

Envirothon Soil Scavenger Hunt
at
North Carolina Museum of Natural Sciences

By **Dr. David Lindbo**, Soil Science Dept, NC State University
david_lindbo@ncsu.edu
919-515-2635

ANSWERS

Answer as many questions as you can. You may work in groups.

1. How are sand dunes stabilized?

Sea oats or other plants

2. What do some of the layers in sand dunes represent?

Storm events, buried organic matter, dark minerals (ilmenite – FeTiO_3)

3. Why do salt marshes smell?

Anaerobic bacteria decompose organic matter and produce hydrogen sulfide gas (H_2S)

4. Why are trees in a mountain cove larger than those in the areas next to it?

Moist, rich soil

5. Why is the B horizon (subsoil) of an upland piedmont soil red?

Fe oxides

6. Why do soils in a Savanna have black chunks in the surface layer?

Charcoal from frequent burning

7. Why is the A horizon (topsoil) of a soil in a bottomland hardwood swamp (or wetland) black?

Organic matter that is slow to decompose in wet (anaerobic) environments

8. Name 5 critters that live in the soil?

King snake, mole, ground hog, cicada, worm, bacteria, fungus, actinomycetes

9. List at least 3 benefits of wetlands.

Bioremediation (water quality filter), flood control, habitat

10. Why do carnivorous plants live where they do?

Low nutrients and wet – need nutrients from insects to survive in a low nutrient soil

11. What is the role of fire in Savannas? How can you tell from the soil that there has been a fire on it?

**Controls under story, seeds need it to germinate
Chunks of charcoal in it**

12. How do Carolina Bays form? What type of soil would you find in the center of a Carolina bay?

**Natural depression form by prevailing winds scouring out oblong depressions in sandy sediments
Organic soils (hydric soils)**

13. What makes mountain bogs different from other wetlands in NC?

Home to many rare and endangered species, naturally disappear, highly threatened

14. What is typical parent material in the Coastal Plain?

Transported Material – marine, fluvial (alluvial) – water transported

15. What is typical parent material in the Piedmont?

Residual Material – Bedrock, saprolite

16. What is typical parent material in the Mountains?

Residual Material – Bedrock, saprolite

Transported Material – colluvium – gravity transported

17. What does a typical upland soil look like?

**Brown topsoil;
Red, orange, yellow subsoil**

18. What does a typical wetland soil look like?

**Black topsoil;
Gray subsoil**

19. What is the name for a soil developed in a wetland?

Hydric soil

20. List the 3 general soil regions in North Carolina. (Bonus list all the soil systems in each region)

Coastal Plain, Piedmont, Mountains

21. Other than food (crops and other agriculture), fiber (cotton etc) and forest products what product important to NC comes for the soil?

Bricks from clay; ceramic/pottery from clay

22. What type of soil do you find in a Pocosin?

Organic soil