Training Plan 2

Proposed Training to Become a Professional Soil Classifier

1. Get a Sponsor.

2. Complete the exercise "Terrain/Landscape Analysis for Soil Identification".

3. Write 50 soil descriptions of differing soils. This requires choosing a county with a soil survey.

a. Classify all soils in the chosen county according to Soil Taxonomy.

b. Evaluate and design for a septic system for all soils in the chosen county, if possible.

c. Evaluate all soils in the chosen county as hydric or nonhydric.

d. Evaluate all soils in the chosen county for other uses - to be decided upon.

e. Describe the Landscape Position.

4 a. Trace stream deposits from the headwaters for 20 miles by doing cross sections at:

1) 2 miles
2) 5 miles
3) 10 miles
4) 15 miles
5) 20 miles

b. Draw cross-section profiles and label the flood plain and terraces at each distance.

5. A three-day field trip to evaluate soils in the Ustic moisture regime.

6. A two-day trip to evaluate hydric soils.

7. Discussion on the formation of RMF and relic RMF. Field evaluation of BOTH.

8. An exercise utilizing photo interpretation.

TERRAIN / LANDSCAPE ANALYSIS AND SOIL MAPPING

OBJECTIVE: To understand soil occurrence in relation to terrain / landscape position and the surrounding terrain / landscapes.

APPROACH: Obtain a soil survey of a county and relate the soil mapping (field) legend to geomorphic regions, terrain / landscape analysis, and parent materials.

The starting Soil Scientist / Soil Classifier is expected to map from a legend which was established by more experienced personnel. This makes getting started a lot easier. In this situation, one is to pick the best fit available in the legend. Like all professions, beginners are not supposed to make waves and say the legend does not contain the needed mapping unit. However, if the beginner cannot make a reasonable fit, the person may describe the soil map unit and give the information to the party chief. For purposes of this exercise, I recommend you try very hard to get a fit.

As the learned, gray-haired correlator, Larry B. Ward (as well as Curtis F. Marbut) said, "Every soil has home and should not be found wandering aimlessly about the landscape..." (There are some exceptions.)

Steps:

1) Obtain a Soil Survey of a county (area).
2) Analyze the area and determine where each soil fits, i.e. its home.
3) Construct a field mapping Legend.

The field mapping legend is called a "Field" legend because it contains some information in addition to the map unit, symbol, and name, crib or cheat notes if you will. (I constructed on for my home county, which is enclosed as an example).

The Filed Mapping Legend should be constructed by:

1) Geomorphic Regions
2) Terrain/Landscape Positions

4) Show on a cross-section of the landscape (or a 3-D sketch) and indicate where each soil fits. (Examples attached).

The Terminology for geomorphic regions and for terrain/landscape positions has not yet been stabilized. (We are making progress) One must use the same terminology as used in the soil survey.

After arriving at this point the instructor should field check the terrain/landscape position figure and Field Mapping Legend. When they are approved the student should spend considerable time refining his understanding of the soils of the county.

When the student is well prepared, the instructor will return and administer the final field test, which will be primarily identification f the proper soil map unit for a given pedon and discussions of terrain/landscape positions. The student should have the normal field tools and a copy of the soil survey of the area with field sheets (maps) taped (lightly) together. The student is expected to identify the appropriate mapping unit using the Field Mapping Legend, the figure of soil occurrence and terrain/landscape position with only occasional reference to the soil map unit descriptions contained in the survey.

The final field test may be re-administered once if the student fails the first test.

SOIL MAPPING LEGEND SUMNER COUNTY, TN (FIELD USE)

Soils of the **Central Basin**

Uplands

BaC[2] Barfield >18"[1] , (c, oll)[3]
HaC2 Hampshire >60" (f, alf)
NeB2 Nesbitt 24 (f-si, alf)
MmB2&C[2] Mimosa 47" (f, alf)
MmD2, D3&E2; MrE[4] , *MuC*[4]
TbC Talbert > 30" (f, alf)

Terraces

AmB Armur (f-si, alf)
ByB Byler 20" (f-si, alf)
NeB2 Nesbitt 24 (f-si, alf)
HhB2,C2 & Hrb Harpeth (FP >60" (f-si,alf)
WaC2&D2 Waynesboro >60" (c, ult)
InD2&2E Inman 21" (f, ept)

Floodplain

Ar Arrington 54" (f-si, oll)
Eg Egam 47" (F,oll)
Go Goodwin (& Dep.) 26 (f, oll)
Me Melvin (Dep.) 6" (f-si, ent)

Soils of the **Highland Rim**

Uplands

MVB2&C2 Mountainview >60" (f-si, ult)
DkB2 Dickson 20" (f-si, ult)
Gu Guthrie 3" (f-si, ult)
BeB2&C2 Bewleyville 35" (f-si, ult)
Ta Taft 8" (f-si, ult)
SqC2&D2 Sugargrove >60" (f-1, ult)
SeC2,D2&E2 Sengtowm >60" (f, alf)

