

# GRAPHITE

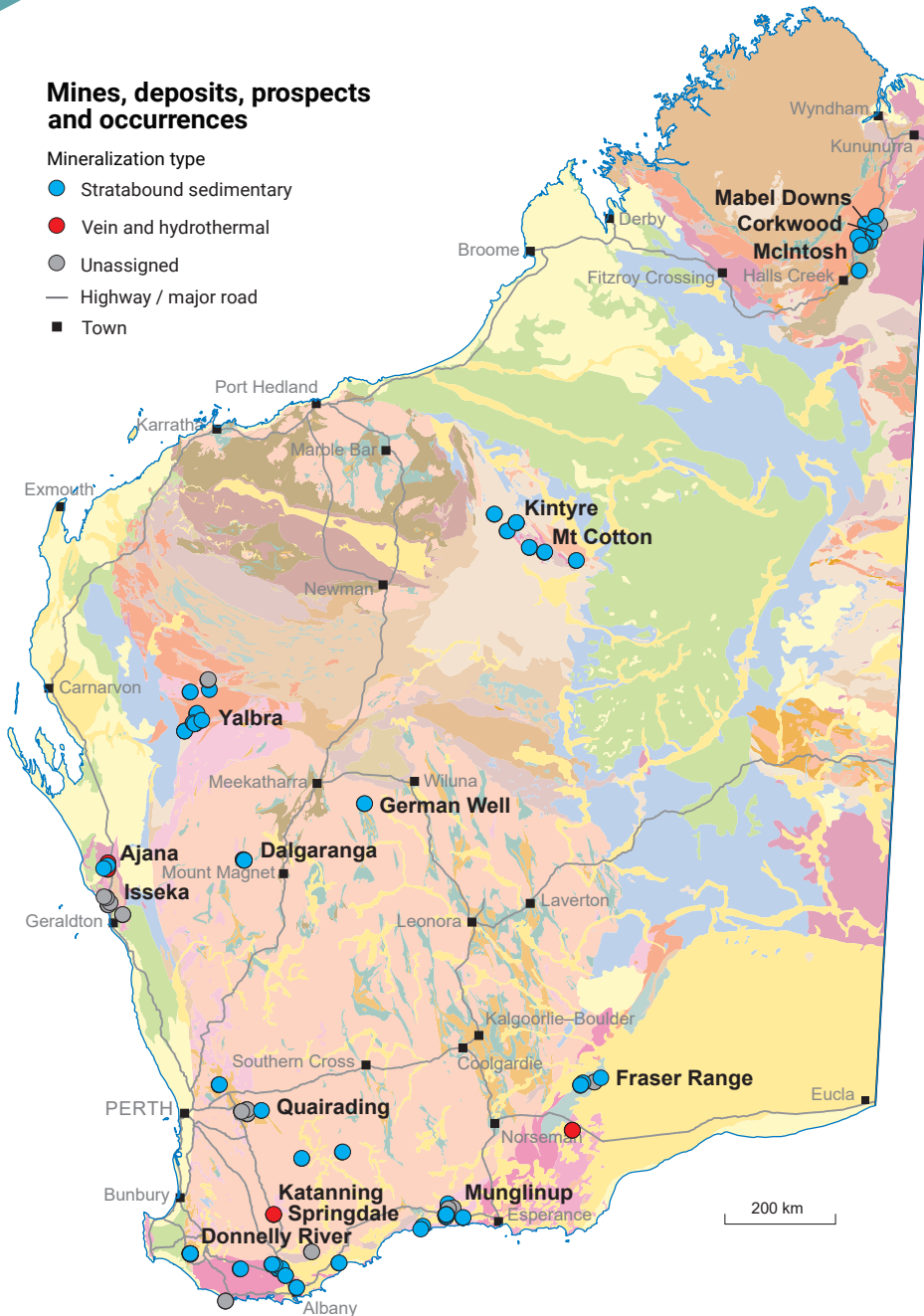
## INVESTMENT OPPORTUNITIES

WORLD-CLASS RESOURCE PROVINCE | SECURE INVESTMENT LOCATION WORLD-LEADING GEOSCIENTIFIC DATA | GLOBAL MINING SERVICES INDUSTRY

### Mines, deposits, prospects and occurrences

#### Mineralization type

- Stratabound sedimentary
- Vein and hydrothermal
- Unassigned
- Highway / major road
- Town



### Western Australia has resources over 3.6 Mt of contained total graphitic carbon

- Recorded historic production is 219 t of graphite, mainly from Munglinup
- The majority of occurrences are in Archean to Mesoproterozoic graphitic schists or gneisses (representing metamorphosed carbonaceous sedimentary rocks) in mostly flake and 'amorphous' varieties
- There are sporadic vein-hosted occurrences, associated with Proterozoic pegmatites and paragneisses (e.g. Ajana)

#### Four deposits have defined resources

- Munglinup
- McIntosh
- Springdale
- Yalbra
- The Munglinup Project has recently completed a definitive feasibility study to produce 52 ktpa of graphite concentrate over a 14-year mine life. Probable ore reserves for the project are 4.24 million tonnes at 12.8% total graphite content. The graphite concentrate product is to be exported from the port of Fremantle

219 t  
Historical  
Production



(2018 calendar year)

\$268 m\*  
Investment  
projects



\* Includes projects planned, possible, committed or under construction as of September 2019

5.0%  
Royalty  
rate



## Graphite projects with resources

Resources estimated according to JORC

Project	Status	Owner	Ore TGC (Mt)	Av. grade TGC (%)	Contained TGC (kt)
Munglinup	Feasibility study	Mineral Commodities Ltd / Gold Terrace Pty Ltd	7.99	12.2	971.0
Springdale	Exploration	Comet Resources Ltd	15.6	6.0	936.0
Yalbra	Exploration	Buxton Resources Ltd	4.0	16.2	650.4
McIntosh	Feasibility study	Hexagon Resources Ltd	23.8	4.5	1059.0
			43.4		3616.4



Stratabound sedimentary

Abbreviation: TGC total graphitic carbon

## Graphite prospectivity of Western Australia

- Flake and amorphous graphite in regionally metamorphosed metasedimentary rocks of Archean and Proterozoic terranes (e.g. the majority of Western Australia's graphite deposits, including Yalbra, McIntosh, and Munglinup)
- Flake graphite deposits hosted in veins associated with pegmatites and paragneisses in Proterozoic terranes (e.g. Ajana region, Northampton Inlier)
- Disseminated flake graphite hosted in weathered pegmatites (e.g. Katanning)

## Properties and uses

- Graphite is a naturally occurring crystalline form of carbon
- It does not react with other materials and is an excellent conductor of electricity and heat
- Applications and uses include pencils, lubricants, brake lining and clutches, lithium-ion batteries, fuel cells, vanadium redox-flow batteries, and in the aerospace industry

### For more information



Geological Survey of  
Western Australia

[www.dmirs.wa.gov.au/gswa](http://www.dmirs.wa.gov.au/gswa)



[www.dmirs.wa.gov.au/minedex](http://www.dmirs.wa.gov.au/minedex)



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### Contact us

Resource Investment Information  
Geological Survey and Resource Strategy Division  
[minerals.investors@dmirs.wa.gov.au](mailto:minerals.investors@dmirs.wa.gov.au)  
Tel: +61 8 9222 3676



Government of **Western Australia**  
Department of **Mines, Industry Regulation and Safety**

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