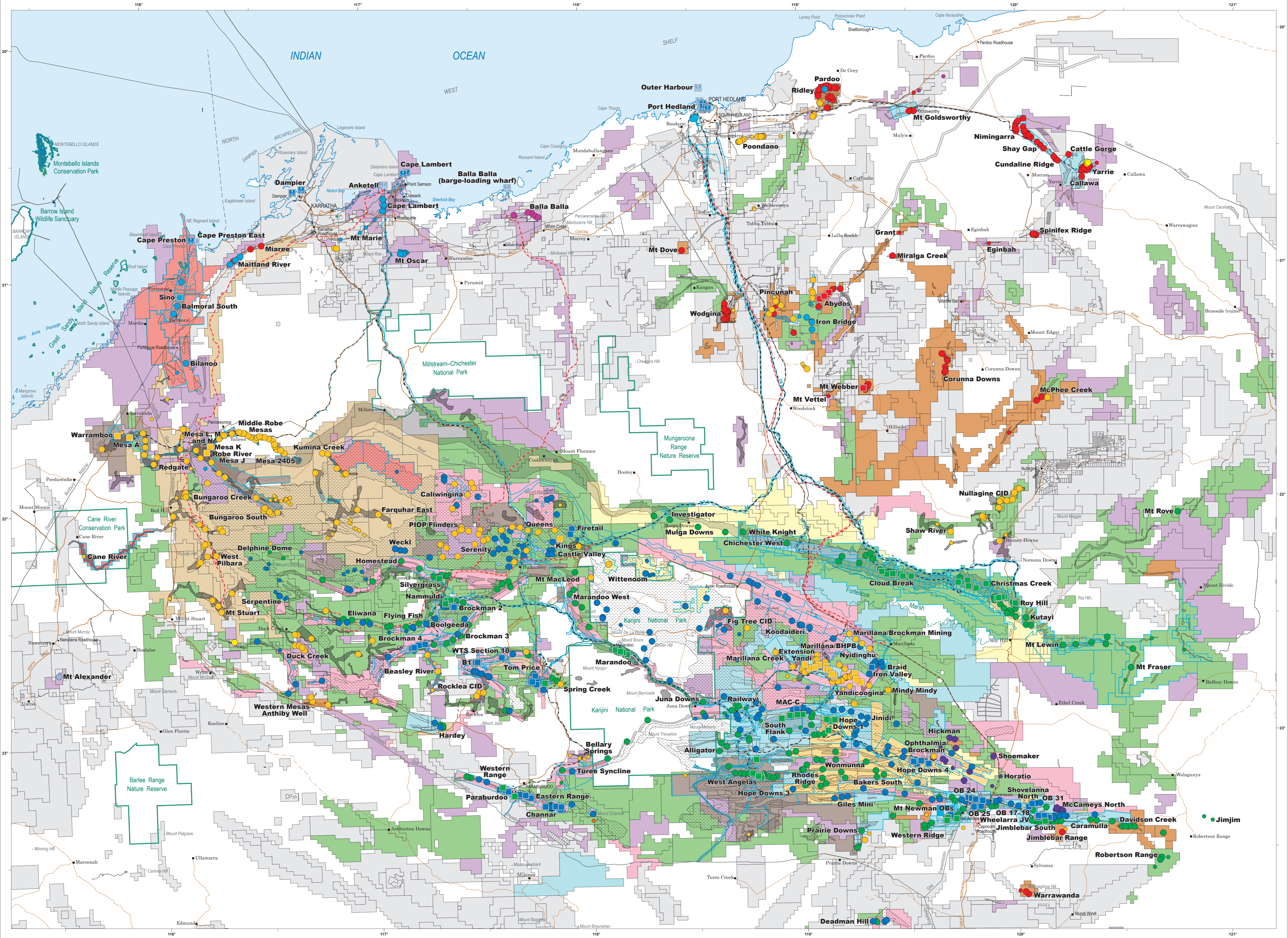


IRON ORE DEPOSITS OF THE PILBARA REGION — 2017

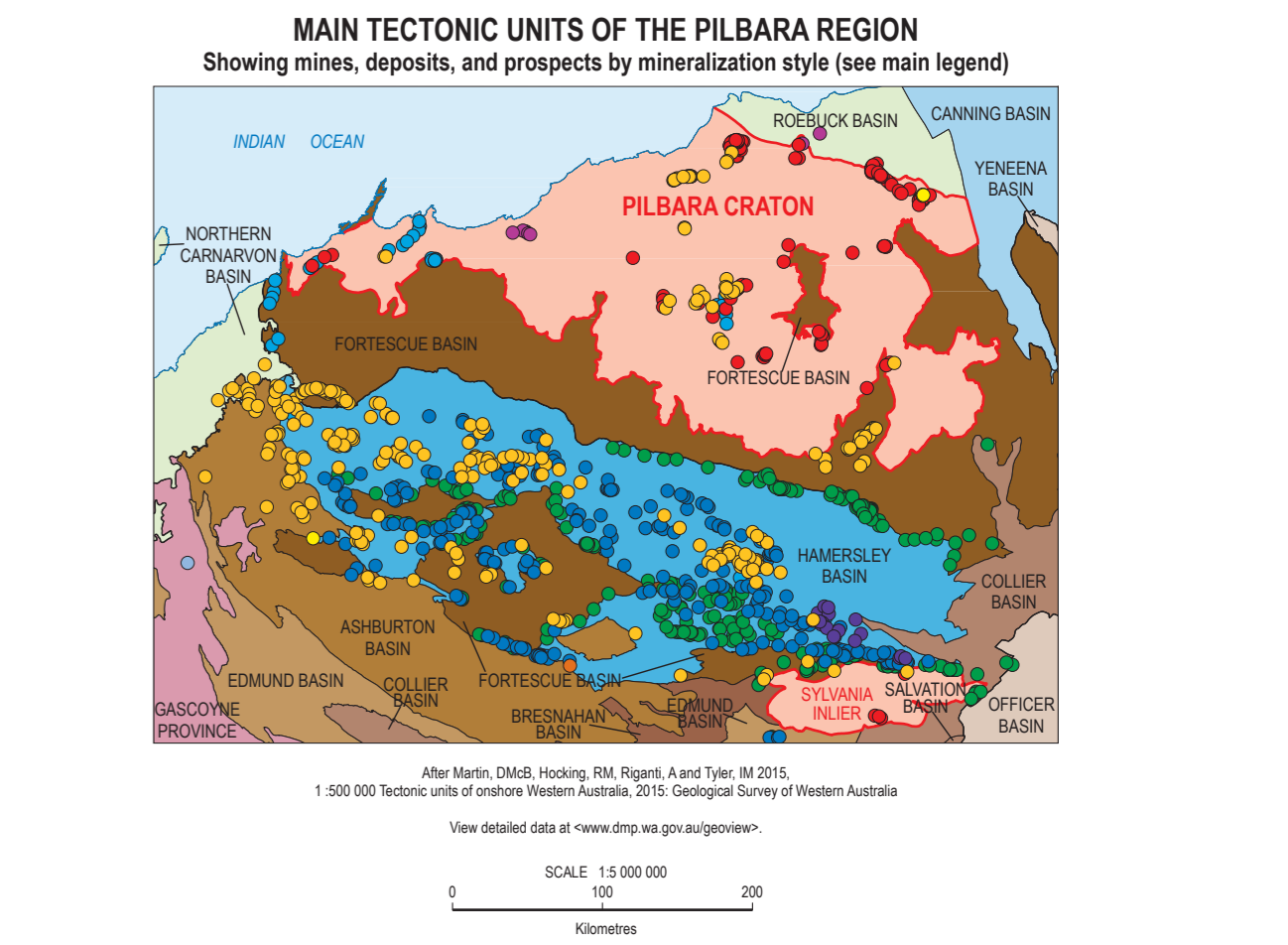


- TENEMENTS BY COMPANY GROUP**
- BHP Billiton plus joint ventures (JV) with CI Minerals (Tchu), Mitsui, POSCO, JFE Steel, and other Wheelabrator JV companies
 - Rio Tinto plus JV's with CMCC (SinoSteel) and Baosteel
 - Rio Tinto plus JV's with Hancock Prospecting Pty Ltd or Wright Prospecting Pty Ltd, or both
 - Hancock Prospecting Pty Ltd
 - Robe River Iron Associates (Rio Tinto, Mitsui, Nippon Steel, and Sumitomo)
 - Mineralogy group of companies
 - Fortescue Metals Group Ltd plus JV's with Consolidated Minerals, Cullen Resources Ltd, and Talsman Mining Ltd. Includes iron ore tenements of Fortescue Metals Group Ltd, including FMS Pilbara Pty Ltd, FMS Chichester Pty Ltd, and others
 - Atlas Iron Ltd plus JV's with companies such as Global Advanced Metals Pty Ltd, Mineral Resources Ltd, and De Grey Mining Ltd. Includes subsidiary companies Global Resources NL, Fortius Ltd, Warrack Resources Ltd, and others
 - API Management Pty Ltd (Agula Resources Ltd, AICI Holdings Australia Pty Ltd, Baosteel, and POSCO) with JV partners such as Red Hill Iron Ltd, Cullen Resources Pty Ltd, Hek Resources Ltd, and others
 - Other — iron ore and Mineralogy One Temporary Reserves. Some of these tenements may be joint ventured with the company groups above. Includes pending tenements awaiting outcomes of ballots.
 - Other — not known as being explored for iron ore

