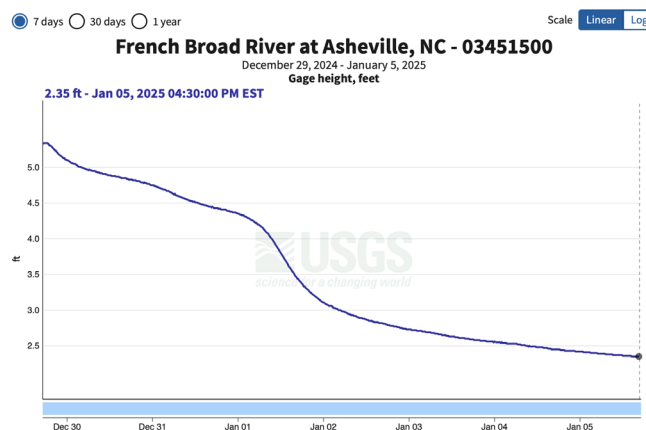


## Lesson 2.2 (Measuring Stream Discharge) Data Exercise

1. Open a spreadsheet program (Google Sheets or Microsoft Excel). Make a table with two vertical columns titled “Date (years)” and “Stream Discharge (cfs)”. See example to right.

	A	B
1	Date (2024/25)	Stream discharge (cfs)
2	Jan 15	3340
3	Feb 1	3190
4	Feb 15	2330
5	Mar 1	1860
6	Mar 15	2380
7	Apr 1	2080
8	Apr 15	2380
9	May 1	1800
10	May 15	2330
11	Jun 1	1410
12	Jun 15	1090
13	Jul 1	963
14	Jul 15	770
15	Aug 1	1440
16	Aug 15	987
17	Sep 1	892
18	Sep 15	696
19	Oct 1	10200

2. Using the United States Geological Survey (USGS) Current Water Data webpage (link: <https://waterdata.usgs.gov/nwis/rt>), find a flow gauge station on a river in your state.
  - a. First click on your state on the United States map
  - b. Then click on one of the colored dots representing an individual flow monitoring station.
  - c. Then click on one the blue 8 to 10-digit numbers on the popup window which will open a page with the graph of today’s flow. The page should look something like the screenshot below.



3. Expand the range of data displayed by selecting the “1 year” button on the top left.

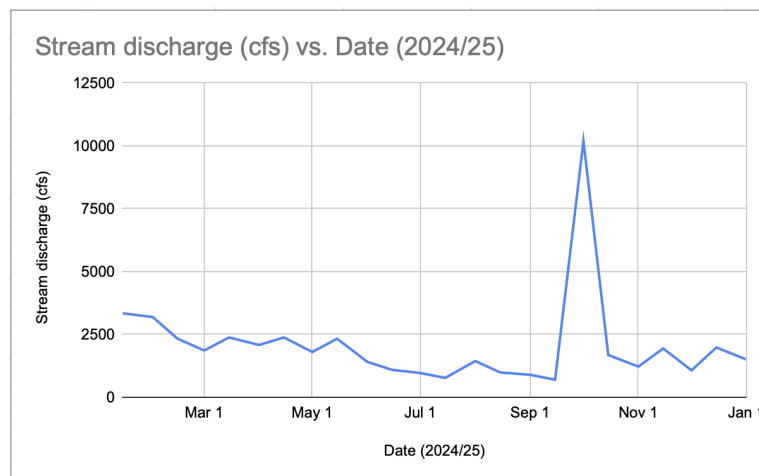
4. Scroll down and choose the “Discharge, cubic feet per second” button.
5. By moving your cursor carefully along the graph, find the highest stream discharge of the past year and record it below.

Discharge: \_\_\_\_\_ Time and date: \_\_\_\_\_

6. By moving your cursor carefully along the graph, find the lowest stream discharge of the past year and record it below.

Discharge: \_\_\_\_\_ Time and date: \_\_\_\_\_

7. By moving your cursor carefully along the graph, find the discharge (in cubic feet per second) as close to noon as possible on the 1st and 15th day of each month of the past 12 months. The time and value is displayed on the upper left top of the graph.
8. Record the date in the first column (for example in the format of “03/01/2024” – make sure the year is correct). Record the streamflow discharge value on your spreadsheet in the second vertical column for the corresponding date.
9. Once you have completed your table, make a chart of your data. Choose the “Line chart” option for chart types and make sure your axes and chart are labeled (by including the column titles in your data selection). It should look something like the screenshot below,





10. Insert a screenshot of your table and chart below.

## Analysis questions

1. Calculate the average stream discharge for your river in the:
  - a. winter months (January through March)
  - b. spring months (April through June)
  - c. summer months (July through September)
  - d. autumn months (October through December)
2. Which season has the highest average stream discharge? Why do you think that is?
3. Did your data table and graph include the highest and lowest stream discharge of the year for your river?
4. If it did not, why not?
5. With your knowledge of stream ecosystems, what would three potential impacts be of excessive stream discharge (a flood)?
  - a.
  - b.
  - c.
6. With your knowledge of stream ecosystems, what would three potential impacts be of insufficient stream discharge (a drought)?
  - a.
  - b.
  - c.
7. What are two potential impacts of climate change on stream discharge in the future?