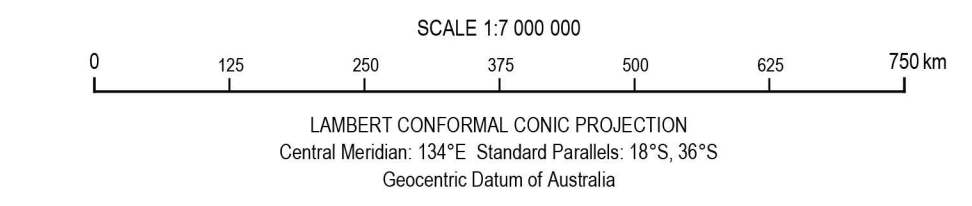


## Australian Operating Mines Map 2019



This map shows the location of mines operating at the end of 2019, developing mines and mines under care and maintenance in Australia. Developing mines are deposits where mine site development has commenced or where all approvals for mining have been received by the end of 2019. Mines under care and maintenance are deposits where mining has stopped and there is a remaining Joint Ore Reserve Committee (JORC) compliant Resource that may be mined or developed in the future.

Mines are shown as small symbols coloured by commodity type. The mine information is superimposed on a generalised surface geology map of Australia. The coloured areas represent rocks of different ages (see legend below) outcropping at the surface of the Earth. The greyscale background image on which the geology is superimposed represents the aeromagnetic response (0.5 vertical derivative of total magnetic intensity) of rocks at surface and at depth. In areas of younger basin and regolith cover (grey areas) the aeromagnetics shows the older geology continuing under this cover. In some areas these buried rocks are prospective for undiscovered mineral deposits.

- | Commodity type                             | Mine status                 |
|--------------------------------------------|-----------------------------|
| ● Base metals - Cu (Zn, Pb, Ag, Au)        | ○ Operating mine            |
| ● Base metals - Cu, Au, U                  | ○ Developing mine           |
| ● Base metals - Zn, Pb (Cu, Ag)            | □ Care and maintenance mine |
| ● Battery/alloy metals - Ni, Co, Mn, V, Mo |                             |
| ● Bauxite                                  |                             |
| ● Coal                                     |                             |
| ● Diamond                                  |                             |
| ● Fertiliser elements - P, K               |                             |
| ● Graphite                                 |                             |
| ● Heavy mineral sands                      |                             |
| ● Iron ore                                 |                             |
| ● Lithium                                  |                             |
| ● Other metals - Sn, W, Ta                 |                             |
| ● Precious metals - Au, Ag                 |                             |
| ● Rare earth elements                      |                             |
| ○ Uranium                                  |                             |

- Topographic feature**
- Bathymetry contour (depth in metres)
  - Major road
  - Capital city
  - City/town

Compiled by Alan Hughes, Mineral Resources, Advice and Promotion Section.  
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Printed by Digital Services, Bathurst, NSW.

It is recommended that this map be referred to as: Hughes, A., 2020. *Australian Operating Mines Map 2019* (20th Edition), Scale 1:7 000 000, Geoscience Australia, Canberra.

