Analyzing Hometown Streams Using On-line USGS NWIS Data

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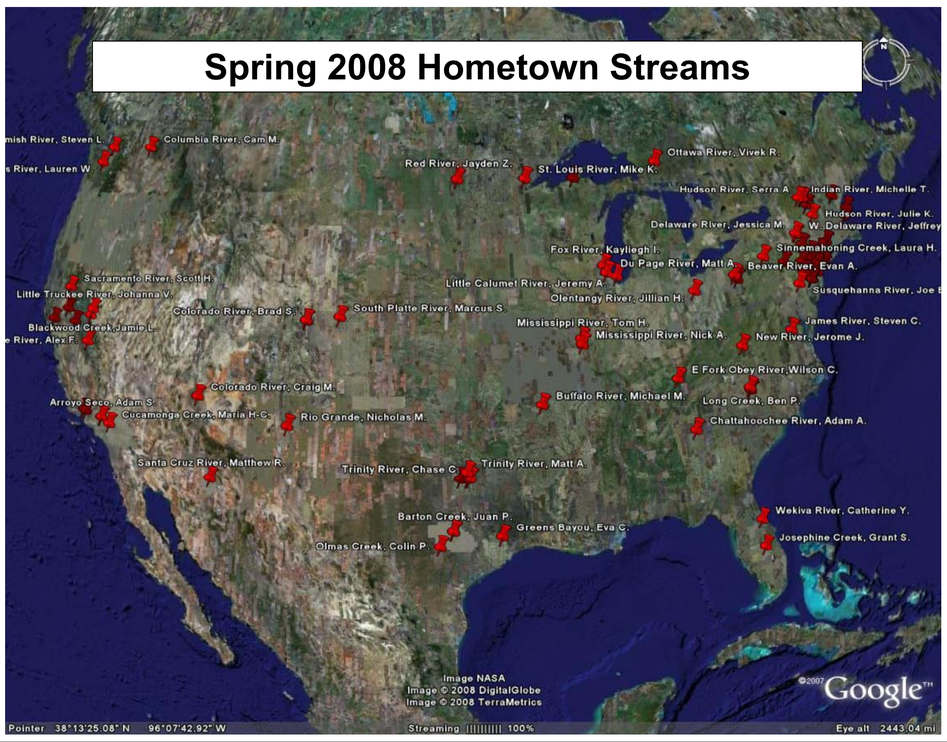
Preparation

Recall the Stony Brook Lab

During a previous field trip to Stony Brook, a local stream, students examine the stream and flood plain, find evidence for high-discharge events, measure discharge, see the gauging station and examine historical discharge records.

Choose your own stream

Choose a stream of personal interest with at least 30 years of NWIS discharge data, and gather personal knowledge/background information about the stream.



Activity Summary

During a previous field trip to a local stream, students examine the stream and flood plain, find evidence for high-discharge events, measure discharge, see the gauging station and examine historical discharge records.

Then, to prepare for this 2-week lab exercise, students chose a stream that was of personal interest to them and had at least 30 years of NWIS discharge data, and also gather personal knowledge and background information about their stream.

In week 1 of the exercise, the instructor uses Stony Brook data to model the project by a) downloading NWIS discharge data and graphing a typical years worth of daily discharge, peak annual discharge for the years of record, and making a flood frequency graph and b) integrating background information into an analysis of the stream's discharge.

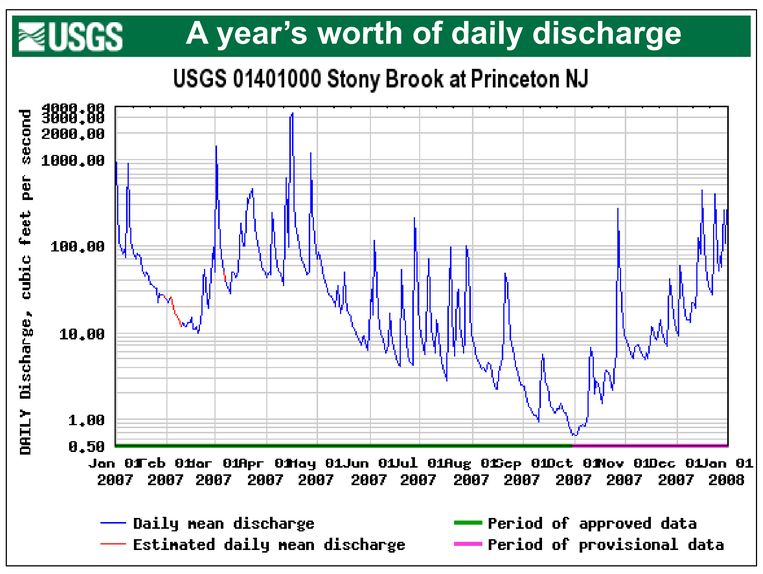
Students then do this for their own streams.