Terraces

EtB2&C2 Etowah >60" (f-1, ult)
CaB Captina 21" (f-si, ult)

Floodplain

Me Melvin (Depressions) 5" (f-si, ent)
TuB Tarkin 20" (f-1, ult)
No Nolinn >60" (f-si, ept)
Ob&Oc Ocana 30" (f-1, ept)

Soils of the **Central Basin/Highland Rim Escarpment**

DeD2&E2 Dellrose >60" (f-1, ult)
HuB Humphrey's >60" (f-1, ult)
Su[6]*d&SuF* Sulphura >27" R-27 (f-sk, ept)

This county did not have fixed slope classes, some B slopes are 1 to 3 % and some are 1 to 4 % etc.

A common set of slopes are:

A	0 – 1%	*D*	8 – 12%
B	1 – 3%	*E*	12 – 20%
C	3 – 8%	F	20 + %

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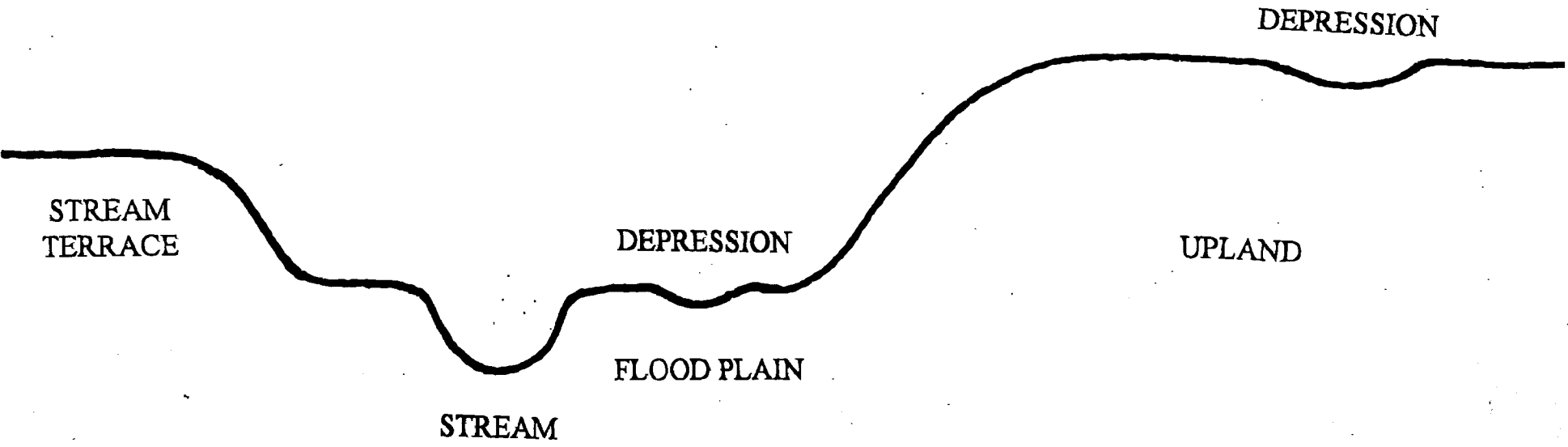
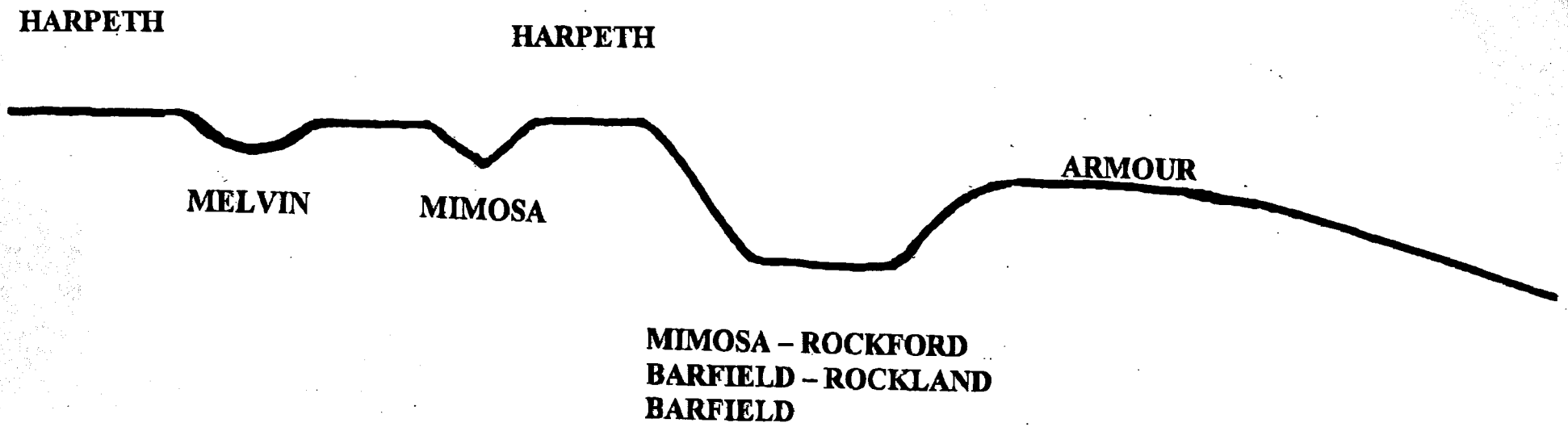
[1] Depth to chroma 2 or less
[2] Family PSD and Order
[3] Map Symbol
[4] Complex

