CLO_CobarPbZn_FaultBendDensity.img

Raster Dataset

Thumbnail Not Available
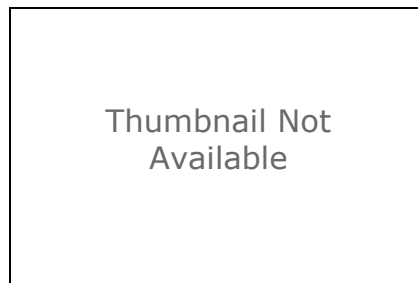
Tags

Cobar Pb-Zn, Cobar Superbasin, Cobar, Predictive Map, Central Lachlan Orogen, Zone 55W

Summary

Fault Bend Density

Description

Structural trap; Mineralisation controlled by fault bends.

Class>=4 (moderate-high density)

For further layer details refer to the 'Spatial_Data_Table.xlsx' file in the root directory of the data package.

Credits

Dataset Authors:

Ford A.
Peters K.
Greenfield J.
Blevin P.
Downes P.
Fitzherbert J.

Use limitations
There are no access and use limitations for this item.

Extent
West	144.835378	**East**	148.459348
North	-30.035729	**South**	-36.242174

Scale Range
Maximum (zoomed in)	1:5,000
Minimum (zoomed out)	1:150,000,000

ArcGIS Metadata ▶

Topics and Keywords ▶

THEMES OR CATEGORIES OF THE RESOURCE   geoscientificInformation

* Content type   Downloadable Data

Hide Topics and Keywords ▲

Citation ▶

* Title   CLO_CobarPbZn_FaultBendDensity.img
Publication date   2020-06-01   00:00:00

Edition   1a
Edition date   2022-08-24

Presentation formats   ***** digital map

Other citation details
It is recommended that this dataset be referred to as:

Ford A., Peters K., Downes P., Blevin P., Greenfield J. and Fitzherbert J. 2020. Central Lachlan Orogen Mineral Potential Data Package version 1 [Digital Dataset]. Geological Survey of New South Wales, Maitland.

The data package was further modified in August 2022 to improve usability. No reinterpretation of the data was conducted. For further details refer to the 'README.txt' file in the root directory of the data package.

Hide Citation ▲

Citation Contacts ▶

Responsible party
   Organization's name   Mining, Exploration and Geoscience, Department of Regional NSW
   Contact's position   Mineral Systems Manager
   Contact's role   custodian

   Contact information   ▶
   Address
      Type   physical
      Delivery point   516 High st
      City   Maitland
      Administrative area   NSW
      Postal code   2320
      Country   AU
      e-mail address   minsys.info@geoscience.nsw.gov.au

   Online resource
      Location   https://www.regional.nsw.gov.au/meg
      Name   Mining, Exploration and Geoscience website
      Description   The website of the Department of Regional NSW, Mining, Exploration and Geoscience
      Function performed   information

   Hide Contact information ▲

Hide Citation Contacts ▲

Resource Details ▶

Dataset languages   ***** English (AUSTRALIA)

DATASET CHARACTER SET   utf8 - 8 bit UCS Transfer Format

STATUS   completed
SPATIAL REPRESENTATION TYPE   * grid

* PROCESSING ENVIRONMENT   Version 6.2 (Build 9200) ; Esri ArcGIS 10.4.0.5524

CREDITS
   Dataset Authors:

   Ford A.
   Peters K.
   Greenfield J.
   Blevin P.
   Downes P.
   Fitzherbert J.

ARCGIS ITEM PROPERTIES
   * NAME   CLO_CobarPbZn_FaultBendDensity.img
   * LOCATION   file://D:\Mineral Potential Data Packages\Central Lachlan Orogen Mineral
Potential Data Package\Cobar_PbZn\Predictive\CLO_CobarPbZn_FaultBendDensity.img
      * ACCESS PROTOCOL   Local Area Network

Hide Resource Details ▲

Extents ▶

EXTENT
   DESCRIPTION
      The dataset covers the land areas of Central Lachlan Orogen in New South Wales,
      Australia.

