

Focus Points for Discussion of

Bull, W. B. (1979). "Threshold of critical power in streams." *Geological Society of America v. 90*: p. 453-464.

NOTE: This is a rather theoretical paper; you should plan on reading it several times!! If you do not understand the vocabulary look up words in Ritter or other geology textbooks. Dictionaries of geologic terms are available.

1. What is a threshold in geology? Can you think of some examples from this paper and from other fields of geology?
2. define a graded stream in your own words.
3. what are some of the independent variable in the climate system and how can they affect the behavior of a stream channel?
4. what is stream power and what are the variables that control it?
5. what is critical power and what are the variables that control this?
6. what is the threshold of critical power?
7. what is the difference between capacity and competence?
8. what do streams do if the threshold of critical power is exceeded? If not exceeded? If equal to 1.0?
9. how can you tell from looking at a stream valley whether the threshold of critical power is >1.0 ? < 1.0 ? $= 1.0$?
10. Why do high order streams attain a threshold condition more rapidly than low order streams?
11. what is the significance of parallel stream terraces?
12. how do terraces form along a stream channel?
13. what are strath terraces? Fill terraces?
14. how do the affects of tectonics differ from those of climate change on the behavior of a stream channel?
15. Do you think that streams can ever achieve equilibrium?
16. From an environmental standpoint, why are some streams more sensitive to environmental impact than others? If you worked for a consulting firm and were asked by a client to evaluate the impact of real estate development on a local drainage basin, what would you look for? How would you design your study?