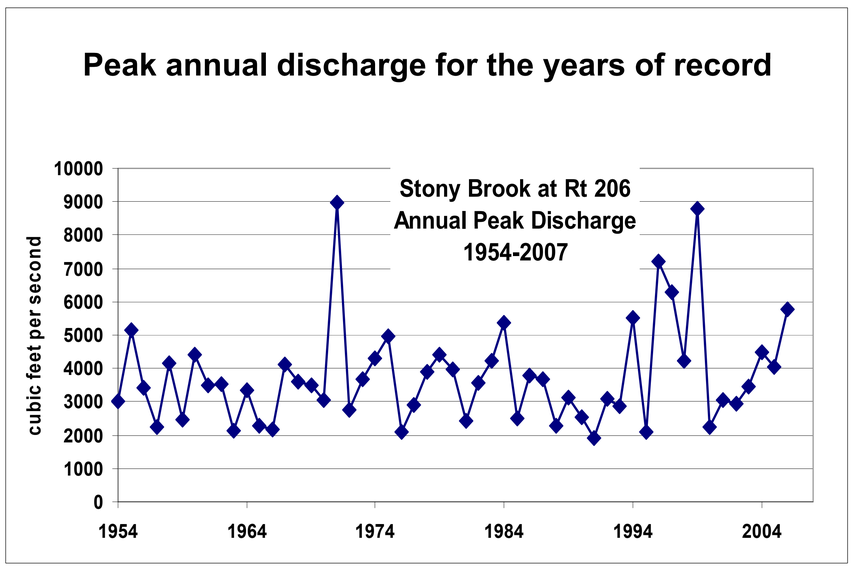
In week 2, students hand in comprehensive written reports and give 5-minute oral presentations focusing on particularly interesting aspects of their stream analyses.

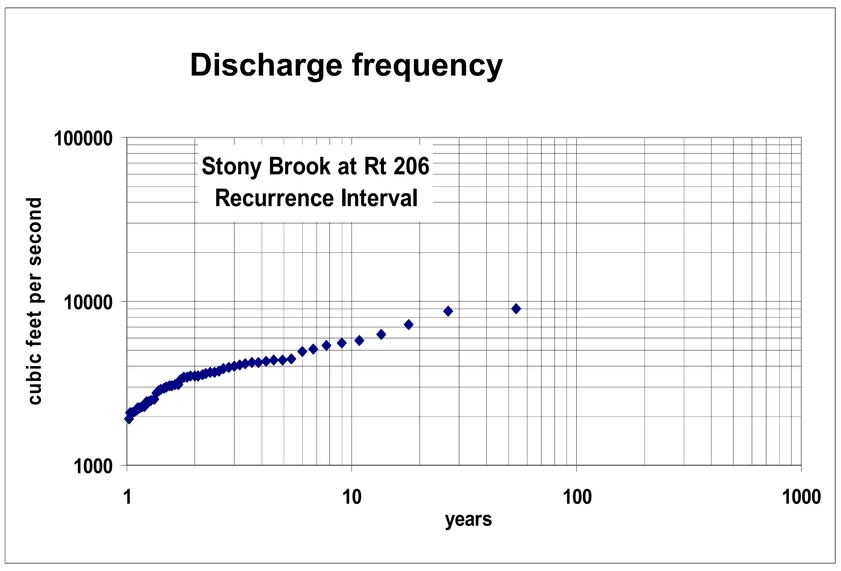
The activity involves students in accessing and analyzing real data, integrating background information into a technical analysis and presenting their results in both written and oral form.

They also gain experience with Microsoft Excel and PowerPoint, and via the oral presentations, learn about streams that are in many cases quite different from their own.

The instructor uses local Stony Brook data to model the project by downloading data from the NWIS website into EXCEL and graphing:







Students then do this for their own streams, and prepare:

- Comprehensive written reports (see examples provided)
- 5-minute oral presentations focusing on particularly interesting aspects of their stream analyses

72% of students rated the exercise as either "*Great*" or "*Good*":

"I enjoyed learning about the river right by my house. It also helped me to better understand recurrence intervals and overall how to use excel."

"I liked learning more about one particular river, and in doing so I learnt a lot more about river processes. This was a great way to study this topic as you are doing it through studying something that is interesting and directly relevant to you."

"I enjoyed the presentations of my peers and learning a bit about my own waterway as well. It seemed like a good way of exposing ourselves to a wide range of rivers and the issues associated with them without each of us having to do all of the research ourselves."

"I learned a lot about my stream and it led me to be more interested in related matters (I'm trying to get an internship assisting the development of policies related to the maintenance of living rivers in the Southwest)."

"I really enjoyed this one. It was not only very informative getting to examine a river from my own area, but it was also fun getting to present that information to the rest of the lab class."

"It was cool to do a powerpoint presentation."

"Yes, fun to get to know a river close to home and the issues surrounding it. Probably the best lab."