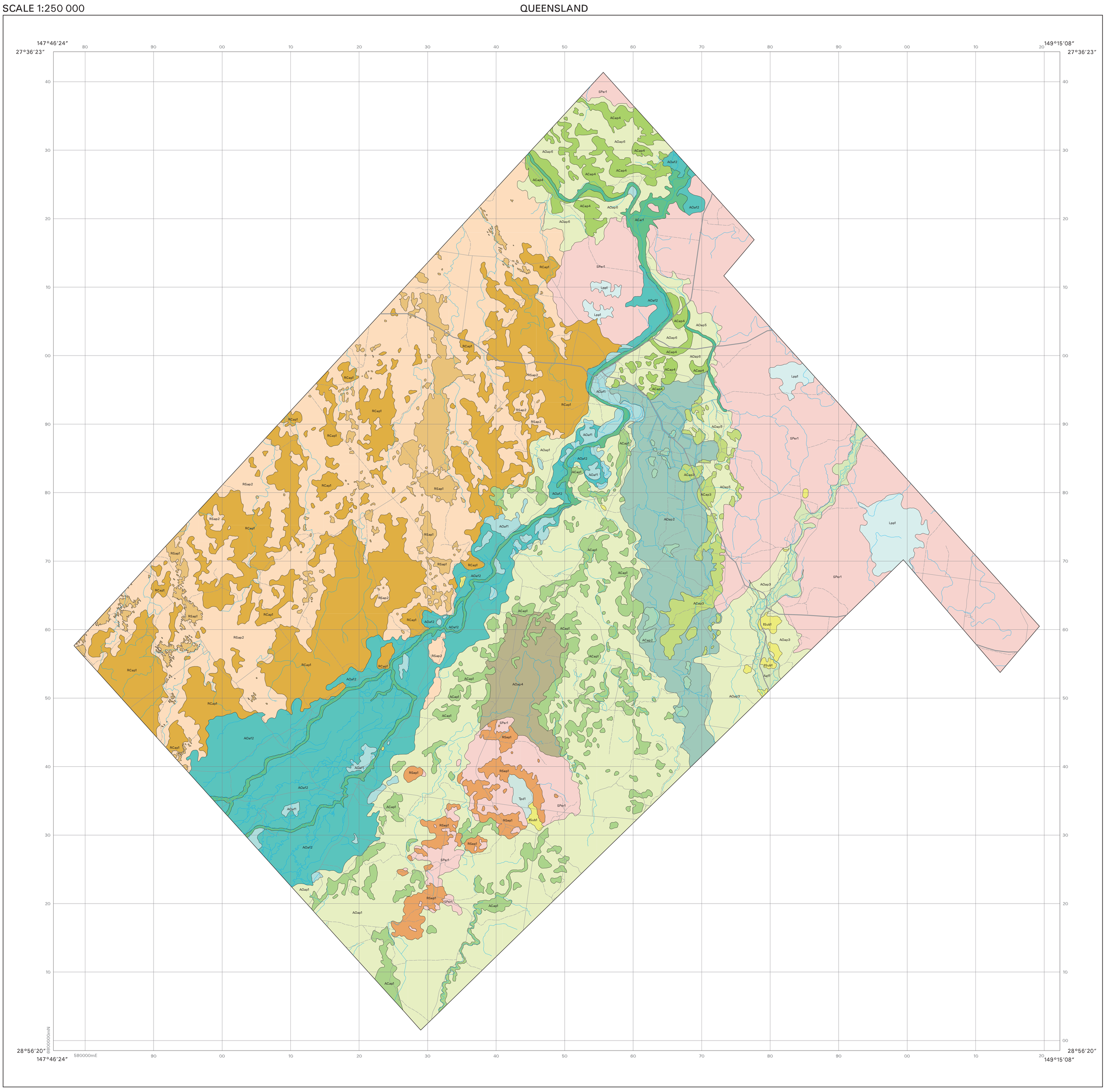
LOWER BALONNE SPECIAL

REGOLITH-LANDFORMS

SCALE 1:250 000 QUEENSLAND



TRANSPORTED REGOLITH

Alluvial sediments

Alluvial sediments

- Aaf1 — *Stream channels, levees and back plain deposits of the modern Moonie flood plain.*

Channel deposits

- ACap1 — *Sandy alluvium in levees and scroll bars associated with former channels of the Balonne River.*
- ACap2 — *Sandy alluvium in levee and scroll bar deposits associated with the former channels of the Balonne River.*
- ACap3 — *Sandy alluvium in levee and scroll bar deposits associated with the former channels of the Balonne River.*
- ACap4 — *Sandy alluvium in levees and circular scroll bars associated with former channels of the Balonne River.*
- ACar1 — *Channel silts and sands and minor levee and channel splay deposits of the modern Balonne and Maranoa River channels.*

