PRACTICAL ASPECTS ON SITE

Authorisation

- The EA and WULA give the Client (and us) approval to "break" the Environmental Laws
- The EMPr tells us how we can do it

Your Job

Focus on the important issues

- Pre entry and PTO
- Spoil sites
- Top soil preservation

Toilets & drip trays later

Typical Site Activities

- Clear vegetation
- Strip top soil
- Excavation and erosion control
- Construction works
- Rehabilitation process

Clearing Vegetation

- Must have the End in Mind
- What is to be done with the brush
- If bulldozed into a heap, how will you sort it out?

Clearing Vegetation

Clearing Vegetation


STAY BACK 400 FEET
CycloTrac

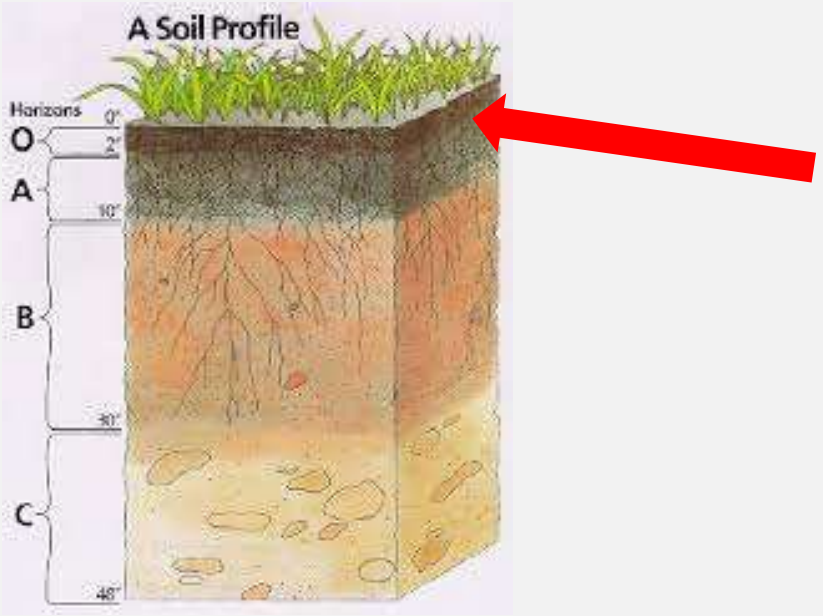
Clearing Vegetation

- Ensure that there is a practical Plan
- Draw on your experience to assist them

Stripping Top Soil

- This is the most important aspect of any rehabilitation work
- Make sure it happens

Top soil



- It is the relatively thin, top portion of the soil
- It is the most fertile section of the soil

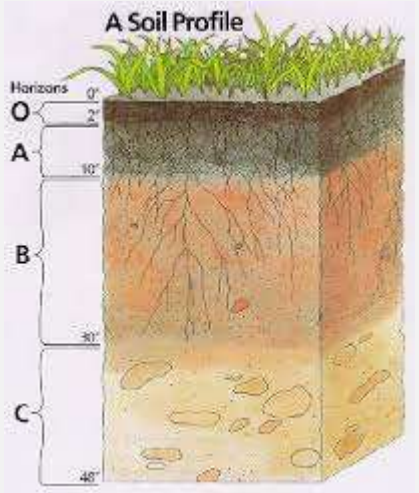
Top Soil

- Agricultural classification:

A horizon – depth varies

- Contract Document

Usually fixed depth



Top Soil

- Top soil is a complex, structured mix of organic and inorganic materials
- This structure is broken down when top soil is stripped
- Will take several seasons to re-form into "proper" top soil – earthworms come back etc

Top Soil

- If we "loose" the top soil it will take decades / centuries to re-form
- Will "loose" top soil by mixing it with subsoil

The "Normal" EMP

- Most EMP's state that top soil may not be stockpiled higher than 1.5 to 2m
- This is probably inherited from the *Aide Memoire* used to compile EMPr's in conjunction with the Minerals Act, 1991
- This was probably to avoid machines driving on the top soil stockpiles
- Perpetuated as a "cut and paste"

