

## READING GUIDE\*

### Soil as a Natural Body IV: Organisms

see Buol et al. (2011), Chapter 3, p. 118-129

**OBJECTIVE:** *To understand organisms as a factor of soil formation and to recognize the influence of plants, animals, microorganisms, and humans on soil development, soil properties, and soil management.*

1. **What is a *genotype*? What is a *phenotype*? How does the *external biotic factor* differ from a *biofunction*? How are organisms both an independent variable and a dependent variable?**
2. Describe how different organisms (higher plants, microorganisms, macrofauna) interact with and influence the soil. Provide specific examples.
3. **What is an *ecotone*?**
4. When other soil forming factors are constant, how do soil properties differ between forest and grassland ecosystems? Explain your answer, citing specific soil properties.
5. When other soil forming factors are constant, how do soil properties differ between deciduous forest and coniferous forest ecosystems? Explain your answer, citing specific soil properties.
6. How can a single tree influence soil processes, which in turn influence soil properties? Provide specific examples.
7. Which soil fauna have the greatest influence on soil properties? Explain your answer, citing specific soil processes.
8. What is a *krotovina*?
9. How do burrowing animals influence soil properties and the processes that occur in soil?
10. How do humans and human activities influence soil properties? Provide specific examples.
11. What is a *biosequence*? **How can biosequences be used to study soil genesis?**

**SYNTHESIS:**

12. How do organisms influence or interact with other soil forming factors (climate)? Explain your answer.
13. How can human land use management decisions alter the influence of organisms on soil forming processes (and resulting soil properties)? Provide several specific examples.

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\* 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.