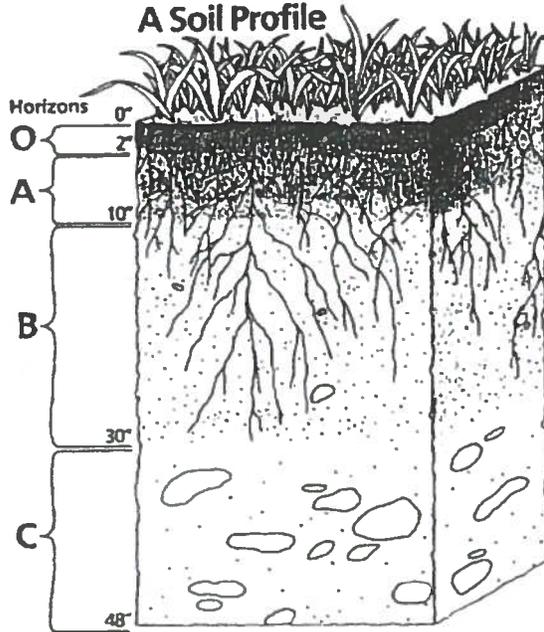


Iowa Soils & Geology

I. Soil Profile

1. Identify what each soil horizon layer is *also known as is* and what is found in each layer.



O Horizon (a.k.a. Litter Layer)

- leaf litter

A Horizon (a.k.a. Top-Soil)

- biotic matter with roots

B Horizon (a.k.a. Sub-Soil)

- depleted organic matter
(clay, iron, aluminum compounds)

C Horizon (a.k.a. Bedrock)

- loosened parent material

II. Typical Iowa Soils

1. What are the percentages of each soil type found in Iowa?

1. Loess 37.5 %
2. Glacial Till 28.5 %
3. Alluvium 20.1 %
4. Sand/Gravel 4.5 %
5. Paleosols 4.0 %
6. Bedrock 2.7 %
7. Fine Sand 1.4 %

2. Identify the components of the three major types of Iowa soils.

Loess - fine-grained, unstratified accumulation of clay + silt ^{by wind} deposited

Glacial Till - soil deposited by a glacier (consists of clay, silt, sand, gravel + boulders)

Alluvium - clay, silt, sand, or gravel carried by running stream + deposited

3. Define the term paleosol.

Paleosol - fossil soil preserved within a sequence of geological deposits
(indicative of past conditions)

III. Iowa Geology

1. Identify the seven major topographic regions of Iowa.

1. Alluvial Plains
2. Des Moines Lobe
3. Iowan Surface
4. Loess Hills
5. Northwest Iowa Plains
6. Paleozoic Plateau
7. Southern Iowa Drift Plain

2. Match each type of topographic region in Iowa with how it formed geologically.

- | | |
|--|--|
| 1. <u>D.</u> Alluvial Plains | A. Ridged mud flats from glacial meltwater flooding |
| 2. <u>C.</u> Des Moines Lobe | B. Subtle topography with limited glaciation or erosion |
| 3. <u>B.</u> Iowan Surface | C. Last part of state touched by glaciers (12,000 years ago) |
| 4. <u>A.</u> Loess Hills | D. River valleys filled with deposits of sand, silt, & clay |
| 5. <u>G.</u> Northwest Iowa Plains | E. Lacks glacial deposits; Ancient sedimentary bedrock |
| 6. <u>E.</u> Paleozoic Plateau | F. Majority of the state; Oldest glacial drift of the state |
| 7. <u>F.</u> Southern Iowa Drift Plain | G. Blend of terrain from multiple glacial drift events |

3. List the type of landform materials, type of terrain, native plant life, common fauna, and current usage for each topographic region of Iowa.

Alluvial Plains

- Landform Materials - Moderate loess over glacial drift (with paleosol)
 Terrain - Only true flat region (terraces, sloughs, exbows)
 Native Plant Life - slight elevation changes affect plants immensely
 Common Fauna - deer, bobcat, fox, raccoon, rabbit, squirrel, skunk
 Current Usage - soybean + rice cropland, catfish farms, dredging projects, major bird migration corridor

- Oak, hickory
 - Elm, ash, hackberry

Des Moines Lobe

- Landform Materials - Fresh glacial drift, No loess cover
 Terrain - Rolling terrain + ridges (swamps = drained)
 Native Plant Life - peat bogs, dry knob, marsh, + fen plants
 Common Fauna - deer, coyote, raccoon, squirrel, opossum, skunk
 Current Usage - Iowa's Great Lakes = Spirit, Okoboji (west) also known as Prairie Pothole Region

Iowa
 60% = cropland
 30% = grassland
 7% = forests
 1% = urban area + water cover

Iowan Surface

- Landform Materials - Thin loess or loam over glacial drift
 Terrain - Little relief (isolated oblong hills = paha)
 Native Plant Life - wetland, fen, + sandy area plants
 Common Fauna - deer, coyote, bull snake, bald eagle, turkey
 Current Usage - High quality rock quarries (area of picturesque hills painted by Great Wood)

Loess Hills

- Landform Materials - Thin loess cover
- Terrain - Highly eroded with sharply ridged terrain (gully development)
- Native Plant Life - oak-hickory forest; last strands of prairie grass
- Common Fauna - deer, coyote, turkey, badger, bobcat, fox, pheasant, hawk
- Current Usage - Brakin Kettle Preserve - largest native prairie in Iowa
Loess Hills State Forest - hiking, backpacking, fishing, picnicking

Northwest Iowa Plains

- Landform Materials - Moderate to thin loess over glacial drift
- Terrain - Rolling hills of eroded soils
- Native Plant Life - gravel hills + bluffs, quartzite outcrop plants
- Common Fauna - deer, mountain lion, rabbit, ducks, squirrel, coyote
- Current Usage - Almost barren of timber
- Mining of large amounts of Sioux Quartzite

Paleozoic Plateau"Driftless Area"

- Landform Materials - Thin loess cover with isolated glacial till
- Terrain - High relief landscapes (bluffs, valleys, caves, springs)
- Native Plant Life - originally = tallgrass prairie, maple-basswood-oak forests
- Common Fauna - deer, turkey, trout, catfish, Iowa Pleistocene Snail
- Current Usage - Driftless Area National Wildlife Refuge
Upper Mississippi River National Wildlife + Fish Refuge

Southern Iowa Drift Plain

- Landform Materials - Moderate loess cover over glacial drift (with patches)
- Terrain - Rolling hills (most productive ag land in world)
- Native Plant Life - west = relatively treeless
- Common Fauna - coyote, deer, turkey, rabbits, raccoon, bull snake
- Current Usage - Shimek + Stephens State Forests
- path of Interstate 80