EXTENT
   GEOGRAPHIC EXTENT
      BOUNDING RECTANGLE
         EXTENT TYPE   Extent used for searching
         * WEST LONGITUDE   144.835378
         * EAST LONGITUDE   148.459348
         * NORTH LATITUDE   -30.035729
         * SOUTH LATITUDE   -36.242174
         * EXTENT CONTAINS THE RESOURCE   Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
   * WEST LONGITUDE   305443.409845
   * EAST LONGITUDE   631143.409845
   * SOUTH LATITUDE   5989190.398900
   * NORTH LATITUDE   6675540.398900
   * EXTENT CONTAINS THE RESOURCE   Yes

Hide Extents ▲

Resource Points of Contact ▶

POINT OF CONTACT
   ORGANIZATION'S NAME   Mining, Exploration and Geoscience, Department of Regional NSW
   CONTACT'S POSITION   Mineral Systems Manager
   CONTACT'S ROLE   custodian

      CONTACT INFORMATION   ▶
         ADDRESS
            TYPE   physical
            DELIVERY POINT   516 High st

CITY   Maitland
ADMINISTRATIVE AREA   NSW
POSTAL CODE   2320
COUNTRY   AU
E-MAIL ADDRESS   minsys.info@geoscience.nsw.gov.au

ONLINE RESOURCE
LOCATION   https://www.regional.nsw.gov.au/meg
NAME   Mining, Exploration and Geoscience website
DESCRIPTION   The website of the Department of Regional NSW, Mining, Exploration and Geoscience
FUNCTION PERFORMED   information

Hide Contact information ▲

Hide Resource Points of Contact ▲

Resource Maintenance ▶

RESOURCE MAINTENANCE
UPDATE FREQUENCY   unknown

Hide Resource Maintenance ▲

Resource Constraints ▶

LEGAL CONSTRAINTS
ACCESS CONSTRAINTS   license
USE CONSTRAINTS   copyright

OTHER CONSTRAINTS
Disclaimer
While the material has been created with all due care, the Department of Regional NSW does not warrant or represent that the material is free from errors or omission, or that it is exhaustive.

Because the material is designed to promote the free exchange of information only, the Department cannot and does not make any claim as to the accuracy, authenticity, currency, completeness, reliability or suitability of any material, especially material supplied by third parties or linked to third party sites.

The material is provided on the basis that you are responsible for assessing the relevance of its content.

The Department will not accept liability for any loss, damage, cost or expense that you may incur as a result of the use of or reliance upon the material on this product or any linked sites.

Please also note the material may change without notice and you should use the current material from the Mining, Exploration and Geoscience website (https://www.resourcesandgeoscience.nsw.gov.au/) and not rely on material previously printed or stored by you.

Copyright Statement
© State of New South Wales and Department of Regional NSW 2022 (unless otherwise indicated). This product contains information, data, documents, pages and images ("the material") prepared by the NSW Government Department of Regional NSW (the Department).

The New South Wales Government, operating through the Department, supports and

Hide Resource Constraints ▲

Spatial Reference ▶

ARCGIS COORDINATE SYSTEM
* **TYPE** Projected
* **GEOGRAPHIC COORDINATE REFERENCE** GCS_GDA_1994
* **PROJECTION** GDA94_MGA_zone_55
* **COORDINATE REFERENCE DETAILS**

PROJECTED COORDINATE SYSTEM
X ORIGIN -5120900
Y ORIGIN 1900
XY SCALE 450445547.3910538
Z ORIGIN -100000
Z SCALE 10000
M ORIGIN -100000
M SCALE 10000
XY TOLERANCE 0.001
Z TOLERANCE 0.001
M TOLERANCE 0.001
HIGH PRECISION true
WELL-KNOWN TEXT PROJCS["GDA94_MGA_zone_55",GEOGCS["GCS_GDA_1994",DATUM ["D_GDA_1994",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM ["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION ["Transverse_Mercator"],PARAMETER["false_easting",500000.0],PARAMETER ["false_northing",10000000.0],PARAMETER["central_meridian",147.0],PARAMETER ["scale_factor",0.9996],PARAMETER["latitude_of_origin",0.0],UNIT["Meter",1.0]]