LANDSCAPE POSITIONS



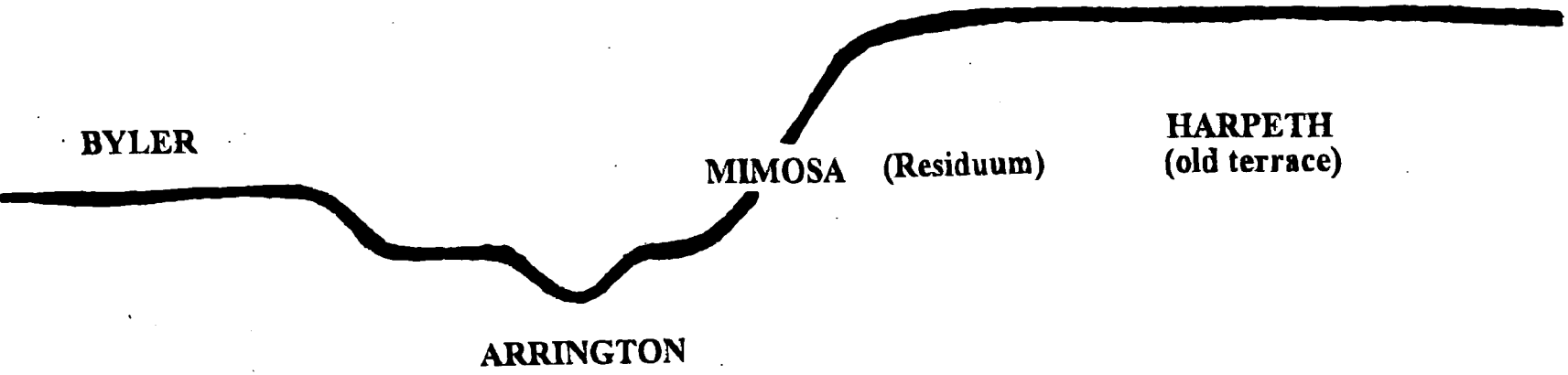
***Sumner Co, TN – Soil Survey of 1997**

