

GS407 / 507 River Environments – Summer 2003

Day 6 - Lab Exercise 5 Geomorphic Analysis of the Columbia Plateau near Petersburg, OR

Soil maps are created by the U.S. Natural Resources Conservation Service (NRCS) (formerly the Soil Conservation Service) on a county-by-county basis in each state. The soil maps are used for agricultural and development purposes. Soils as defined on the field trip represent post-depositional alteration of surficial deposits and landscape stability between depositional events.

A portion of a soils map in the Petersburg vicinity of Wasco County, Oregon is shown on p. 175 of the field guide. The base for the map is an aerial photograph, soils units are coded with a number and a letter. Pages 176-181 of the field guide provide soil unit descriptions for those shown on the map of p. 175. County soil surveys provide the best approximation of geomorphic and surficial material maps available to the general public. Your goal in this exercise is to simply examine the map, read the soil-unit descriptions, and provide a geomorphic interpretation of the soil survey.

Fill in the table below and answer the questions that follow. I've completed the first entry (map unit "34F") for you to give an example as to how to interpret the soil survey data.

Soil Map Unit ID	Soil Series Name	Landform Association	Surficial Material/ Texture	Slope Gradient	Depositional Process	Bedrock Assoc.
34F	Nansene	uplands/hills	silt loam	35-70%	Loess/ aeolian	Overlies Basalt (CRB)
35						
36						
37						
38						
45B						
45C						
45D						
45E						

Geomorphic/Soil Interpretation (Cont).

Soil Map Unit ID	Soil Series Name	Landform Association	Surficial Material/ Texture	Slope Gradient	Depositional Process	Bedrock Assoc.
46B						
46C						
46C						
48E						
48F						
54D						
54E						
55B						
55C						
55D						
55E						
56B						
56D						

Questions:

1. Based on the field stops from the trip and the soils map, what are the two dominant types of surficial deposits located in this vicinity of Wasco County?
2. What is the dominant bedrock that underlies surficial deposits in this region?
3. What is the significance of the letter designations on the map units? Do they signify a difference in material? Process? Or landform? Specifically what is the difference between the letter designations given the same number on the map unit ID?
4. What other types of landuse information is available in the soil descriptions?
5. What is the dominant native vegetation type in this region?
6. What is the average annual rainfall associated with soils in this region?