REFERENCE SYSTEM IDENTIFIER
* **VALUE** 0

Hide Spatial Reference ▲

Spatial Data Properties ▶

GEORECTIFIED GRID ▶
* **NUMBER OF DIMENSIONS** 2

AXIS DIMENSIONS PROPERTIES
DIMENSION TYPE column (x-axis)
* **DIMENSION SIZE** 6514
* **RESOLUTION** 50.000000 m (meter)

AXIS DIMENSIONS PROPERTIES
DIMENSION TYPE row (y-axis)
* **DIMENSION SIZE** 13727
* **RESOLUTION** 50.000000 m (meter)

* **CELL GEOMETRY** area
* **POINT IN PIXEL** center

* **TRANSFORMATION PARAMETERS ARE AVAILABLE** Yes

* **CHECK POINTS ARE AVAILABLE** No

CORNER POINTS
* **POINT** 305443.409845 5989190.398900
* **POINT** 305443.409845 6675540.398900
* **POINT** 631143.409845 6675540.398900
* **POINT** 631143.409845 5989190.398900

* **CENTER POINT** 468293.409845 6332365.398900

Hide Georectified Grid ▲

ARCGIS RASTER PROPERTIES ▶
GENERAL INFORMATION
* **PIXEL DEPTH** 8
* **COMPRESSION TYPE** RLE
* **NUMBER OF BANDS** 1
* **RASTER FORMAT** IMAGINE Image
* **SOURCE TYPE** continuous
* **PIXEL TYPE** signed integer
* **NO DATA VALUE** -1
* **HAS COLORMAP** No
* **HAS PYRAMIDS** No

Hide ArcGIS Raster Properties ▲

Hide Spatial Data Properties ▲

Spatial Data Content ▶

IMAGE DESCRIPTION
* **TYPE OF INFORMATION** image

BAND INFORMATION
* **DESCRIPTION** densfltb
* **NUMBER OF BITS PER VALUE** 8

TRIANGULATION HAS BEEN PERFORMED No
RADIOMETRIC CALIBRATION IS AVAILABLE No
CAMERA CALIBRATION IS AVAILABLE No

Hide Spatial Data Content ▲

Lineage ►

LINEAGE STATEMENT

Central Lachlan Orogen Mineral Systems - Mineral Potential Report Executive Summary

The central Lachlan Orogen (CLO) in MGA Zone 55 in New South Wales (NSW) is prospective for Cu-Au-Pb-Zn-Ag and Sn-W mineralisation. In collaboration with the Geological Survey of New South Wales (GSNSW), mineral potential mapping using a weights of evidence approach for three key mineral systems in the CLO has resulted in a comprehensive assessment of the mineral resource potential of the region.

The expertise of the GSNSW has been utilised to develop mineral system models for the following three mineral systems in the CLO: Cobar Cu–Au, Cobar Pb–Zn, and granite-related Sn–W. These models have been used to determine key predictive variables that represent the different critical ore-forming processes in each mineral system: source, transport, trap, and deposition. This information has been aggregated into a comprehensive spatial data table in MS Excel that records information about all the predictive maps including their relevance to the specified mineral system, the data and methods used to create them, and their spatial correlation with known mineralisation.

High quality pre-competitive geoscience data is available from the GSNSW. This data was value added by using a mineral system approach in the mineral potential mapping project. Available datasets include the seamless basement geology, fault attribution, metamorphic facies, multi-element geochemistry, detailed petrology, and mineral occurrence data. These datasets were developed by the GSNSW prior to initiating this study and allowed for a large number of spatial variables to be tested for relevance to the specific mineral system being modelled. Feedback was provided during data review, processing, and subsequent spatial analysis allowing for improvements to be made to the data. This feedback process was crucial in assessing the exploration relevance of the datasets for each of the modelled CLO mineral systems.

