Geophysical Research Abstracts
Vol. 20, EGU2018-18756, 2018
EGU General Assembly 2018

terraGIS - a webGIS for delivery of digital soil maps in cotton growing areas of Australia

Jingyi Huang and John Triantafilis
UNSW Sydney, School of BEES, KENSINGTON, Australia (j.triantafilis@unsw.edu.au)

The effective management of soil requires basic data about the spatial distribution of its various physical, chemical and hydrological properties. This is because properties such as clay content determine the ability of soil to hold cations on their exchange sites and retain water in structural aggregates. However, data acquisition is labour intensive and time consuming. To value add to the limited soil data, remote-sensing technologies (e.g. airborne gamma-ray spectrometry) and proximal sensing instrumentation such as electromagnetic (EM) induction are being used as ancillary data. Here we provide case studies about how soil data have been coupled to remote and proximal sensed ancillary data to develop Digital Soil Maps (DSM) of soil physical, chemical and hydrological properties across seven cotton growing areas (i.e. Toobeah, Ashley, Wee Waa and Gunnedah, Trangie and Warren and Bourke), which are in the Darling River basin of southeastern Australia. A greater challenge is how to get these DSM to a stakeholder and in a way, that is useful for practical soil use and management. The aim of this paper is to describe how we facilitate access to the DSMs, using a simple-to-use webGIS platform called terraGIS has been developed and is briefly described. The platform is underpinned by Google Maps API, which is an Open Source development environment for building spatially-enabled internet applications. In conclusion, we believe that terraGIS and the supporting information available on the sister webpage (http://www.terragis.bees.unsw.edu.au/) allow easy access to and explanation of DSM of soil physical, chemical and hydrological properties and relevant to cotton growers, farm managers, consultants, extension staff, researchers, state and federal government agency personnel and policy analysts. Future work should be aimed at developing error budget maps to identify where additional soil and/or ancillary data is required to improve the accuracy of the DSM.