**Climate or other Human Related Impact to Biodiversity and Biomes Including Constructing Climographs In Excel**

**These projects will be presented to the class. Everyone must have a different species to present on**

**Part 1:** You must find an example of a current change or predicted change in species diversity that is being caused by climate change or other human cause. This could be a plant or animal. It can include introduced species, a population change of a species, migration pattern changes, human interactions… Here are some example ideas:

* The spread of Zika virus or other Mosquito Borne Viruses
* Spread of the Wooly Adelgid
* Accidental Burmese Python introduction to Florida
* Mountain Pine Beetle impact in western US
* Monarch Butterfly population decline
* Deer population in New England
* Sage Grouse vs. Oil/Gas Industry

For this part, you will be researching the aspects of the species itself and how it interacts with other species within its range/biome.

* What are the key background details and history of this species?
* Where does it originate, what type of biome(s) does it naturally live in?
* How has its range been impacted by climate change or other human impact?
* What impact has the change in this species had on other species or the biome(s) it is found in?
* What are the future predictions for change? What (if anything) has been done to counteract this change? Government Regulations? Non-Governmental Organizations?

Please use a mixture of both academic papers and standard articles. Please use in-text citations and create a citation page.

**Part2:** For this portion of the project you will construct Climographs for 2 different biomes that the species is found in (natural or introduced). If the species is only found in one type of biome, please choose a second biome that might be the next best fit. First you must select locations.

To do this, first use the map on page S33 at back of the book to pick the locations. You may need to do further research to find the names of cities in that area to pick.