Types of Soils

Cohesive (high clay content)

- Sticks together when wet

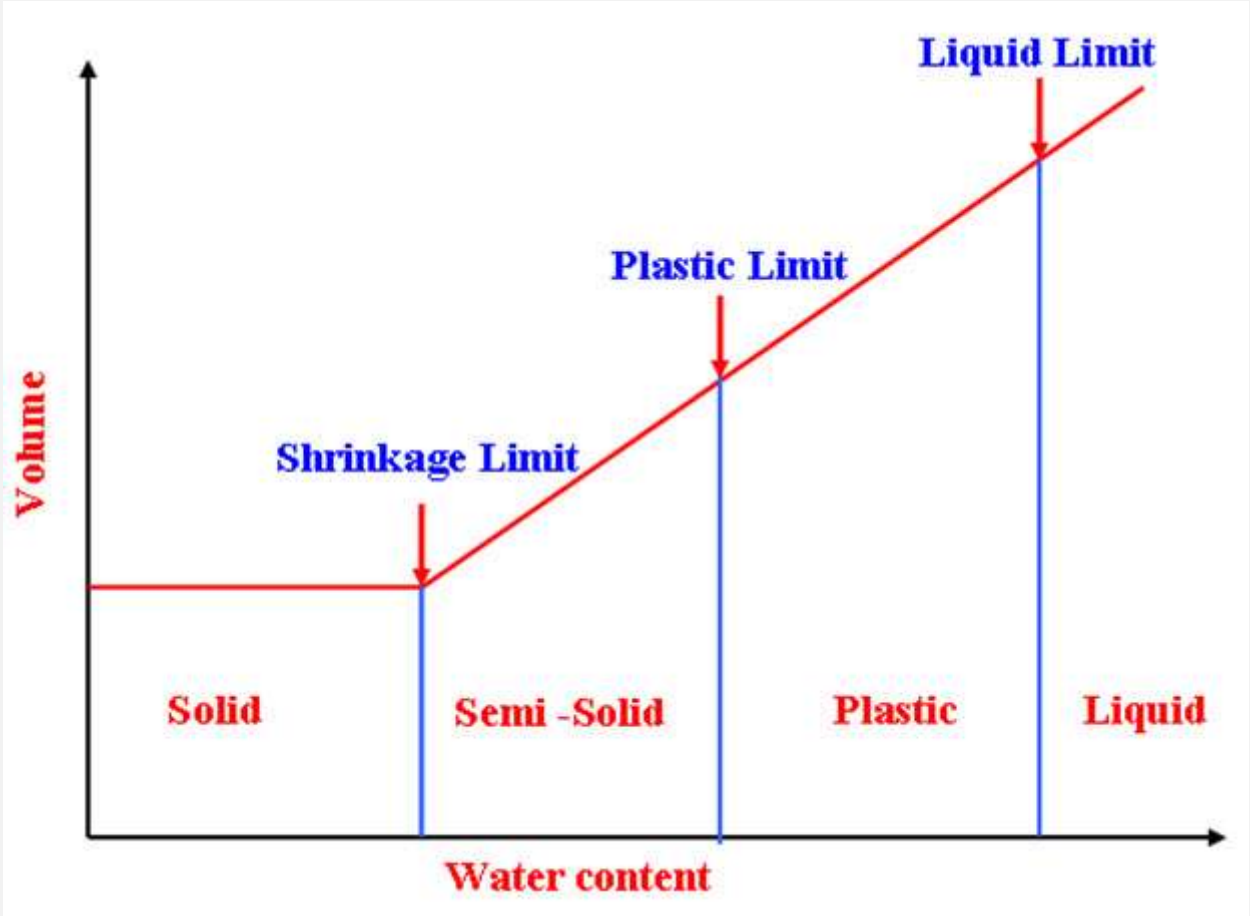
Non Cohesive (beach sand)

