

READING GUIDE*

Soil Morphology I: Soil Horizons

Soil Survey Division Staff (1993), Chapter 3, p. 117-129, 133-134 (p. 46-56, 59)

OBJECTIVE: *To understand the nomenclature used to identify and describe the vertical arrangement of horizons within a soil profile, and to recognize the significance of these designations.*

Designations for Horizons and Other Layers

1. How does the ease of identification of soil horizons change as a soil matures?
2. In determining an appropriate horizon designation, to what is the material in the horizon compared? **Why?**
3. How should you interpret the horizon designations used by the investigator who described the soil profile?
4. What are the differences between genetic horizons and diagnostic horizons? **Explain.**
5. How are capital letters, lower case letters, and numbers each used to designate soil horizons?

Master Horizons and Layers

6. What are the six master horizons? What are the fundamental properties of each? **What are the morphological properties of each that help us to differentiate them in the field?**
7. What is meant by the term *rock structure*? **Why is it important in defining master horizons?**
8. What distinguishes C horizons from R horizons?

Transitional and Combination Horizons

9. What is the difference between a transitional horizon and a combination horizon? How is each designated?
10. What is the difference between an AB horizon and a BA horizon?
11. Can a transitional horizon be used without one of the master horizons to which it is transitional being present? **Why?**

Subordinate Distinctions Within Master Horizons and Layers

12. What are the 24 subordinate distinctions within master horizons? What are the fundamental properties of each?
13. Which subordinate distinction, if present, takes precedence over all others?
14. What is the proper method to number the following soil horizon sequence where vertical subdivisions occur within one or more horizons: Ap___-Bt___-Bt___-2Bt___-2Btg___-3Btg___-BCg___
15. What is a *discontinuity*? When is a number prefix used and when is it not?
16. Why is the following incorrect: A-Bt1-2Bt2-2BC-3C1-2C2?
17. Why is the following incorrect: 1A-1Bw-2BC-2C?
18. How and why is a prime (') used when describing soil profiles?
19. How and why are *distinctness* and *topography* used to describe the boundaries between horizons? How are each of the distinctness and topography categories defined?

SYNTHESIS:

20. An O horizon, A horizon, and Bh horizon all are characterized by an accumulation of organic matter. What are the significant differences among these three horizons? How are they distinguished morphologically?

* 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.