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# TERAPIXEL PHOTOGRAMMETRY

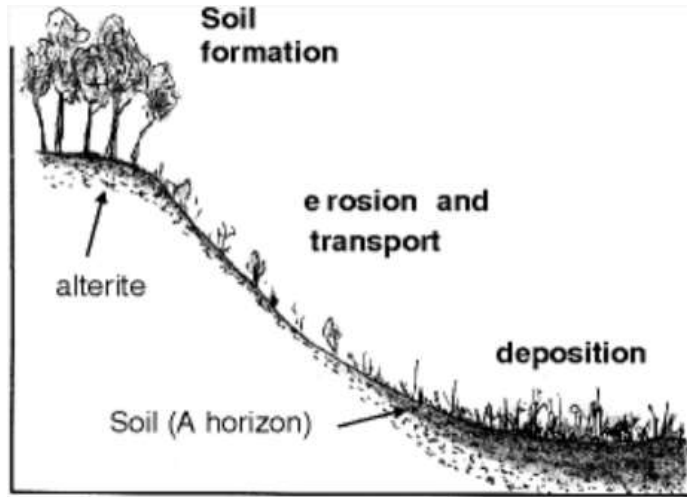




# Soil information – need for a generic data source

- Global agribusiness – a 5.5 trillion industry
- Food security – unsolved for the next decades
- Mining exploration
- Biodiversity management

# Topography – a critical soil forming factor



Five soil forming factors:

1. Climate – long term – spatially variable through water
2. Organisms – long term interactions
3. Parent material – broad scale
4. Relief – highly variable, fine scale
5. Time



# Sources of topographic data

- SRTM – global 30-90m
- Aster-GDM – digital surface model
- Radar, Lidar (high quality, relatively expensive)
- Photogrammetry (high spatial resolution)



# From Drones to Satellites



Prof. Gordon Petrie (Univ. of Glasgow)



# Photogrammetry

# Terrain model



# Conclusions

- Airborne RGB photography can provide the basis for digital terrain data at unprecedented detail.
- Soils may have a stronger than previously anticipated relationship with topography.
- Small vertical differences may have a much stronger that previously thought determination of soils.
- Absolute height accuracy is not critical, but relative accuracy is.
- Large data quantities can be readily handled with low-level computing infrastructure, there is potential for scaling.
- A vast amount of drone-based imagery is underutilised.





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