Further information can also be found on the Internet at:  
<http://www.ga.gov.au/scientific-topics/minerals/mineral-resources-and-advice>

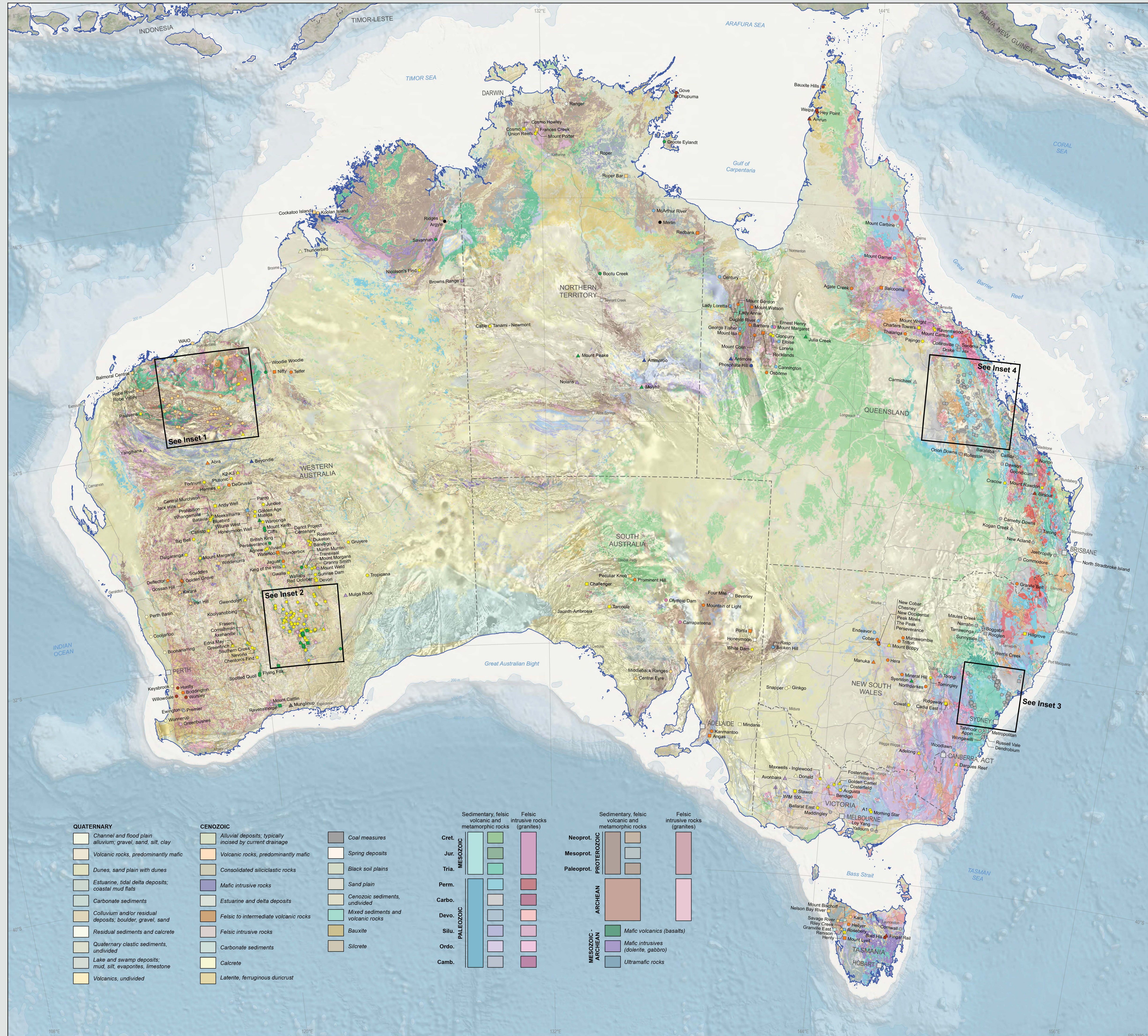
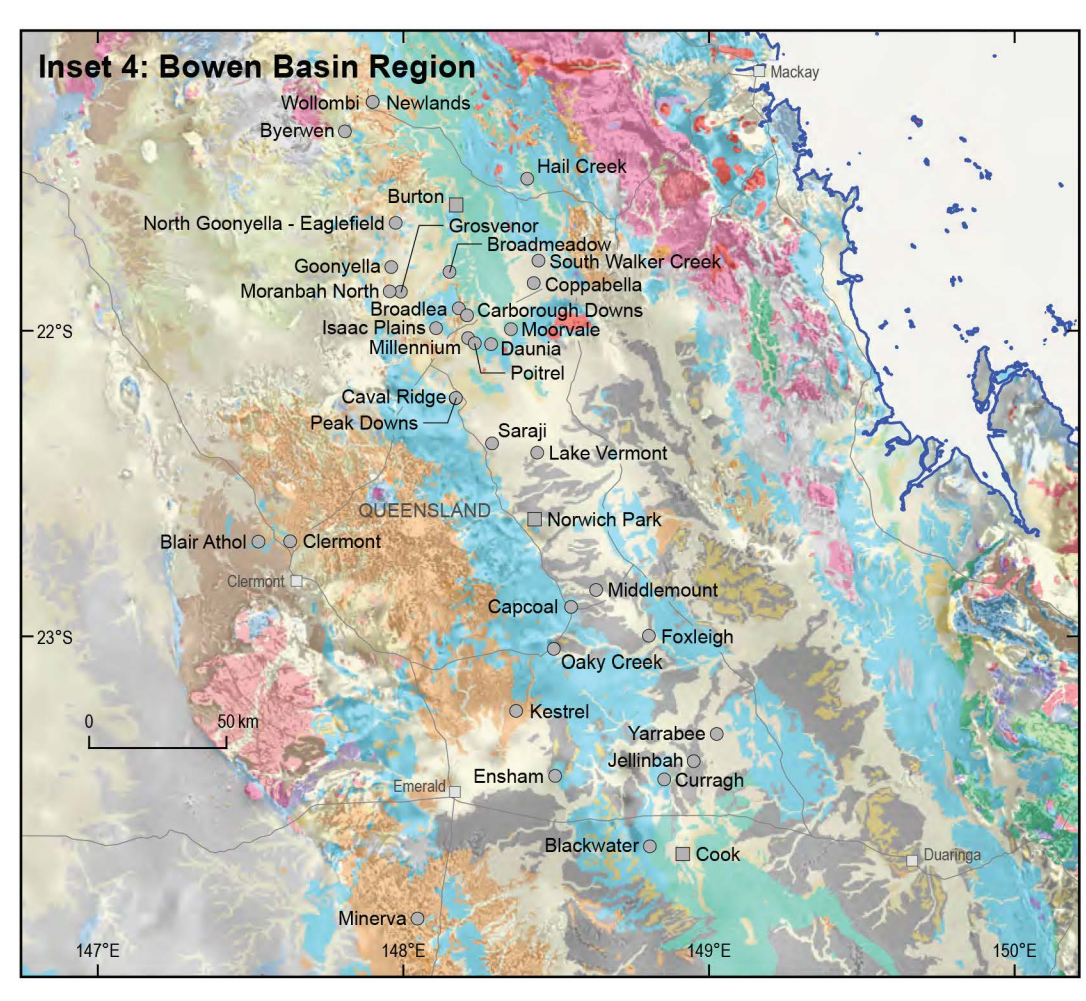
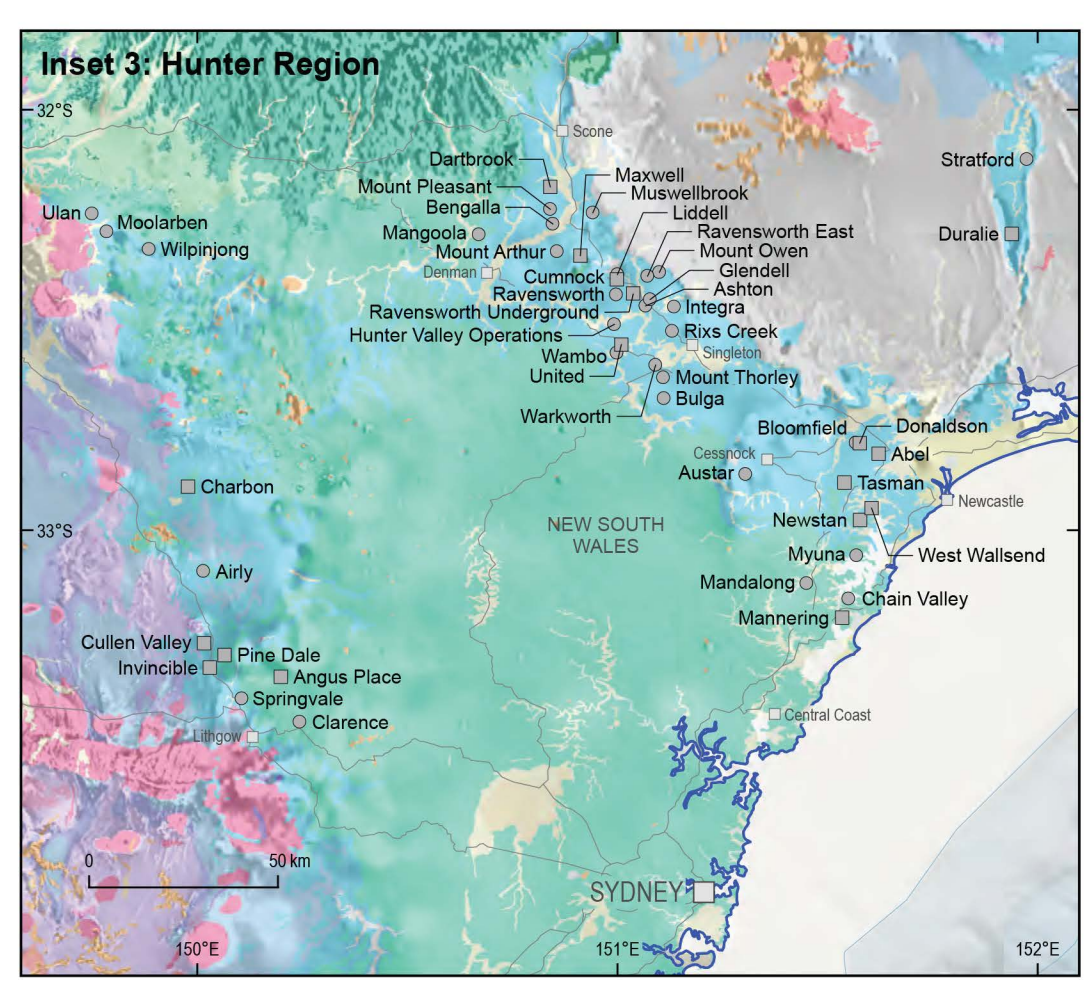
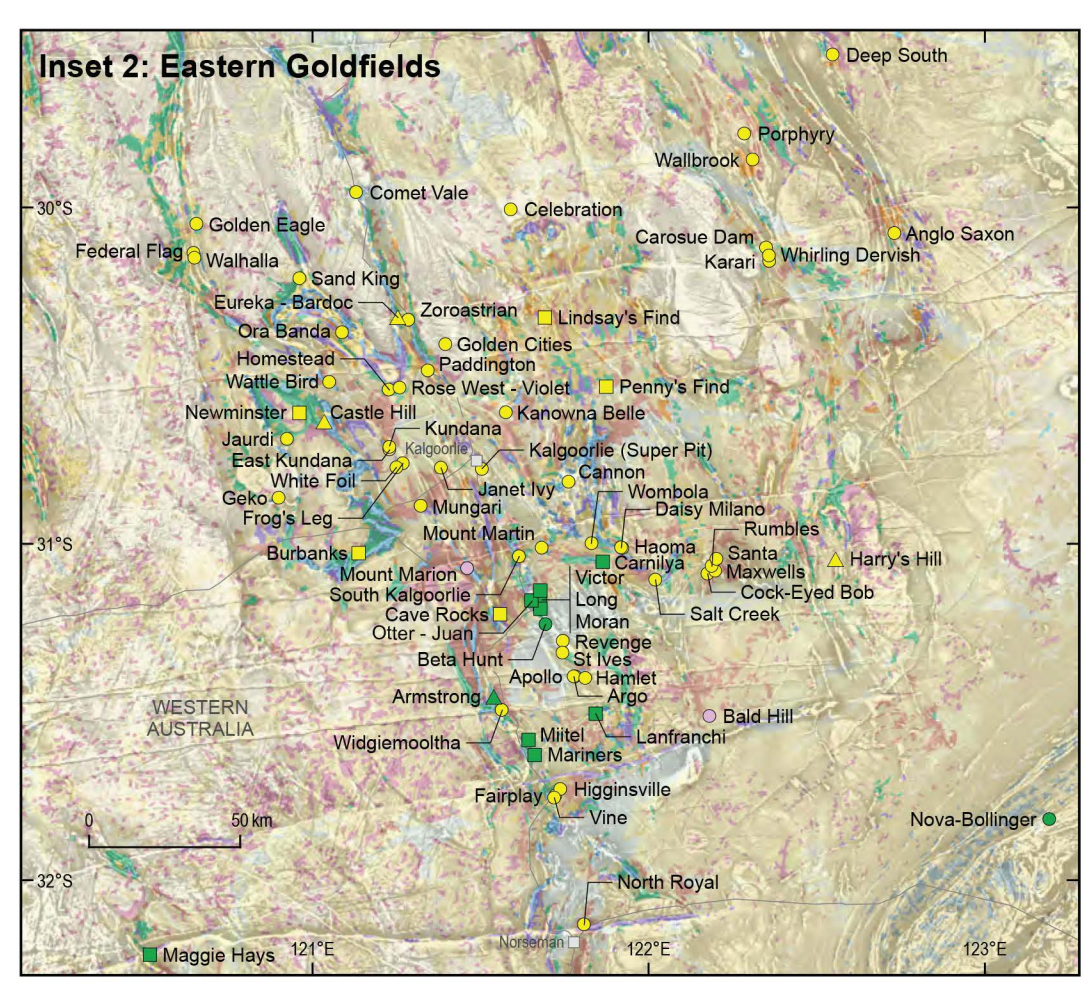
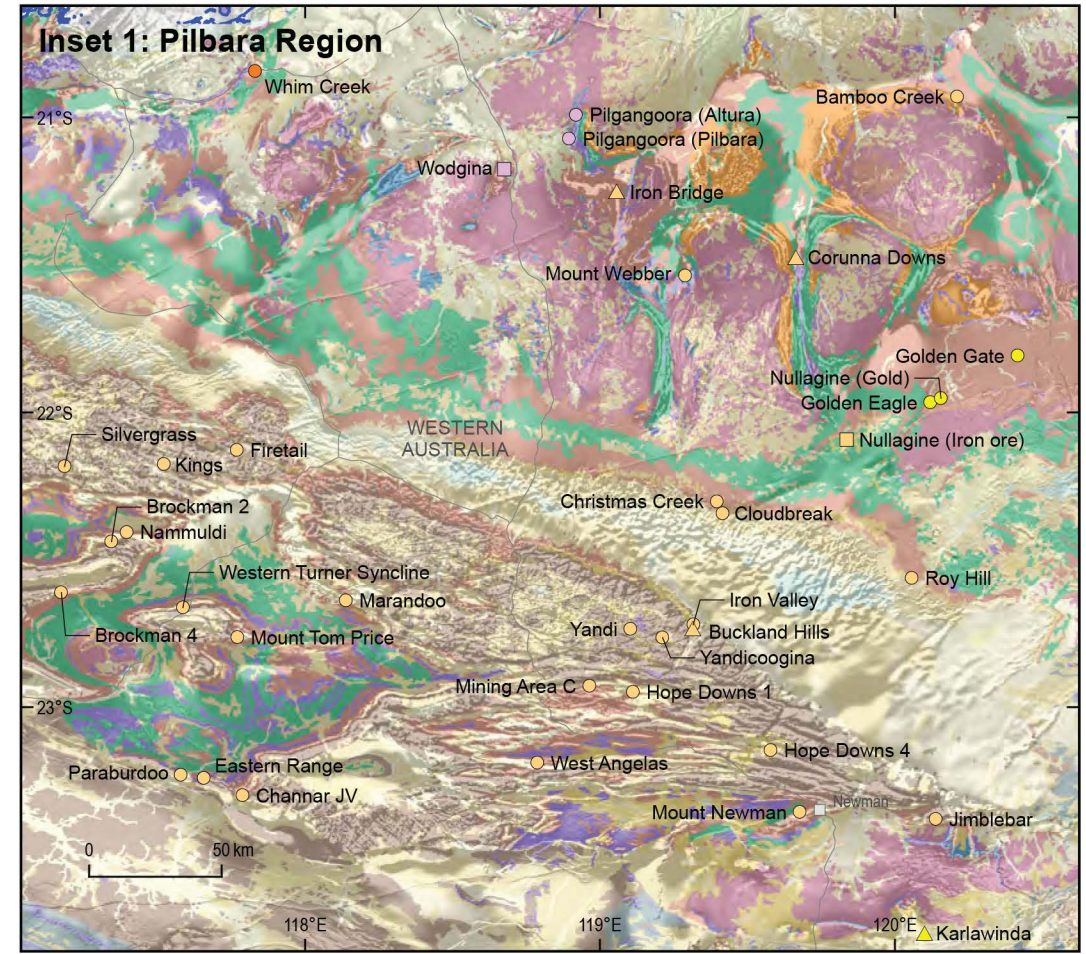
Additional information on operating mines, developing mines or mines under care and maintenance on this map is available from the Geoscience Portal: <http://portal.geoscience.gov.au/>

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- | QUATERNARY                                                 | CENOZOIC                                                 | SEDI-MENTARY, felsic volcanic and metamorphic rocks | FELSIC intrusive rocks (granites) |