- Will not stick together no matter how wet it is

Scientific Based Logic

- If the soil is non-cohesive then compaction from its own weight is not a problem (regardless of moisture content)
- If the moisture content of a cohesive soil is below its Plastic Limit, compaction from its own weight is not a problem

States of Soil



How to Test: Plastic Limit

Relevance of Plastic Limit

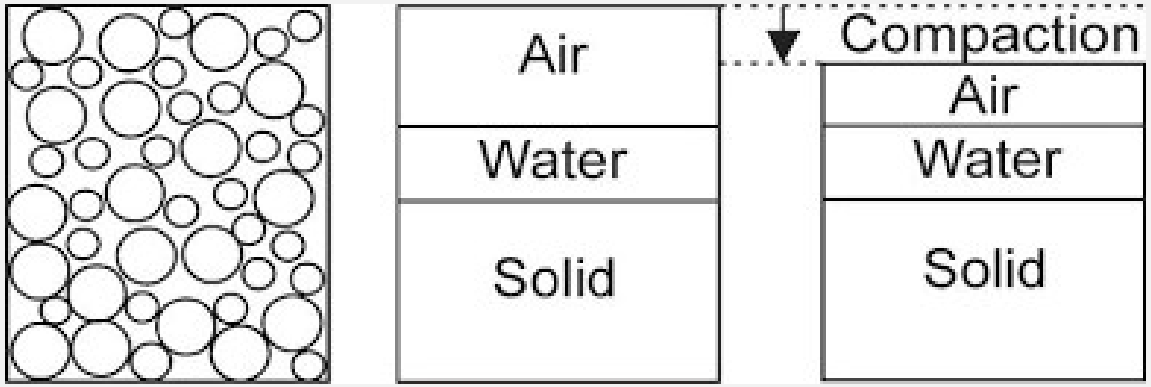
- This is the moisture content at which soil will form "clods"
- This makes top soil difficult to spread

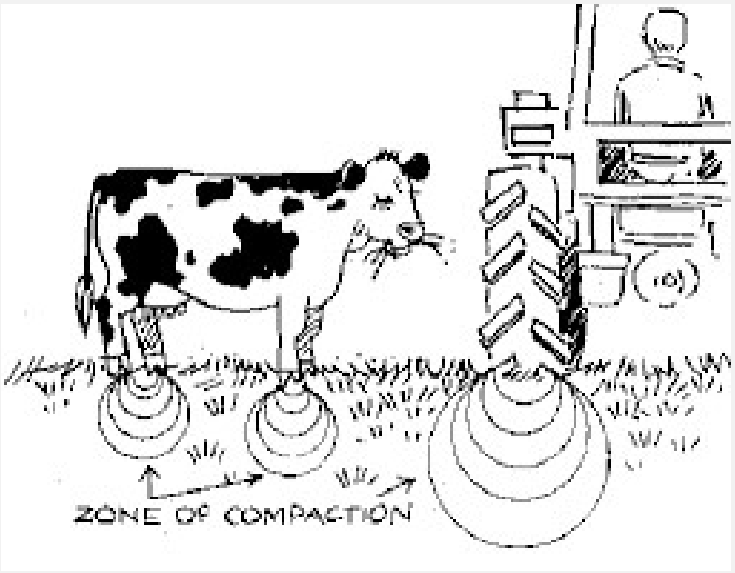

DANGER
DEEP
EXCAVATIONS

Scientific Based Logic

- 2m is a good practical limit for TLB or payloader – minimises the risk of driving on the top soil
- Under the appropriate conditions there is no reason why top soil cannot be stockpiled up to about 4 – 5 meters
- The stockpile should be shaped to keep rain out

What is Compaction





What is Important

- To strip off the top soil and keep it separate and well drained
- Minimise the risk of compacting the top soil