The creation and spatial analysis of predictive maps that represent spatial proxies for the various processes in each mineral system was undertaken using the weights of evidence method for the Cobar Cu–Au, Cobar Pb–Zn, and granite-related Sn–W mineral systems. Between 138 and 196 valid predictive maps were created for each mineral system model. The percentage of predictive maps that correlated well with training data ranged between 46% and 67%. Details of the spatial correlations between the predictive maps and known mineralisation for each of the three mineral systems are provided in the spatial data table. The spatial data table is an important resource for understanding how the predictive maps are relevant to each mineral system that was modelled in the CLO. The results of the spatial data modelling assist with identifying key exploration criteria that can be used to guide further data collection and attribution relevant to each mineral system.

Between 8 and 10 predictive maps were selected and combined to produce mineral potential maps that map the geological potential for each of the three modelled mineral systems in the CLO. The predictive maps were selected based on multiple criteria: (1) having good regional data coverage, (2) showing a significant spatial correlation with the training points used to represent the mineral system, and (3) minimal duplication of predictive map patterns. The mineral potential maps were validated by evaluating the efficiency of classification using area-frequency tables.

The Cobar Cu–Au model has an efficiency of classification of 97.6%. The prospective area covers 13.4% of the Cobar study area and contains all 14 training points. The highly prospective area covers just 0.07% of the Cobar study area and contains 3 of the 14 training points.

The Cobar Pb–Zn model has an efficiency of classification of 96.8%. The prospective

area covers 16.6% of the Cobar study area and contains all 10 training points. The highly prospective area covers 0.13% of the study area and contains 2 of the 10 training points.

The granite-related Sn–W model has an efficiency of classification of 99.1%. The prospective area covers 14.0% of the Central Lachlan Orogen study area and contains all 13 training points. The highly prospective area covers 0.33% of the study area and contains 7 of the 13 training points.

Results indicate that the mineral potential maps were successful in predicting the location of known Cobar Cu–Au, Cobar Pb–Zn, and granite-related Sn–W mineralisation, and have also highlighted areas with potential for undiscovered mineralisation.

The mineral potential maps can be used for strategic land use planning and advice purposes, as a resource for guiding further mineral system studies, and for promoting exploration in the central Lachlan Orogen through the delivery of pre-competitive data that can be used for regional-scale targeting by the exploration industry.

A Mineral Potential Atlas has been created for the CLO project area that contains all the GIS files that were generated during the spatial data modelling process for the three modelled mineral systems. The atlas includes the training points, study areas, predictive maps, weights tables, mineral potential maps with their corresponding unique conditions, and the spatial data table. The spatial data table documents the files and processes used in the generation of predictive maps and the spatial correlation statistics for each map.

The Mineral Potential Atlas allows the predictive maps generated for each mineral system to be viewed independently, providing insight into how each map relates to the modelled mineral system. Different sub-sets of the predictive maps can also be combined to produce new mineral potential maps to highlight prospective areas for mineral exploration for the different mineral systems. Highly prospective areas can be converted into targets that can be attributed, ranked, and filtered in order to prioritise exploration on existing ground and guide tenement acquisition. New predictive maps and subsequent mineral potential maps can be generated when existing datasets are updated, new data becomes available, or new understanding of the mineral system generates new ideas.

The workflows applied during the mineral potential project for the CLO, including mineral systems analysis, data compilation/preparation and mineral potential modelling has been successfully applied to other mineralised regions and mineral systems within NSW.

Hide Lineage ▲

Distribution ▶

DISTRIBUTOR ▶
CONTACT INFORMATION
ORGANIZATION'S NAME   Mining, Exploration and Geoscience, Department of Regional NSW
CONTACT'S POSITION   Mineral Systems Manager
CONTACT'S ROLE   custodian

CONTACT INFORMATION ▶
ADDRESS
TYPE   physical
DELIVERY POINT   516 High st
CITY   Maitland
ADMINISTRATIVE AREA   NSW
POSTAL CODE   2320
COUNTRY   AU
E-MAIL ADDRESS   minsys.info@geoscience.nsw.gov.au

ONLINE RESOURCE
   LOCATION https://www.regional.nsw.gov.au/meg
   NAME Mining, Exploration and Geoscience website
   DESCRIPTION   The website of the Department of Regional NSW, Mining, Exploration and Geoscience
   FUNCTION PERFORMED   information

Hide Contact information ▲

Hide Distributor ▲

DISTRIBUTION FORMAT
  * NAME Raster Dataset

Hide Distribution ▲

Fields ▶

DETAILS FOR OBJECT CLO_CobarPbZn_FaultBendDensity.img.vat ▶
  * TYPE Table
  * ROW COUNT 2

FIELD OID ▶
  * ALIAS OID
  * DATA TYPE OID
  * WIDTH 4
  * PRECISION 0
  * SCALE 0
  * FIELD DESCRIPTION
    Internal feature number.

