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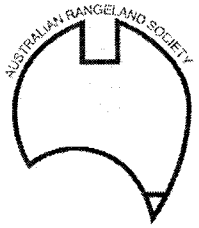

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A NEW APPROACH FOR MORE EFFECTIVE LAND UNIT MAPPING IN THE ORD RIVER CATCHMENT OF WA

Noel Schoknecht[1], Alan Payne1, Phil Baird[2], Elisabeth Bui[3] and David Simon[3]

[1]Department of Agriculture, Western Australia, Baron-Hay Court, South Perth 6151
[2]Department of Agriculture, Western Australia, Kununurra, 6743
[3]CSIRO Land and Water, GPO Box 1666, Canberra, 2601

The main biophysical datasets presently available for the Western Australian part of the Ord River catchment is land systems mapping (nominal scale 1:250,000) conducted by CSIRO fifty years ago and regional vegetation mapping by John Beard (1979). By contrast, the Northern Territory part of the Ord River catchment has recent detailed land unit mapping (nominal scale 1:50,000 to 1:100,000) as the result of a lengthy mapping program. Land management in the Western Australian part of the Ord would benefit from land unit mapping similar to that available in the Northern Territory.

Traditional techniques for mapping at the land unit scale are expensive, and require extensive fieldwork. Funds to conduct land unit mapping using these techniques are not available in WA, and a project was initiated as part of the Ord-Bonaparte Program to trial a new technique for land unit mapping. The technique involved use of existing mapping (land systems - Stewart et al. 1970, land units – de Salis 1993, and geology), climate data, remotely sensed datasets (Landsat TM, Digital Elevation Models), targeted field work and expert-driven modelling to derive land units. The modelling is based on techniques developed for the Murray-Darling Basin by Bui et al. (1998). The work was a collaborative effort between the Department of Agriculture, Western Australia and CSIRO Land and Water.

The first model, prior to field work, used a coarse 250m Digital Elevation Model (DEM) and was not a good predictor of land units. Nine person-weeks of fieldwork was conducted in August and November 2001 to prepare land unit maps of representative areas to be used as training and validation data in the modelling.

The second model, produced in June 2002 using a 30m DEM and the training and validation mapping, produced a far superior product, although further work was required in the rules assigned to the modelling process and improvement of the training data.

The results of the third (and hopefully last) modelling process will be presented in the poster at the conference in September. The poster will also include a comparison of the cost of this process compared with traditional mapping techniques, and indication of comparative map reliabilities.

If the technique is effective it could be applied to other parts of the rangelands that only have very broad regional mapping.

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