|------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------|-----------------------------------|
| Channel and flood plain alluvium; gravel, sand, silt, clay | Alluvial deposits; typically incised by current drainage | Cret.                                               |                                   |
| Volcanic rocks, predominantly mafic                        | Volcanic rocks, predominantly mafic                      | Jur.                                                |                                   |
| Dunes, sand plain with dunes                               | Consolidated siliciclastic rocks                         | Tri.                                                |                                   |
| Estuarine, tidal delta deposits; coastal mud flats         | Mafic intrusive rocks                                    | Perm.                                               |                                   |
| Carbonate sediments                                        | Estuarine and delta deposits                             | Carbo.                                              |                                   |
| Colluvium and/or residual deposits; boulder, gravel, sand  | Felsic to intermediate volcanic rocks                    | Devo.                                               |                                   |
| Residual sediments and calcrete                            | Felsic intrusive rocks                                   | Silu.                                               |                                   |
| Quaternary clastic sediments, undivided                    | Carbonate sediments                                      | Ordo.                                               |                                   |
| Lake and swamp deposits; mud, silt, evaporites, limestone  | Calcrete                                                 | Camb.                                               |                                   |
| Volcanics, undivided                                       | Latent, ferruginous duricrust                            |                                                     |                                   |
- | SEDI-MENTARY, felsic volcanic and metamorphic rocks | FELSIC intrusive rocks (granites) |
|-----------------------------------------------------|-----------------------------------|
| Neoprot.                                            |                                   |
| Mesoprot.                                           |                                   |
| Paleoprot.                                          |                                   |
- | SEDI-MENTARY, felsic volcanic and metamorphic rocks | FELSIC intrusive rocks (granites) |
|-----------------------------------------------------|-----------------------------------|
| ARCHEAN                                             |                                   |
| MESOZOIC - ARCHEAN                                  |                                   |
| MESOZOIC - ARCHEAN                                  |                                   |