  * DESCRIPTION SOURCE
    Esri

  * DESCRIPTION OF VALUES
    Sequential unique whole numbers that are automatically generated.

Hide Field OID ▲

FIELD Value ▶
  * ALIAS Value
  * DATA TYPE Integer
  * WIDTH 10
  * PRECISION 10
  * SCALE 0

Hide Field Value ▲

FIELD Count ▶
  * ALIAS Count
  * DATA TYPE Double
  * WIDTH 19
  * PRECISION 0
  * SCALE 0

Hide Field Count ▲

Hide Details for object CLO_CobarPbZn_FaultBendDensity.img.vat ▲

Hide Fields ▲

References ►

PORTRAYAL CATALOGUE CITATION ►
TITLE Central Lachlan Orogen Mineral Potential Data Package
PUBLICATION DATE 2020-06-01 00:00:00

EDITION 1a
EDITION DATE 2022-08-24

PRESENTATION FORMATS digital map
FGDC GEOSPATIAL PRESENTATION FORMAT raster digital data

OTHER CITATION DETAILS
It is recommended that this dataset be referred to as:

Ford A., Peters K., Downes P., Blevin P., Greenfield J. and Fitzherbert J. 2020. Central Lachlan Orogen Mineral Potential Data Package version 1 [Digital Dataset]. Geological Survey of New South Wales, Maitland.

The data package was further modified in August 2022 to improve usability. No reinterpretation of the data was conducted. For further details refer to the 'README.txt' file in the root directory of the data package.

RESOURCE LOCATION ONLINE
LOCATION https://www.regional.nsw.gov.au/meg
FUNCTION PERFORMED download

Hide Portrayal catalogue citation ▲

Hide References ▲

Metadata Details ►

* METADATA LANGUAGE English (AUSTRALIA)

SCOPE OF THE DATA DESCRIBED BY THE METADATA ***** dataset
SCOPE NAME ***** dataset

* LAST UPDATE 2022-09-30

ARCGIS METADATA PROPERTIES
METADATA FORMAT ArcGIS 1.0
METADATA STYLE ISO 19139 Metadata Implementation Specification
STANDARD OR PROFILE USED TO EDIT METADATA ISO19139

CREATED IN ARCGIS FOR THE ITEM 2022-09-30 11:18:36
LAST MODIFIED IN ARCGIS FOR THE ITEM 2022-09-30 11:41:37

AUTOMATIC UPDATES
HAVE BEEN PERFORMED Yes
LAST UPDATE 2022-09-30 11:41:01

Hide Metadata Details ▲

Metadata Contacts ►

METADATA CONTACT
  ORGANIZATION'S NAME   Mining, Exploration and Geoscience, Department of Regional NSW
  CONTACT'S POSITION   Mineral Systems Manager
  CONTACT'S ROLE   custodian

  CONTACT INFORMATION   ►
    ADDRESS
      TYPE   physical
      DELIVERY POINT   516 High st
      CITY   Maitland
      ADMINISTRATIVE AREA   NSW
      POSTAL CODE   2320
      COUNTRY   AU
      E-MAIL ADDRESS   minsys.info@geoscience.nsw.gov.au

    ONLINE RESOURCE
      LOCATION   https://www.regional.nsw.gov.au/meg
      NAME   Mining, Exploration and Geoscience website
      DESCRIPTION   The website of the Department of Regional NSW, Mining, Exploration and Geoscience
      FUNCTION PERFORMED   information

    Hide Contact information ▲

Hide Metadata Contacts ▲

Metadata Maintenance ►

MAINTENANCE
  UPDATE FREQUENCY   unknown

Hide Metadata Maintenance ▲

FGDC Metadata (read-only) ▼