- SITE TYPE AND STAGE OF DEVELOPMENT**
(Symbol coloured by iron ore mineralization style)
- Mine — operating or under development
 - Mine — closed or proposed, or undeveloped deposit with a resource estimate
 - Undeveloped prospect without a resource estimate
- OB 24** Mine, deposit or prospect

- IRON ORE MINERALIZATION STYLES**
- Pisolithic and laminitic riverine paleochannel mineralization or channel iron deposits (CID) of the Cenozoic Robe Pisolite and Poondano Formation. Mineralization style is 'Ragwort' — alluvial to beach placer mineralization.
 - Hematitic conglomerates of the Proterozoic Mt. Edgar Formation, which formed in a near-shore environment (mined at Yarrle 10) and hematitic conglomerates of the Paleoproterozoic Mount McCraith Formation (Wyllie Group, Ashburton Basin). Mineralization style is 'Stratobanded sedimentary' — classic-hosted.
 - Magnetite-rich banded iron-formation or taconite, hosted by younger iron formations of the Wyloo Group of the Ashburton Basin. Mineralization style is 'Stratobanded sedimentary' — classic-hosted.
 - Supergene-enriched hematite and hematite-goethite mineralization hosted by banded iron-formation of the Boolegeeda Iron Formation or Woongarra Rhyolite (Hamersley Basin). Includes nearby scoria and detrital deposits derived from the Boolegeeda Iron Formation or Woongarra Rhyolite. Mineralization style is 'Sedimentary' — banded iron-formation (supergene enriched).
 - Supergene-enriched hematite and hematite-goethite mineralization hosted by banded iron-formation of the Weeli Weeli Formation (Hamersley Basin). Mineralization style is 'Sedimentary' — banded iron-formation (supergene enriched).
 - Supergene-enriched hematite and hematite-goethite mineralization hosted by banded iron-formation of the Brockman Iron Formation (Hamersley Basin). Includes nearby scoria and detrital deposits derived from the Brockman Iron Formation. Mineralization style is 'Sedimentary' — banded iron-formation (supergene enriched).
 - Supergene-enriched hematite and hematite-goethite mineralization hosted by banded iron-formation of the Marra Mamba Iron Formation (Hamersley Basin). Includes nearby scoria and detrital deposits derived from the Marra Mamba Iron Formation. Mineralization style is 'Sedimentary' — banded iron-formation (supergene enriched).
 - Supergene-enriched hematite and hematite-goethite mineralization hosted by banded iron-formation of the Archaean Pilbara Craton. Includes nearby scoria and detrital deposits. Mineralization style is 'Sedimentary' — banded iron-formation (supergene enriched).
 - Magnetite-rich banded iron-formation or taconite. May be hosted by iron formations of the Archaean granite-greenstone terranes, and the Brockman Iron Formation of the Neoproterozoic-Paleoproterozoic Hamersley Basin. Mineralization style is 'Sedimentary' — banded iron-formation (taconite).
 - Orthomagmatic layered mafic intrusives targeted for both iron (magnetite) and V-Ti (ilmenite)

- IRON ORE GEOLOGY**
- Channel iron deposits (CID) and pisolite (Robe Pisolite and Poondano Formation)
 - Brockman Iron Formation
 - Marra Mamba Iron Formation
 - Banded iron-formation (BIF) in granite-greenstone terrane

