

As part of my Australian Cotton CRC summer scholarship I spent some time in Goondiwindi, Queensland. While there I operated from the Border Rivers Catchment Management Authority (BRCMA) under supervision of the catchment coordinator Ms Bronwyn Fisher, working on my honours project.

My honours project involves making a deep drainage risk map for part of the Macintyre River Valley, west of Goondiwindi towards Toobeah. Both NSW and Queensland sides of the valley are encompassed in my study.

In order to create a deep drainage risk map, a landuse map of the area needed to be made, since this will determine whether the input is rainfall or irrigation. To achieve this I firstly acquired a Landsat satellite image of the area and from spectral signatures identified the major landuses. However the accuracy of these results needed to be confirmed. Consequently I spent much of my time in Goondiwindi groundtruthing. Groundtruthing involved meeting farmers and, working with their farm map and the Landsat image, assigning a landuse to each area. I would then drive around the properties to confirm the landuse. Using Arcview I digitized a landuse map for the area.

While working on my honours project I also gained very valuable insight into the way natural resources are managed in the area. I sat in on working groups with the BRCMA and attended the Stanthorpe Show, where the BRCMA had a stall. I also worked with the Department of Primary Industries. I spent some time with the Rural Water Use Efficiency Officer and started my first siphon! I also worked with Ann Sullivan, the Cotton CRC representative in the DPI and went to Area Wide Management Meetings. This work experience was invaluable. I now have a much greater understanding and knowledge about the cotton industry and cotton farming. I also gained experience in bore monitoring, including Artesian bores, working with the hydrogeologist with the Queensland Department of Natural Resources.

I am currently writing my literature review. Using Dr. Odeh and Dr. Triantafilis database I have identified all sampled soil profiles in the area. The soil profile data

will be transformed to hydraulic properties using pedotransfer functions in SINFERS. These will subsequently be used to simulate deep drainage in a dry and a wet year using a soil and water transport model (SWAP). Using a cut-off value for deep drainage I will then produce deep drainage risk map, indicating the probability of deep drainage in the area.

My summer scholarship was a fantastic experience and I thank the Australian Cotton CRC for giving me this opportunity.