Example 1

Slope: 2% concave

Landuse: cultivated cropland

Physiographic province: Southern Piedmont

Hillslope component:

Geomorphic position: stream terrace

Drainage:

Location: Wake County, NC; 12 miles south of Raleigh on Old Stage Road, 1.5 miles southwest of Plymouth Church on farm road; near Middle Creek, 200 yards east of farm road.

Described by: Vepraskas, Kleiss, and Hoover, 5/97

Pedon description: (colors are for moist soil unless otherwise stated)

Ap--0 to 20 cm; grayish brown (10YR 5/2) fine sandy loam; weak medium granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

E--20 to 30 cm; pale brown (10YR 6/3) fine sandy loam; weak fine granular structure; very friable; few fine roots; moderately acid; abrupt smooth boundary.

Bt1—30 to 38 cm; brownish yellow (10YR 6/6) sandy clay loam; weak fine subangular blocky structure; friable; few medium roots; moderately acid; clear wavy boundary.

Bt2—38 to 50 cm; yellowish brown (10YR 5/6) clay loam; common fine distinct yellowish red redox concentrations; weak medium subangular blocky structure; friable; few fine roots; few flakes of mica; common faint clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—50 to 88 cm; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct light brownish gray (10YR 6/2) redox depletions; weak medium subangular blocky structure; friable; few fine roots; few flakes of mica; common faint clay films on faces of peds; strongly acid; gradual smooth boundary.

BC—88 to 104 cm; brownish yellow (10YR 6/6) sandy loam; many medium distinct light brownish gray (10YR 6/2) redox depletions; weak fine subangular blocky structure; friable; few flakes of mica; strongly acid; gradual smooth boundary.

Cg—104 to 150 cm; gray (10YR 6/1) coarse sandy loam; many coarse prominent yellowish brown (10YR 5/8) redox concentrations; massive; very friable; many gravel; few flakes of mica; strongly acid.

Explanation of horizon nomenclature

0-20 cm horizon is at the surface and is slightly darker (lower value) than the subjacent horizon. Thus, it should be an A horizon. In addition, it has granular structure which is common in A horizons and seldom found in B horizons. The landuse indicated that the soil was cultivated, and thus, it should have a “p” designation.

The second property that should be noted in the description of this pedon is that the amount of clay increases (sandy loam texture from 0 to 30 cm and sandy clay loam/clay loam texture from 30 to 88 cm). In addition, the 38 to 50 and 50 to 88 cm horizons have clay films. Both the clay increase and presence of clay films indicate clay translocation and an illuvial accumulation of clay. These three horizons also have soil structure (subangular blocky). All of these are characteristics of a B horizon. Because the clay films and clay increase indicate an illuvial accumulation of clay, the “t” designation is used. A “rule of thumb” is that the “t” should be used with the horizons with the highest clay content. In this pedon, the three horizons from 30 to 88 cm have similar amounts of clay (at least from what can be inferred from textural class). Thus, all three horizons could logically be designated as Bt horizons, i.e. Bt1, Bt2, and Bt3.

The 20 to 30 cm horizon has the same texture as the A horizon and is relatively light in color (value of 6). These two characteristics suggest it is an E horizon.

The 104 to 150 cm horizon is massive (no soil structure). The lack of soil structure precludes the horizon from being a B horizon. Thus, it is a C horizon. The dominant or matrix color of the horizon (first color listed), 10YR 6/1, has chroma of 2 or less. Thus, the “g” subordinate designation is used.

The 88 to 104 cm horizon has less clay than the overlying Bt horizon which is a characteristic similar to the subjacent C horizon. However, the horizon has soil structure (subangular blocky) which is a characteristic of B horizons. Thus, the horizon is best considered as a B to C horizon transition, and because it appears more like the B than the C horizon, it is designated a BC horizon.

It should be noted that the Bt3 and BC horizons have colors with chroma of 2 or less. However, these colors are colors of redox depletions and not the matrix color. Thus, the “g” designation is not used. The A horizon color also has chroma of 2. However, the subjacent horizon has no evidence of seasonal saturation (chroma of 2 or less). Thus, the 2 chroma is the color of the organic matter in the horizon. A horizons often have 2 chroma which is a common chroma for organic matter.

Example 2

Slope: 3% convex

Landuse: old growth forest

Physiographic province: Atlantic Coastal Plain

Hillslope component: summit

Geomorphic position: upland

Drainage:

Location: Escambia County, Alabama; 0.6 mile east of Hendley- Roberts School on Alabama Highway 4 and 1.5 miles north on paved road to Dixie, Alabama, 400 feet west of road, NW1/4NW1/4NW1/4 sec. 5, T. 1 N., R. 13 E.

Described by: Shaw, Martin, and Hajek; 9/95

Pedon description: (colors are for moist soil unless otherwise stated)

A--0 to 8 cm; very dark grayish brown (10YR 3/2) fine sand; weak fine and medium granular structure; very friable; very strongly acid; clear wavy boundary.

E1—8 to 38 cm; yellowish brown (10YR 5/4) fine sand; single grained; very friable, 10 to 15 percent of sand grains uncoated; very strongly acid; gradual wavy boundary.

E2—38 to 100 cm; strong brown (7.5YR 5/6) loamy fine sand; single grained; very friable; common medium sized pockets of pale brown (10YR 6/3) uncoated sand grains; very strongly acid; gradual wavy boundary.

