**ES322 Geomorphology Reading Review Questions Journal Article Summary**

Harvey et al., 1999, Response of Alluvial Fans to the Late Pleistocene to Holocene Climactic Transition, Mojave Desert Region, Nevada and California

Read the journal article on U.S. southwest desert processes and climate located at the following URL:

<https://people.wou.edu/~taylors/g322/Harvey_1999_Climate_Alluvial_Fans_Mojave_Desert.pdf>

Using the journal article, and your favorite web search tools, answer the following questions, provide sketches or image capture where required.

1. Define the following key words, concepts, or phrases used in the publication:
   1. Late Pleistocene geologic time period
   2. Holocene geologic time period
   3. Quaternary geologic time period
   4. Mojave Desert
   5. Pluvial Lake
   6. Pluvial Lake Lahontan
   7. Pluvial Lake Mojave
   8. Soil chronosequence
   9. Monsoonal climate in U.S. southwest
   10. Pluvial Lake Highstand vs. Last Glacial Maximum
2. Based on reading the Introduction section, what are the primary factors that influence the morphology and sedimentation processes on alluvial fans in the Mojave desert?
3. Where are the study sites involved in this research located? What is the purpose and focus of this research publication?
4. How do the alluvial fans examined in the study related geomorphically to the pluvial lakes Lahontan and Mojave?
5. Based on the Methodology section, what were the primary field techniques used to investigate the story at hand in the journal article?
6. Summarize the pluvial lake level history of Lahontan and Mojave. What are the key dates with major lake level high stands? How do the highstands relate to late Pleistocene glacial climates in general?
7. What are the primary geomorphic differences and distinguishing characteristics that separate the Group 1, Group 2 and Group 3 alluvial fan surfaces. How are those characteristics related to age of fan surfaces and sediments?
8. Read the Climate Reconstruction section, compare and contrast the late Pleistocene climate reconstructions to the present day / late Holocene climate patterns. Describe the scenarios in terms of:
   1. Weather patterns
   2. Precipitation levels and air temperature
   3. Pluvial lake hydrologic conditions
   4. Geomorphic activity on alluvial fans
9. Provide a 3-4 sentence summary of the changes in vegetation from late Pleistocene to Holocene to Modern in the Mojave region, based on the reading.
10. List and briefly describe the five major conclusions of the study.
11. Provide a 3-5 sentence summary of the most important aspects of desert geomorphology that you learned from this exercise, that you did not know previously.