



Spatial and temporal soil carbon assessment at the hillslope and catchment scale (SaTSCA)

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Increases in the concentration of atmospheric greenhouse gases, principal amongst them CO₂, are a leading factor in climate change. As a result much research effort has lately been focused on quantifying the pattern of carbon interchange between the atmosphere, ocean and land. Currently it is estimated that terrestrial carbon fluxes account for more than half of the carbon transferred between the atmosphere and the earth's surface. Unfortunately, while terrestrial ecosystems represent a critical element of the carbon interchange system, a lack of understanding of the carbon cycle at regional and sub-regional scales means that they represent a source of primary uncertainty in the overall carbon budget. This study aims to address this deficiency by developing an understanding of catchment-scale processes critical for accurate quantification of carbon, nutrient and sediment flux to our nation's rivers and oceans in both natural and disturbed landscapes. This will involve developing insights into the controlling mechanisms of carbon, sediment and nutrient transfer in the soil-vegetation system and their hydrological transport throughout the catchment. Not only will this add substantially to our fundamental understanding of the carbon transfer process but also pave the way for more informed land use management decisions and ultimately greater protection of our waterways. At present, hillslope and catchment scale soil carbon studies are being conducted across a range of locations and climates throughout Australia with the main focus being on a well instrumented series of catchments in the Upper Hunter Valley, New South, Wales, Australia. This poster outlines the research objectives, equipment, available data and some current findings.