Overbank deposits

- AOaf1 — *Sand dominated levees and channel splay deposits of the modern Balonne flood plain with minor source bordering dunes.*
- AOaf2 — *Grey clays of the modern Balonne back plain commonly with well developed gilgai structures. Minor occurrence of residual Cretaceous calcareous accumulations. Minor sandy levee and channel bank deposits.*
- AOap1 — *Clay and sandy clay alluvium on a back plain associated with the former Balonne river. Vertisols and gilgai structures present as well as some duplex soils.*
- AOap2 — *Clay and sandy clay alluvium with some gilgai structures on a back plain associated with the former Balonne River.*
- AOap3 — *Clay and sandy clay alluvium on a back plain associated with the former Balonne and Moonie Rivers. Occasional levees, scroll bars and channel bank deposits.*
- AOap4 — *Clay dominant sediments associated with a back plain of the former Balonne River with minor sandy channel deposits.*
- AOap5 — *Clay and sandy clay alluvium with some gilgai on a back plain associated with the former Balonne River. Minor occurance of residual Cretaceous sands and clays.*
- AOap6 — *Clay and sandy clay alluvium on a backplain associated with the former Balonne River.*

Aeolian sediments

Aeolian sand

- Eds1 — *Well sorted aeolian sand in source bordering dunes adjacent to channels and depositional plains.*

Lacustrine sediments

Lacustrine sediments

- Lpp1 — *Clay pans with saline clay and silty clay sediments.*

Terrestial sediments

Terrestial sediments

- Tpd1 — *Fine silt and clay on depositional plain surrounded by Cretaceous bedrock exposure.*

IN-SITU REGOLITH

Residual material

Residual clay

- RCap1 — *Residual predominantly sodic clay on shallow valley floors between drainage lines on the Maranoa surface. Vertisols, gilgai structures and local occurances of gypsum present.*

Residual sand

- RSap1 — *Residual sand on low interfluves between drainage lines on the Maranoa surface.*
- RSap2 — *Residual clayey sand on slopes below interfluves between drainage lines on the Maranoa surface.*
- RSap3 — *Moderately weathered residual red/brown to yellow sand and minor silt and clay on erosional plains, derived from the underlying Griman Creek Formation.*

Saprolith

Saprolith

- SPsr1 — *Residual sands and clays over saprolite formed from the variable weathering of the Cretaceous Griman Creek Formation. In places strongly mottled with siltcrete and ferricrete.*

SCALE 1:250 000

5 0 5 10 15 20 25 Kilometres

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
LATITUDE OF ORIGIN: 0° LONGITUDE OF ORIGIN: 147°
HORIZONTAL DATUM: AUSTRALIAN GEODETIC DATUM 84
MGA Zone 55

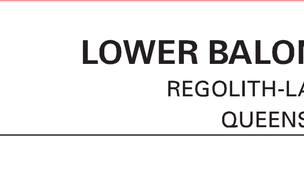
LINE LEGEND

- Regolith-landform unit boundary
- Highway
- Secondary road
- Vehicle track
- River or creek

LANDFORMS

ap - Alluvial plain
af - Flood plain
ar - Alluvial channel
ep - Erosional plain
er - Erosional rise
pd - Depositional plain
pp - Playa plain
ub - Source bordering dune

MAP LOCALITY



INDEX TO 1:250 000 SHEETS

1:100 000 maps shown in blue

Compiled by A. Kemish, C. Pain, P. Kilgour and B. Maly (CRC LEME/GA), 2003.

Cartography and GIS by S. Mezzomo, GAV Unit, Geoscience Australia.

It is recommended that this map be referred to as:
Kemish, A., Pain, C., Kilgour P., and Maly, B. 2004. Lower Balonne Regolith–Landform Map (1:250,000 scale). Cooperative Research Centre for Landscape Environments and Mineral Exploration. The map accompanies the following report:
Kemish, A., Pain, C.F., Kilgour, P., and Maly, B., 2004. Regolith Landform, Lower Balonne, Southern Queensland, Australia, CRC LEME Open File Report, 161.

Regolith–Landform Mapping Scheme:
The regolith–landform units portray dominant regolith–landform associations and their inherent geomorphic settings as outlined in RTMAP Regolith Database Field Book and Users Guide (Pain C. et al., in prep. for 2nd edition. CRC LEME Report 138. see CRC LEME Web Site). The regolith–landform units are labelled with a two letter code. The first letter symbols indicate dominant regolith type, and the lower case letter symbols indicate dominant landform type (see also Landforms table in map legend). The number following the letter code is a subset of a dominant regolith–landform association. Map unit descriptions are stored in RTMAP national database at Geoscience Australia.