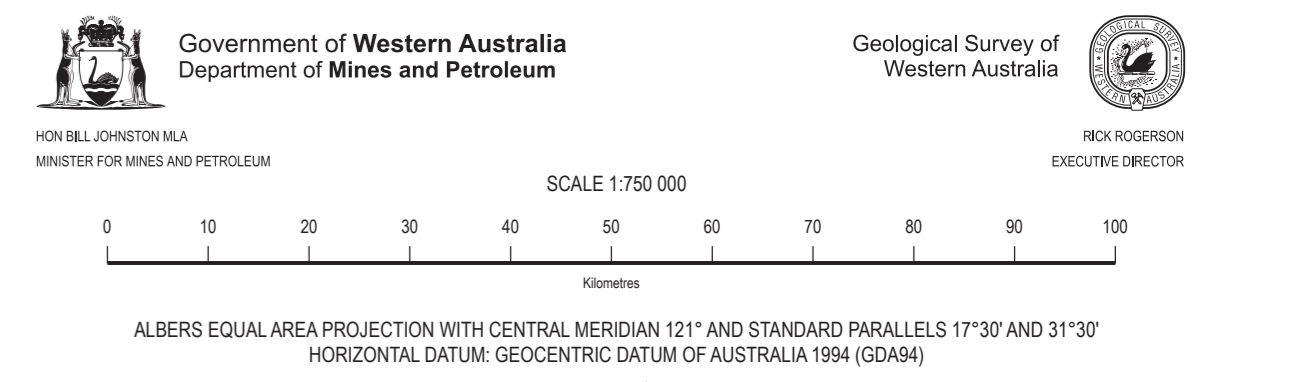
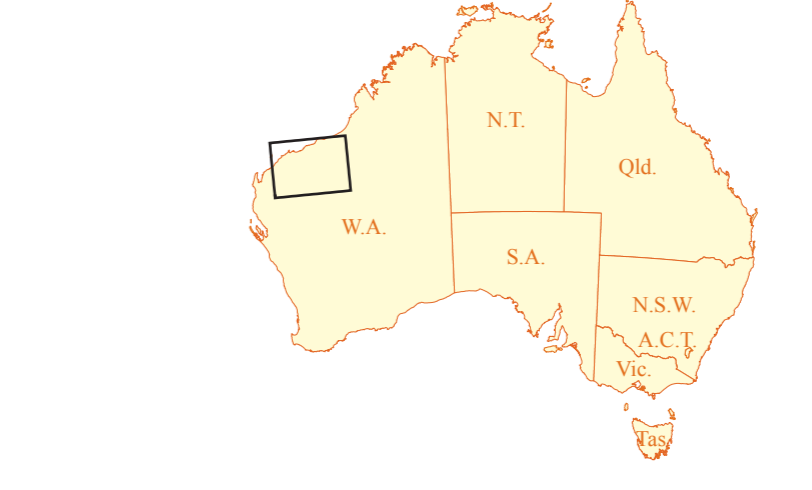


- Major road
Formed road
Track
Railway, operating
Railway, proposed
Gas pipeline, operating
Gas pipeline, proposed
Oil pipeline, operating
Iron ore port, operating or under development
Iron ore port, proposed
- Townsite
population 10 000 – 15 000
1000 – 10 000
less than 1000
- Homestead
Locality
- Established conservation estate (national park, nature reserve, or conservation park)
Fortescue Marshes — Australian Nature Conservation Agency Wetlands (full extent not shown)
Iron Ore State Agreement Act external boundary
- KARRATHA
● NEWMAN
● Nulagine
● Mulga Downs
● Auski Roadhouse

Theme	Date	Currency	DATA SOURCES	Organization
Tectonic units	2015		Geological Survey of Western Australia, Department of Mines and Petroleum	
Iron ore geology	2017		Geological Survey of Western Australia, Department of Mines and Petroleum	
Mines and deposits	MAR 2017		Geological Survey of Western Australia, Department of Mines and Petroleum	
Mining tenements	MAR 2017		Mineral Titles Division, Department of Mines and Petroleum	
Copies of this map, and a related digital package, are available from:	MAR 2017		Landgate, Department of Mines and Petroleum	
Established conservation estate	AUG 2016		Department of Parks and Wildlife	
Topography	2017		Landgate	
Coastline	2017		Geoscience Australia (Commonwealth)	
Rail	2017		Landgate	

Compiled by RW Cooper 2017
Information on mines, deposits, prospects, and processing plants was extracted from the DMP Mines and Mineral Deposits (MINEDEX) database, viewed March 2017. <www.dmp.wa.gov.au/mineindex>
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Cooper, RW 2017. Iron ore deposits of the Pilbara region — 2017 (1:750 000 scale).
Geological Survey of Western Australia.

Tenements are colour coded by company association or general groups (designated 'Other'). Sources used to determine that a tenement is targeting iron ore (and/or other minerals) include iron ore State Agreement Acts, authorisation to explore for iron ore granted or applied for under Section 111 of the Mining Act 1978, tenement record files, and company public announcements. This includes tenements at the application stage. Inclusion of such tenements here does not imply that the tenement applications will be granted or that iron ore authorization under Section 111 will be granted. Other tenements (shown in grey) may also be prospective for iron ore. Colour-coded iron ore tenements may also be prospective for other minerals.
Miscellaneous Licences have been plotted, but not given their specific company colour coding; the colour coding of the underlying tenements are shown instead.
The tenement layer consists of many tenements (both granted and pending applications) that overlap in time and space with complex relationships. However, the tenements are depicted as if they form a 2D layer.
Care should be taken when interpreting the colour-coded tenements and, where necessary, further details should be obtained from the companion digital product or from DMP's online mining tenement database, TENDRAPH.



IRON ORE DEPOSITS OF THE PILBARA REGION — 2017