\_to\_sf function. It is always best practice to convert a vector to a different crs rather than a raster if possible.

I would then get the temperature at each point location in the species file from the raster layer using terra::extract\_. I would then convert this back to a normal tibble using st\_drop\_geometry and save it as csv file.