SOILS OF THE CENTRAL BASIN*
SOUTHERN PORTION



*Sumner Co, TN – Soil Survey of 1997

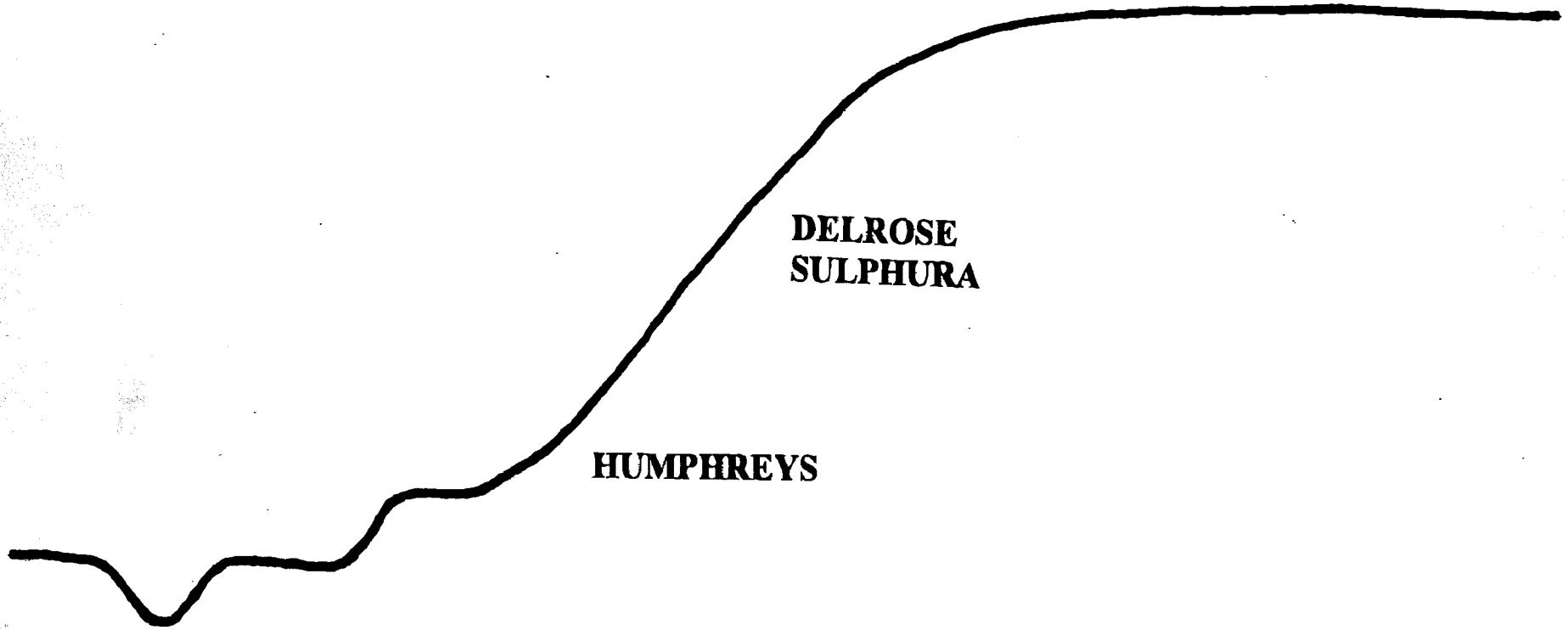
SOILS OF THE CENTRAL BASIN*
NORTHERN PORTION



The thinking seems to be that the surface of the Central Basin is covered with old alluvium and / or loess. Any downcutting produces residual soils as do rises.

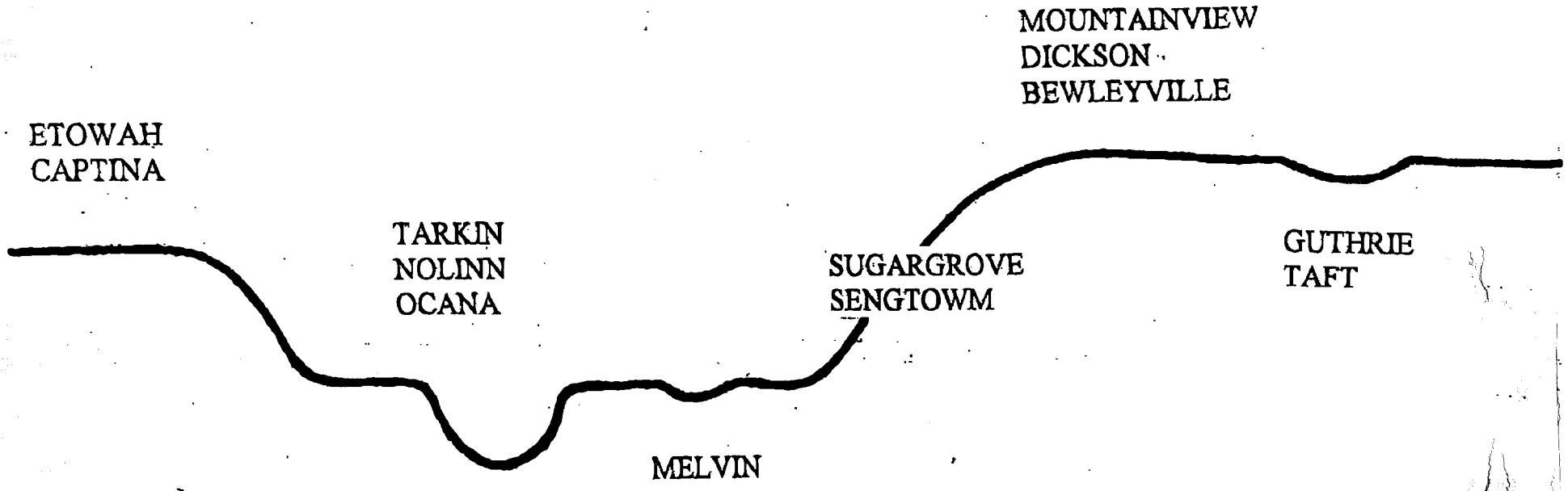
*Sumner County, TN – Soil Survey of 1997

CENTRAL BASIN / HIGHLAND RIM ESCARPMENT



*Sumner Co, TN – Soil Survey of 1997

SOILS OF THE HIGHLAND RIM*



The thinking seems to be that the soils in stable landscape position are formed in a silty mantle approximately two feet thick. (assume loess)

*Sumner County, TN – Soil Survey of 1997