E3—100 to 133 cm; reddish yellow (7.5YR 6/6) loamy fine sand; single grained; loose; many coarse distinct red (2.5YR 5/8) spheroidal bodies in lower part with sand grains coated and bridged; these bodies are friable and have weak medium subangular blocky structure; common medium sized pockets of pale brown (10YR 6/3) uncoated sand grains; strongly acid; gradual wavy boundary.

Bt1—133 to 163 cm; red (10R 4/6) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; few fine streaks of reddish yellow (7.5YR 6/6) clean sand grains; strongly acid; gradual wavy boundary.

Bt2—163 to 220 cm; red (10R 4/6) sandy clay loam; weak medium and coarse subangular blocky structure; friable; sand grains coated and bridged with clay; few fine quartz gravel; strongly acid; gradual smooth boundary.

Explanation of horizon nomenclature

0-8 cm horizon is at the surface and is darker (lower value) than the subjacent horizon. Thus, it should be an A horizon. The pedon is located in a forest, and there is no evidence in the description that the soil has been plowed. Thus, no “p”.

The second property that should be noted in the description of this pedon is that the amount of clay increases (fine sand and loamy fine sand from 0 to 133 cm and sandy clay loam from 133 to 220 cm). The 133-163 and 163-220 cm horizons have clay coating and bridging sand grains. Both the clay increase and presence of clay bridges indicate clay translocation and an illuvial accumulation of clay. These two horizons also have soil structure (subangular blocky). All of these are characteristics of a B horizon. Because the clay bridges and clay increase indicate an illuvial accumulation of clay, the “t” designation is used. In this pedon, the two horizons from 133 to 220 cm have similar amounts of clay (at least from what can be inferred from textural class). Thus, both horizons could logically be designated as Bt horizons, i.e. Bt1 and Bt2.

The three horizons from 8 to 133 cm have textures similar to the A horizon and are lighter colored (higher value) than the A horizon. This combination of properties suggests the horizons are E horizons.

The 100 to 133 cm horizon has described “red bodies in the lower part with sand grains coated and bridged with clay”. These are probably remnants of Bt horizon. Thus, this horizon could be designated as “E/Bt”; dominantly E horizon but recognizable

Example 3

Slope: 1% linear Landuse: improved pasture

Physiographic province: Blue Ridge Mountains Hillslope component:

Geomorphic position: floodplain Drainage:

Location: Transylvania County, North Carolina; 6 miles southeast of Brevard, 700 feet south of Little River and 100 feet east of Secondary Road 1535.

Described by: Kleiss and Vick; 12/95

Pedon description: (colors are for moist soil unless otherwise stated)

Ap--0 to 25 cm; very dark grayish brown (10YR 3/2) silt loam; weak medium granular structure; very friable, slightly sticky; few fine flakes of mica; very strongly acid; clear smooth boundary.

A1—25 to 68 cm; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; very friable, slightly sticky; few fine flakes of mica; very strongly acid; clear smooth boundary.

Bw—68 to 105 cm; yellowish brown (10YR 5/6) silt loam; few fine distinct light gray (10YR 7/2) redox depletions; weak medium subangular blocky structure; friable; sticky, slightly plastic; common fine flakes of mica; very strongly acid; gradual smooth boundary.

Bg—105 to 150 cm; light gray (10YR 7/2) silt loam; many medium and coarse, distinct light yellowish brown (10YR 6/4) redox concentrations; weak medium subangular blocky structure; friable, sticky, slightly plastic; common fine flakes of mica; very strongly acid; clear smooth boundary.

Cg—150 to 200 cm; light olive gray (5Y 6/2) loamy fine sand; single grained; loose; common fine flakes of mica; moderately acid.

Explanation of horizon nomenclature

0-25 cm horizon is at the surface and has a dark color (low value). The soil is in improved pasture, has been plowed, and should have a “p” designation.

The 25 to 68 cm horizon has the same color, same texture, and granular structure and should also be an A horizon. The nomenclature is just “A”. It is the second “A”, but the first A is an Ap. A counter (1, 2) is only used if the nomenclature is exactly the same.

The 150 to 200 cm horizon has single grain structure (structureless) and thus, should be a C horizon. Its color has chroma of 2, which indicates the “g” designation.

The 68 to 105 cm horizon has soil structure, which is sufficient evidence for designation as a B horizon. However, the texture is the same as the overlying A horizon and no clay films or clay bridging are described that would indicate an illuvial accumulation of clay. This B horizon is an example of a minimally developed B horizon in which the only alteration has been development of soil structure and possibly some reddening of the horizon. This is the type of B horizon for which the “w” (weathered) designation is intended. A B horizon has to be some kind of B, i.e. Bt, Bh, Bg, Bs. No horizon can be simply a B with a subordinate designation.

Use of “w” can be considered the designation of last resort. If the horizon is a B but does not qualify for any other subordinate designation, use “w”.

The 105 to 150 cm horizon has similar properties, i.e. same texture and same structure, but it has a matrix color with chroma of 2 or less. Thus, it has the “g” designation, Bg. A horizon is never designated as Bwg. The “g” is an indication of development and takes precedence over the “w”. If the horizon had evidence for illuvial accumulation of clay, i.e. Bt and had a matrix color with chroma of 2 or less, it would be designated as Btg – both illuvial clay and low chroma are important properties.