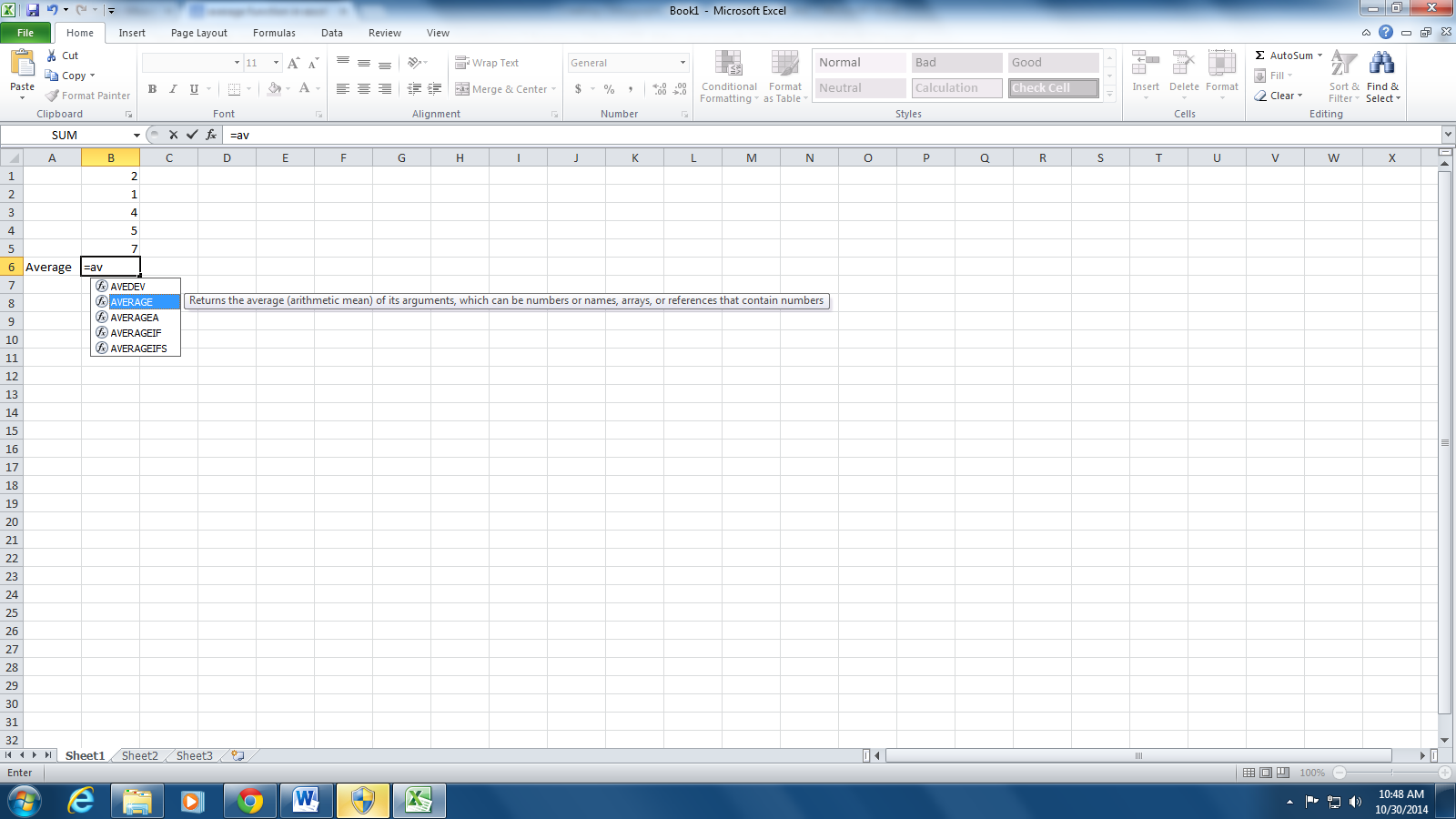
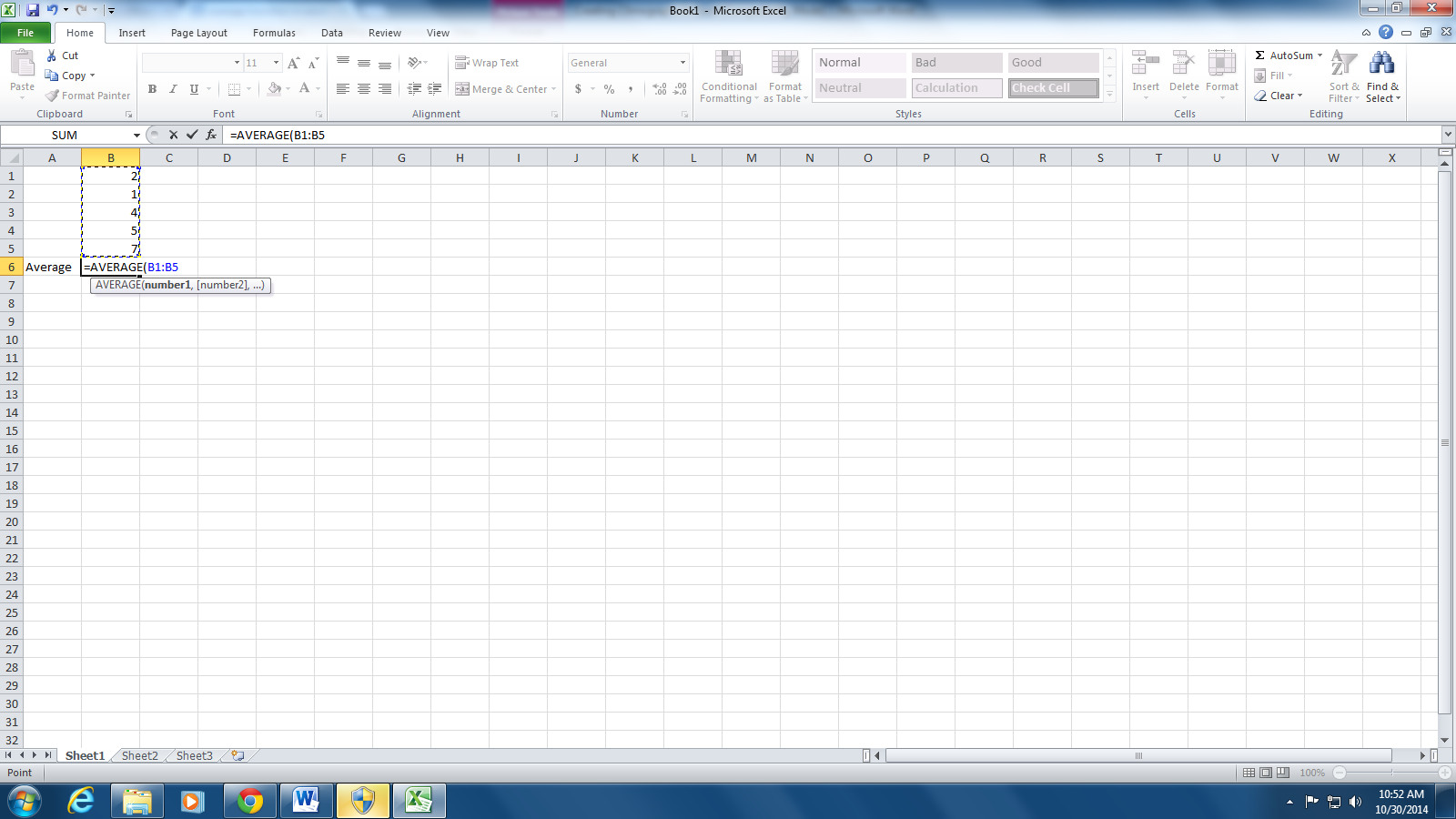
Once you have selected your locations, go to <http://www.climate-charts.com/> to find climate data on each location. You should be able to copy and paste the data into an Excel spreadsheet.

Next keep only the rows for the Months, Mean Temperature data in Celsius, and the Mean Precipitation in mm. Delete all the other rows.

Next you must transpose the data, which means turn the rows into columns. To do this you must highlight the data and copy it. If you right click, choose “Paste Special”. In the box that comes up click the “Transpose” box at bottom. If you are having trouble, google “transpose cells in excel” for more help.

Once you are to this point, use the handout on making climographs in excel. This document will also be on my webpage.

Lastly, for each set of data you must calculate the average yearly temperature and total yearly precipitation for each biome. To do this you must use the AVERAGE and SUM functions in excel. To do this, at the bottom of the appropriate column. Hit “=” key and start to type “average”. You will get list like you see below left. Click on the correct function. Then select the data you want to average with the mouse (see below right). Do the same using the sum function for precipitation.

**Part 3:** Once you have finished Parts 1 and 2, you will create your presentation.

Please correctly cite any information you use.