Burdekin Water Futures Newsletter

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Chair's message

The collection of research data and the development of research models for the Burdekin catchment play an important role in maintaining current information on the region and its resources. Measurement and modelling allows researchers to monitor changes and environmental impacts that result from natural events, agricultural activities and industrial influences. It also helps them assess potential impacts of alternative management strategies.

Our October newsletter announced the release of the Lower Burdekin Groundwater Science Plan. The initial projects of this plan focus on the development of a conceptual groundwater model and numerical groundwater flow and solute transport models. BWF is working with the State government and others to obtain funding for these priority projects.

As outlined in the article below, the Burdekin Shire Council is working with the Department of the Environment and Resource Management (DERM) to obtain aerial imagery and elevation data across the Burdekin region. Collation of this type of data allows us to build a more complete picture of our catchment so that we can continue to work towards a more sustainable future.

Cr Lyn McLaughlin, BWF Chair

Aerial imagery and LiDAR capture in Burdekin Shire

Burdekin Shire Council is acquiring high-resolution aerial imagery and elevation data through two projects being coordinated by DERM. The data collected will benefit asset management investigations and assist with engineering design tasks that determine flood prone areas with the aim to implement flood control strategies.

Ayr & Brandon proposed capture area

One of the projects includes the capture of 50 cm resolution aerial imagery covering the extent of the Burdekin shire, as well as 15 cm resolution imagery of the urban areas of Ayr, Home Hill and Brandon. These images will enable officers to extract spatial information such as location, distance and area, which would previously have required detailed field measurements. The data was captured during winter this year and will be delivered next month.

Home Hill proposed capture area

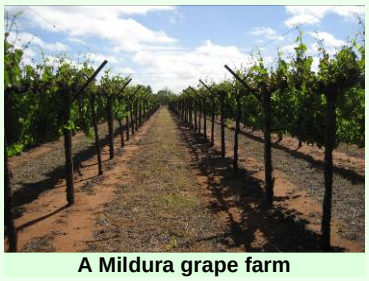
LIDAR zones: Phase 1 (yellow) and 2 (blue)

The second project involves the capture of elevation data by Light Detection and Ranging (LiDAR). This will provide 1 m resolution bare earth digital elevation models plus the generation of 0.25 m interval contours. The first phase of this project is nearing completion and will cover a proposed area of about 700 km^2, including a continuous section through the urban areas of Ayr, Home Hill, Brandon and Giru. The second phase, due for delivery in the first half of next year, will cover a proposed area of about 1600 km^2, taking in the coastal region of the shire plus the townships of Clare, Millaroo and Dalbeg.

Irrigation Australia conference perspective

As reported in our last issue, BWF deputy chair Michael Hoey, BWF member Andrew Kelly, and others from the lower Burdekin, attended the Irrigation Australia Conference at Swan Hill last month.

Mr Kelly (left) said the conference was a great learning experience. "Seeing what is happening in other catchments nation-wide has been extremely beneficial. The use of groundwater is not just limited to agricultural irrigation practices. There is demand for industrial and urban use as well. With drought a factor influencing the reduction of surface water in parts of Australia and internationally, there is an increased demand on groundwater resources."



A Mildura grape farm

Seeing how growers and irrigation providers in drought-stricken areas have adopted changed water management practices was an eye-opener for Mr Kelly. "This has highlighted to me the importance of treating our water with respect. Water plays many roles, including an important environmental one within our catchment, and we must manage it efficiently and ensure that it never leaves the north."

Michael Hoey (2nd left) at the Red Cliffs pump station near Mildura

Mr Hoey, Mr Kelly and others from the lower Burdekin visited Lower Murray Water to look into the latest developments in irrigation supply infrastructure and to learn about its board structure and governance arrangements. Lower Murray Water has responsibility for rural irrigation, urban water and sewage, and effectively manages the water resource as a whole. Of particular interest were the new installations for urban wastewater treatment plants and high pressure irrigation water that are delivered at the farm gate. These systems allow for efficient use of water resources and the potential for reuse of water.

Mr Hoey said the irrigation systems of the lower Murray were reliant on good drainage practices. "There is an extensive network of drainage systems which pump deep drainage to designated areas away from the Murray River," he said. "The lower Murray is a river delta region similar to the lower Burdekin, and it is important to have good drainage as part of a whole of system approach."

BWF member receives prestigious international award

Photo courtesy of University of Pretoria

Dr Keith Bristow (left) is the first Australian to be awarded the Don & Betty Kirkham Soil Physics Award, the most prestigious international award for outstanding achievements in soil physics and vadose zone hydrology. Named in honour of Don Kirkham, one of the pre-eminent soil physicists of the 20th century, the award recognises the quality, significance, originality and total impact of basic and applied research, teaching and contribution in soil physics and hydrology, both nationally and internationally.

Member of BWF, Dr Bristow is a senior principal research scientist with CSIRO Land and Water, program leader in the CRC for Irrigation Futures, and honorary professor at University of Pretoria in South Africa. Dr Bristow's high personal standing, experience and leadership in the soil, hydrological and environmental sciences is widely recognised nationally and internationally. Dr Bristow is passionate about his science and its application to improve understanding and management of our soil, water, land and ecological systems. He has built on his experience in soil physics and hydrology and worked to integrate science, policy and community interests through strong partnerships with government, industry and other organisations as a foundation for effective delivery of research outcomes.

"It is a privilege and honour to receive this award and to stand amongst past recipients who have made exceptional contributions on the international stage to the fields of soil physics and hydrology," Dr Bristow said on receiving the award. It was presented at the 2009 Soil Science Society of America Awards in Pittsburgh, Pennsylvania, on November 4.

Visit the BWF website: http://www.clw.csiro.au/naif/casestudies/burdekin-water-futures.html