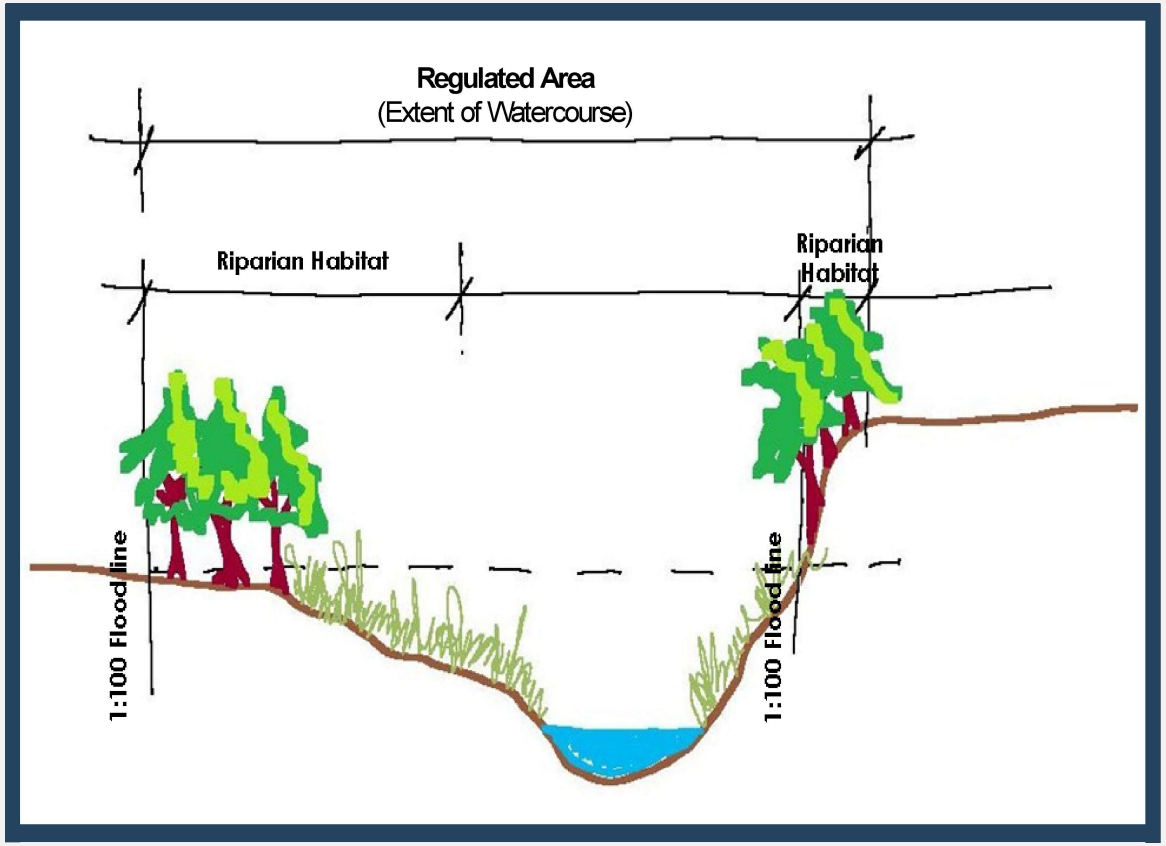
Top Soil in Riparian Areas

- Often confusion about 100m / 1:100 year RP flood line and "out of the flood plain"

- Need to assess the risk of top soil washing away - the edge of 1:100 flood line may still be the point of highest risk

Extent of a Watercourse

Extent or 'Regulated Area' =
Outer edge of the Riparian habitat / 1:100 flood line (**whichever is greatest**)



Top Soil in Wetlands

- Often in wetlands it is impractical to remove top soil from the wet area

The Construction Process

- Civil Construction Works are by their nature, disruptive to the environment

- Know what is important and focus on these

Excavation

Excavation

- In EMP do not be too specific as to method of demarcation of excavation

- "All trenches must be demarcated with danger tape"


Pipe laying

The Construction Process

- Let the Contractor have enough room to work in

- Otherwise an unplanned for area may be disturbed

BREAK