

READING GUIDE*

Soils in Space and Time II: Rates of Soil Formation and Development

see Buol et al. (2011), Chapter 3, p. 138-140

OBJECTIVE: *To understand time as a factor of soil formation and to appreciate the normal variability in the rates of different soil forming processes.*

1. What are some reported rates of soil formation? Why do these estimates differ? **Which soil horizon tends to form fastest?**
2. **Which represents a faster rate of soil formation: 600 yr cm⁻¹ or 200 yr cm⁻¹?**
3. Why are faster rates of soil erosion found in more arid and mountainous regions? Explain your answer in terms of specific soil forming processes.
4. Why are faster rates of mineral dissolution found in more humid regions? Explain your answer in terms of specific soil forming processes.
5. What is a *pediment*? What is *pedisediment*?
6. What is the *principle of ascendancy*?
7. What is a *chronosequence*? **How can chronosequences be used to study soil genesis?**

SYNTHESIS:

8. How does a soil change as it develops, starting from consolidated parent material to a mature, well-differentiated soil profile? Explain, using specific soil forming processes, the changes that occur within the soil profile through the various stages of development.

* Questions in plain type represent basic facts and concepts. Questions in **bold** type are those that are answered in the text but require more careful consideration. The Synthesis questions at the end help you apply the facts and concepts to a relevant issue.