
Re: ES322 Task 6-3 - Glacier Lab Exercise - Further Detailed Explanation

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Hi ES322 Team Geomorph - As a follow-up to last week, Sean asked some good questions about how to approach the glacier / excel lab in Task 6-3.

Here some clarification for tasks / instructions on p.1-2 of the assignment, from the instructions (first thing, read all of the instructions carefully before starting the assignment, and download /open the Excel data file... the following explanation will make more sense):

https://people.wou.edu/~taylors/g322/ES322_Cascade_Ice_Volume_Lab_Exercise.pdf

<https://people.wou.edu/~taylors/g322/mtnicevol.xls>

(1) Tables 1-4 are glacial ice budgets for the total mountain area: Rainier, Hood, Shasta, Sisters, respectively. The data for each mountain are divided into drainage basins, in which several or more individual glaciers are located.

The excel spreadsheets are located at the following URL on the class web site:

<https://people.wou.edu/~taylors/g322/mtnicevol.xls>

download the excel data sheets, and open in excel, MS Office.

(2) Table 5 A and Table 5B is where you are going to summarize and tally total ice budgets for each mountain, based on the individual glacier-drainage basin data from Tables 1-4 (raw data) Table 5A, for drainage basin at each mountain, you will add up all of the glacier patch areas and volumes. In Table 5B, you will then add up all drainage basin totals, to give an individual mountain total ice area and volume.

Note: for Table 5B, the water equivalent volume and elevation latitude coefficient equations are shown below the table.

You will want to use excel functions to add up all of the volumes and areas. The appropriate function is "=sum(cell range)"

Here is a youtube instructional video on how to "total" or add up columns of numbers in excel

<https://www.youtube.com/watch?v=UgeEeEESJxE>

Once you total up the ice volumes and areas in tables 1-4, you can then copy and paste those values into the Table 5A and 5B spreadsheets. When you paste, make sure to "paste as values" in the destination spreadsheets.

<https://www.youtube.com/watch?v=PbRQBse3Ob0>

(3) Once you have all of the data tabulated and summarized in Table 5 A and Table 5 B, you will then use Excel charting tools to plot the graphs.

see the links for the instructional videos on how to use excel for graphing, as posted under task 6-3 on the class web site:

<https://www.youtube.com/watch?v=Xn7Sd5Uu42A>

https://www.youtube.com/watch?v=_Txpfyn4ipl

(4) Once you get the data tallied in Tables 5 A and 5B, then you are ready to create a series of graphs so you can visually compare the ice volumes and areas at the various locations, using tables 5A and 5B.

For the scatter plots, you are using Table 5B as the data source, and comparing the entire mountain ice budgets.

For the histograms, you are plotting each drainage basin for each mountain (chart 1-8, each mountain will have it's own histogram, using Table 5 A summary)

For histograms in Charts 9-10, you are plotting the 4 mountains total, all ice in all drainage basins, in each histogram.

Hope this helps clarify the process. We can follow-up in class next Tuesday as needed. It will easier to sit in the lab with computers, and explain the process, rather than email... but this is a start on how I would approach it.

Depending on your previous experience with Excel, there are other ways of arriving at the same result.

If Excel access is a problem, a good old fashioned calculator and graph paper, plus pencil, will get you to the same place by following the instructions.

More this Tuesday, as needed. This exercise is straight forward, but involved, depending on your Excel experience.

s.t.