An understanding of the effect of soil properties on the environment provides horizons for careers in soil

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Part 1a

Soil Expertise

Professions that require soil expertise within their multidisciplinary teams for projects include:

- Engineering
- Environmental eg contamination, water quality
- Ecology
- Planning
- Forensic
- Legal



Soil The Environmental Link (Rimmer, 1999)

The link between geosphere, atmosphere, hydrosphere, biosphere and soil shows why

- Soil properties can influence and be influenced by human activities
- An understanding of soil functions is a unique expertise which can be of significant value to many other professional bodies and those building multi disciplinary teams.

SOIL INFORMATION

To provide the best possible information to these other professions it is necessary to determine

• what information is very important for their project to succeed (ie from their own perspective)

and

• how that information can be provided

Management tools used to collect natural resource data

- maps-geology and topographic
- air photos
- satellite images
- soil landscape mapping
- previous soil surveys and reports
- information from local council libraries

PROBLEM SOILS

Physical and chemical properties of soils can result in a variety of problems. These soils include:

- Sodic soils
- Slaking soils
- Shrink/swell soils
- Saline soils
- Acid soils





Engineering problems resulting from sodic soil

- Urban expansion can occur in areas of sodic soil. Identification of this soil type before commencement of works reduces the management problems
- First step
- What is the geology of the area?
- Do these soils occur in the area of designated work ?
- What are the characteristics of these soils that may affect the proposed work?

Sodic soils

- Disperse easily
- Hard dense subsoils
- Pipe
- Tunneling-due to disturbance of the delicate hydrologic balance increasing the water movement in the sodic subsoil and subsoil/topsoil interfaces
- Eroded sediment affects for water quality
- Slope failures occur at gradients between 7-10%

Urban Development

Urban expansion and activities in areas of sodic soils for example which could be problematic include *Construction of roads and culverts, *Supply of services via trenches, *Installation of sewage and grey water

disposal systems

• increase the risks of dispersion and erosion which are result in environmental problems and costly to repair

Examples: Roads & Culverts



















Examples: Optical Fibre Installation ~ Dunalley

