

ES322 Geomorphology Class Exercise
Introduction to Geomorphic Analysis

Locate the following resources in the lab: State of Oregon Geologic Map, Monmouth Quadrangle Topographic Map, Polk County Soil Survey (two index maps located immediately after p. 250), and Geologic Map of the Monmouth-Sidney Quadrangles

1. Using the Monmouth Topographic map, find the following locations:
 - a. WOU Natural Science Building
 - b. Hopville
 - c. Vitae Springs
 - d. Cupids Knoll
 - e. Davidson Hill
 - f. Helmick State Park

2. Using the Monmouth Topographic Map, fill in the following data table for each location:

Location	Elevation	Relative Slope*	Topography#
WOU NSB	_____	_____	_____
Hopville	_____	_____	_____
Vitae Springs	_____	_____	_____
Cupids Knoll	_____	_____	_____
Davidson Hill	_____	_____	_____
Helmick State Park	_____	_____	_____

* Relative Slope Options: Steep, Moderate, Gentle, Flat

Topography Options: valley flat, hillslope, ridge top

3. Using all of your available resources listed above, fill in the following data table for each location: (NOTE: provide an explanation for all of your geologic / soil unit abbreviations in the space below the table)

Location	Geologic Unit ID from State Map	Geologic Unit ID from Monmouth Map	Soil Unit ID from Soil Survey	Material Type from Soil Survey (e.g. "silty clay", etc.)
WOU NSB	_____	_____	_____	_____
Hopville	_____	_____	_____	_____
Vitae Springs	_____	_____	_____	_____
Cupids Knoll	_____	_____	_____	_____
Davidson Hill	_____	_____	_____	_____
Helmick State Park	_____	_____	_____	_____

Unit Abbreviations and explanations here...

For each soil unit at each respective location, provide a brief written description of the sediment type, parent/rock material, and landform type (note soil unit descriptions are presented in the front part of the soil survey, organized by abbreviation).

Thinking questions:

1. How do the state geologic map descriptions compare with those of the Monmouth geologic map? Are they the same or different? Which ones are more detailed and which are more general?
2. What is the fraction scale of the State geologic map, what is the scale of the Monmouth map? Which one is larger and which is smaller? Which scale map provides more detail and which is more general? How might the scale of the map influence the detail of the geologic map units depicted on the map?
3. How do the geologic maps differ from the soil survey? How are they similar? Compare and contrast the differences in the types of information provided by each.