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VEGETATION MAPPING OF THE WESTERN DIVISION SECTION OF WALGETT SHIRE NSW

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Background

The Western Division section of Walgett Shire (approx. 1.1 million ha) was mapped for native vegetation by verifying and upgrading Murray Darling Basin Commission (MDBC) project M305 data. The mapping project was to provide natural resource information to assist native vegetation management particularly at a regional level, through the Walgett Regional Vegetation Committee (WRVC) established under the NSW Native Vegetation Conservation Act (1997). The mapping was commissioned by the Northern Floodplains Regional Planning Committee (NFRPC) in June 1997, compiled by NSW Department of Land and Water Conservation (DLWC Far West Region) in June 1997 – December 1998, and funded by the Natural Heritage Trust, Environment Australia, DLWC and the MDBC.

Existing native vegetation data sets developed under the Murray-Darling Basin Commission's "M305" mapping program, form the basis of providing regional native vegetation mapping products, statistics and interpretation. Two methodologies were used to enhance M305 products and to provide associated interpretation, based on the requirements of regional vegetation managers in particular the NFRPC and the WRVC.

Development of decision support tools both for the enhancement of M305 structural vegetation data and provision of interpretation were used to provide an indication of mapping accuracy and limitations of vegetation descriptions from such mapping products and statistics.

Location

The Walgett Shire was first to be designated as a regional planning area under the NVC Act. The whole of the Walgett Shire falls within the greater Murray Darling Basin which has complete coverage of base M305 products (Ritman 1995). Assessment of projects relating to enhancement and interpretation of M305 data is therefore of considerable importance, in determining extrapolation of techniques from the Walgett project area to other areas with M305 mapping, or similar image interpretation.

The region holds a complex mix of landuses including wheat, cotton and grazing as well as two distinct land tenure areas, ie Western Division section of predominantly perpetual leasehold land and the eastern/southern section of mainly freehold land.

Methodology

Part of the original M305 mapping involved production of a digital vegetation data set (structural vegetation) at a Basin-wide level of resolution (1:100,000 nominal scale), derived from interpretation of LANDSAT-TM imagery supported by air-photo interpretation and ground truthing.

A major constraint to the use of M305 structural woody coding was the inconsistent approach to manual interpretation for the structural vegetation layer. Several operators may have completed 1:100,000 map sheet tiles in a region each with a different botanical interpretation and code description for the woody polygons.

This constraint underlies any attempt to enhance the original data sets. Selected representative woody codes were verified by expert visual assessment and edited on screen. Non woody polygons were

upgraded to reflect broad vegetation types and land uses with < 20% projected woody canopy cover. Specific communities mapped by such upgrading included lignum, canegrass, standing dead timber (poisoned or ringbarked) and chenopod shrublands. A pre clearing layer was also incorporated.

Product Types

Products produced are available as digital or hard copy. Hard copy products are provided by Department of Land and Water Conservation either as specific vegetation information (maps, statistics) or as links to other data sets eg. cadastre, reserves (maps, statistics). Descriptions of vegetation communities including structure and floristics, condition, status, cultural heritage value, production value, habitat value, soils and land capability and threats are also provided.

Community Acceptance

Although the level of mapping detail is coarse, upgraded M305 products for West Walgett have proved useful for the local WRVC. An essential component of presentation however, is a clear indication of the limitations of interpretation and compilation methodology. Endorsement of upgraded West Walgett data was achieved through technical consultation at all stages of development initially by NFRPC and subsequently WRVC.

Product Use

Products for West Walgett are provided for agencies or community groups involved in native vegetation management. Suitable use for the level of mapping scale and interpretation is setting regional perspectives, providing an overview for vegetation planning and identifying vegetation communities of significance. Integration with other data sets may generate additional information relevant to specific regional issues eg. information on the type and extent of vegetation communities on particular reserves, or cumulative impact of clearing of a particular vegetation community.

References

Ritman, K.T. (1995). Structural Vegetation Data : a specifications manual for the Murray Darling Basin Project M305.

Sawtell, G.R. (2000). Native Vegetation Assessment – Assessing the status, condition and trends of native vegetation communities to support vegetation management in low rainfall cropping lands. DLWC.