The regolith–landform polygons on this map are based on interpretation of 1:80,000 scale black and white aerial photographs, imagery from airborne electromagnetics, gamma-ray spectrometrics, magnetics and digital elevation models, and Landsat TM and ASTER spaceborne images. There was also limited field checking.

Source of data: The geophysical imagery was obtained from the National Action Plan for Salinity and Water Quality (Australian Government Department of Natural Resources and Mines). The drainage and cultural data are taken from 1:250,000 scale topographic mapping.
This map was produced for the Lower Balonne Airborne Geophysical Project funded by the National Action Plan for Salinity and Water Quality. The National Action Plan is a joint initiative between the State and Commonwealth Governments.

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Copies of this map may be obtained from:

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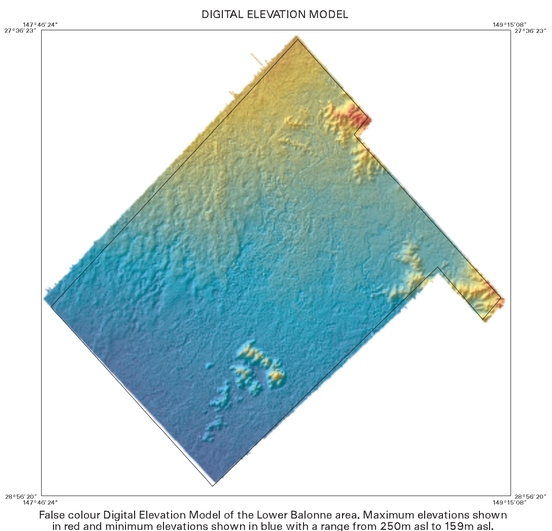
Horizontal coordinates on this map are based on the new: earth–centered GEOCENTRIC DATUM OF AUSTRALIA (GDA)
To convert GDA to AGD (around 10 metre accuracy):
Subtract 0.06" from latitude (S); Subtract 0.15" from East and 0.58" to latitude (S); Subtract 4.58" from longitude (E).
UTM grid coordinates (from MGA94 to AMG66/84) – subtract 184m from Northing; subtract 113m from Easting.

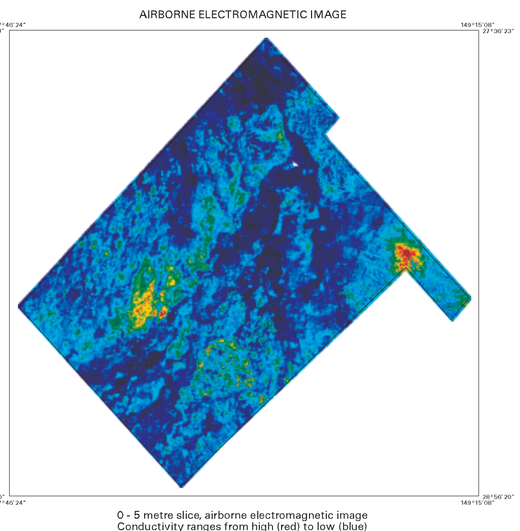
CRCLEME
Cooperative Research Centre for LANDSCAPE ENVIRONMENTS and MINERAL EXPLORATION

DIGITAL ELEVATION MODEL



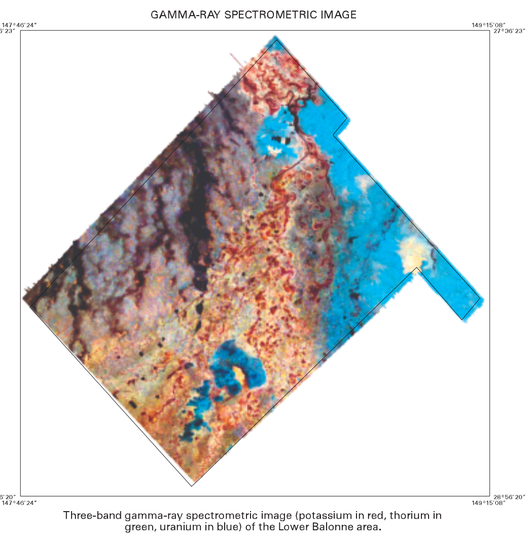
False colour Digital Elevation Model of the Lower Balonne area. Maximum elevations shown in red and minimum elevations shown in blue with a range from 250m asl to 159m asl.

AIRBORNE ELECTROMAGNETIC IMAGE



0 - 5 metre silcs, airborne electromagnetic image
Conductivity ranges from high (red) to low (blue)

GAMMA-RAY SPECTROMETRIC IMAGE



Three-band gamma-ray spectrometric image (potassium in red, thorium in green, uranium in blue) of the Lower Balonne area.