

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

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

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

Temperature Regimes (often incorporated at the Family level)

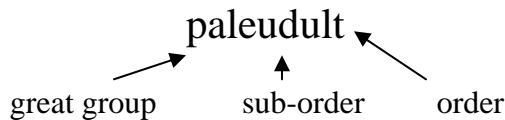
- Cryic – icy cold
- Frigid – lower than 8oC
- Mesic – between 8 and 15oC
- Thermic – between 15 and 22oC
- Hyperthermic - > 22oC

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
- quartz** – 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.

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



Taxonomic Names

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