

Soil Moisture Monitoring in the Goulburn River Catchment

A collaborative research project between the University of Melbourne and the University of Newcastle, funded by the Australian Research Council, has just been established in the Merriwa region. This project is aimed at estimating the variation in soil moisture content across both space and time throughout the Goulburn River catchment, using a combination of satellite and ground-based data. Satellites are able to provide an estimate of soil moisture content in the top 1cm of soil for areas with low to moderate vegetation cover, but in order for this information to be useful to farmers it is necessary to infer soil moisture content deeper in the soil profile from this surface data. Moreover, the large satellite footprint (25km) needs to be downscaled to the farm or sub-farm level. This project seeks to do both of these tasks, and to estimate the soil moisture content in heavily vegetated areas through the use of streamflow data. This research is being undertaken by PhD students Ms Riki Davidson, Mr Manju Hemakumara and Mr Christoph Ruediger.

With the outstanding support of local landholders, a network of 26 soil moisture monitoring sites has been established across the Goulburn River catchment. Of these sites, 7 are in the Merriwa River catchment and 13 are in the Krui River catchment,



The Merriwa Landcare coordinator Mark Shortis congratulates Riki Davidson on completion of the Goulburn River catchment soil moisture monitoring network.

including 7 in a small subcatchment of the Krui. The remaining 6 monitoring sites are distributed throughout the greater Goulburn River catchment. The data obtained from these sites will be essential in the validation of soil moisture profile estimates from the satellite and streamflow measurements. There have also been 2 climate stations and 2 stream gauging sites installed in support of this project, with the intention of adding a further 3 stream gauging sites. Over the next 2 to 3 years there will be a number of intensive field campaigns aimed at validating the near-surface soil moisture measurements from satellites. Further practical support from landholders in the Goulburn River catchment in the form of allowing access to make near-surface soil moisture and supporting measurements will be greatly appreciated.

The investigators working on this project are interested in receiving daily rainfall data from landholders who collect such information. Further information regarding the project may be found at <http://www.civag.unimelb.edu.au/~jwalker/data/sasmas> and details on how you may contribute your rainfall data are available by sending email to Dr Jeffrey Walker at j.walker@unimelb.edu.au.