

## Master Horizons: O, A, E, B, C, R

Know the principal features of each horizon

### Sub Horizons (added to master horizon designation)

g – gleying	anaerobic (reduced) conditions, color, Fe
h – illuvial organic matter	humic or organic accumulations (subsurface)
p – plowing	plowing or disturbed
t – clay accumulation	formed in place or illuviated
w – development of color/structure	weak influence of clay, or oxides of Fe
o – oxic	highly weathered, kaolinite, Fe/Al oxides
Oa – highly decomposed (sapric)	higher carbon content, high surface area, reactive
Oe – moderately decomposed (hemic)	
Oi – slightly decomposed (fibric)	lower carbon content, low surface area, less reactive

Examples:	Bt	accumulation of aluminosilicate clays in the subsurface
	Bh	accumulation of organic matter in the subsurface
	Bo	oxic horizon, high in kaolinite and Fe/Al oxides
	Ap	disturbed surface horizon
	Btg	Accumulation of clays under reduced conditions (color)

### Diagnostic Horizons

		<u>Usage</u>
Surface:	Mollic- thick, dark colored, high %B.S., good structure	mol-
	Umbric – same, but lower B.S.	umbr-
	Ochric – pale, low O.M., thin	ochr-
	Histic – High O.M., thick, wet, dark	hist-
Sub-Surface:	Argillic – illuvial accum. of high activity clay	arg-
	Kandic – accum. of low activity clay	Kand-
	Spodic – Illuvial O.M. accumulation (Al and/or Fe)	spod-
	Oxic – highly weathered, kaolinite, Fe and Al oxides	ox-
	Albic – light-colored, illuvial	alb-

### Soil Orders

Entisol Young Soils, weakly developed, sandy or clayey, ochric Epipedon, A – C profiles  
Histosol Histic epipedon, Peat or muck, > 20% organic matter  
Inceptisol – Weak development, ochric or umbric epipedon, subsurface horizons, unweathered minerals  
Alfisol – mollic, ochric, umbric epipedon, argillic horizon (Bt) with > 35% B.S.  
Ultisol – mollic, ochric, umbric epipedon, argillic horizon (Bt) with < 35% B.S.  
Spodosol – wet, acid conditions, Spodic horizon (Bh), acidic vegetation, poorly drained  
Mollisol – mollic epipedon with > 50% B.S., poorly drained, can have argillic, grassland vegetation  
Oxisol – ochric or umbric epipedon, oxic horizon, highly weathered, kaolinite, Fe/Al oxides

Know the basic features, diagnostic horizons, and that the last syllable in a taxonomic name indicates the soil order.

### Soil Sub-orders: Related to moisture, temperature, presence of diagnostic horizons

Moisture	<b>Aquic</b> – poor aeration, reduced iron	
	<b>Udic</b> - dry < 90 total days	
	<b>Ustic</b> - limited but is present	<b>Bold indicates usage</b>
	<b>Aridic</b> - moist <90 total days	
	<b>Xeric</b> – dry	

Examples: The suborder designation is in **bold** and corresponds with the usages indicated above  
 Note that the last syllable indicates the soil order.

<b>Aquod</b>	very wet spodosol
<b>Udult</b>	wet ultisol
<b>Udoll</b>	wet mollisol
<b>Xeroll</b>	dry mollisol
<b>Ochrept</b>	inceptisol with ochric epipedon
<b>Umbrept</b>	inceptisol with umbric epipedon
<b>alboll</b>	mollisol with albic horizon

**Temperature Regimes (often incorporated at the Family level)**

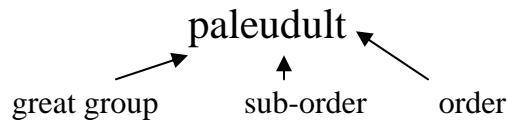
- Cryic – icy cold
- Frigid – lower than 8oC
- Mesic – between 8 and 15oC
- Thermic – between 15 and 22oC
- Hyperthermic - > 22oC

**Great Groups Based on diagnostic horizons, their arrangement plus other features like age, color, texture**

- Arg** - argillic horizon present
- Pale** - old
- Kand** - kandic horizon present
- Hapl** - minimum horizonation
- quartzi** – quartz sand
- Hum** - humid

Examples: The great group designation is in **bold** and corresponds with the usages indicated above  
 Note that the last syllable indicates the soil order.

<b>paleudult</b>	old, udic moisture, ultisol
<b>argiaquoll</b>	argillic horizon present, aquic moisture, mollisol
<b>paleudalf</b>	old, udic moisture, alfisol
<b>hapludult</b>	minimum horizonation, uidc moisture, ultisol



**Taxonomic Names**

<b>Series</b>	<b>Family</b>	<b>subgroup</b>	<b>great group/suborder/order</b>
Apopka	loamy, siliceous, hyperthermic	grossarenic	paleudult
Ledwith	fine, smectitic, hyperthermic	mollic	albaqualf
Surrency	loamy, siliceous, thermic,	arenic	paleaquult
Pomona	sandy, siliceous, hyperthermic,	ultic,	haplaquod