

46 000 years old aboriginal sites destroyed, Australia

Sentinel-1 CSAR IW acquired on 08 May 2015 from 21:31:53 to 21:32:18 UTC

Sentinel-2 MSI acquired on 22 May 2016 at 02:13:52 UTC

Sentinel-2 MSI acquired on 21 May 2020 at 02:13:51 UTC

Sentinel-1 CSAR IW acquired on 23 May 2020 from 21:31:34 to 21:31:59 UTC

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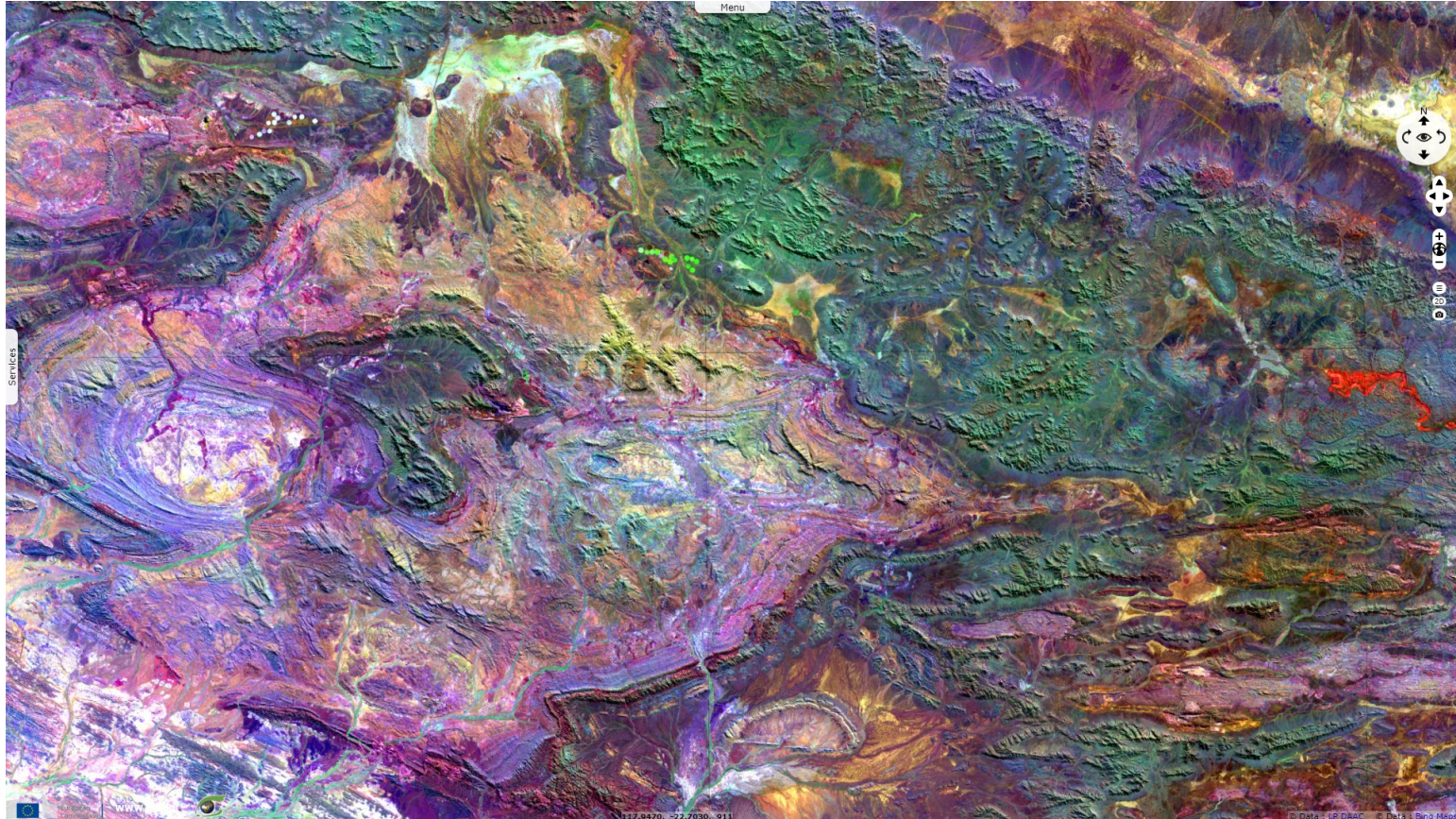
Keyword(s): Natural resources, mine, geology, infrastructure, railway, UNESCO World Heritage, Australia



[2D Layerstack](#)

Fig. 1 - S2 (21.05.2020) - Ore-rich region of Pilbara, Western Australia.

[2D view](#)



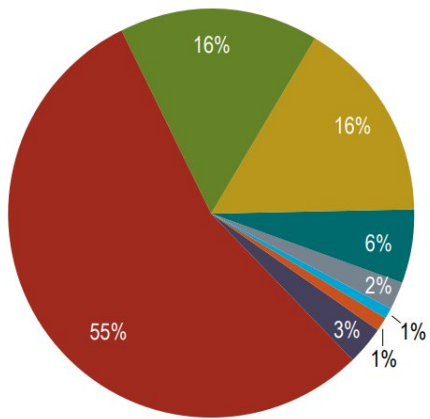
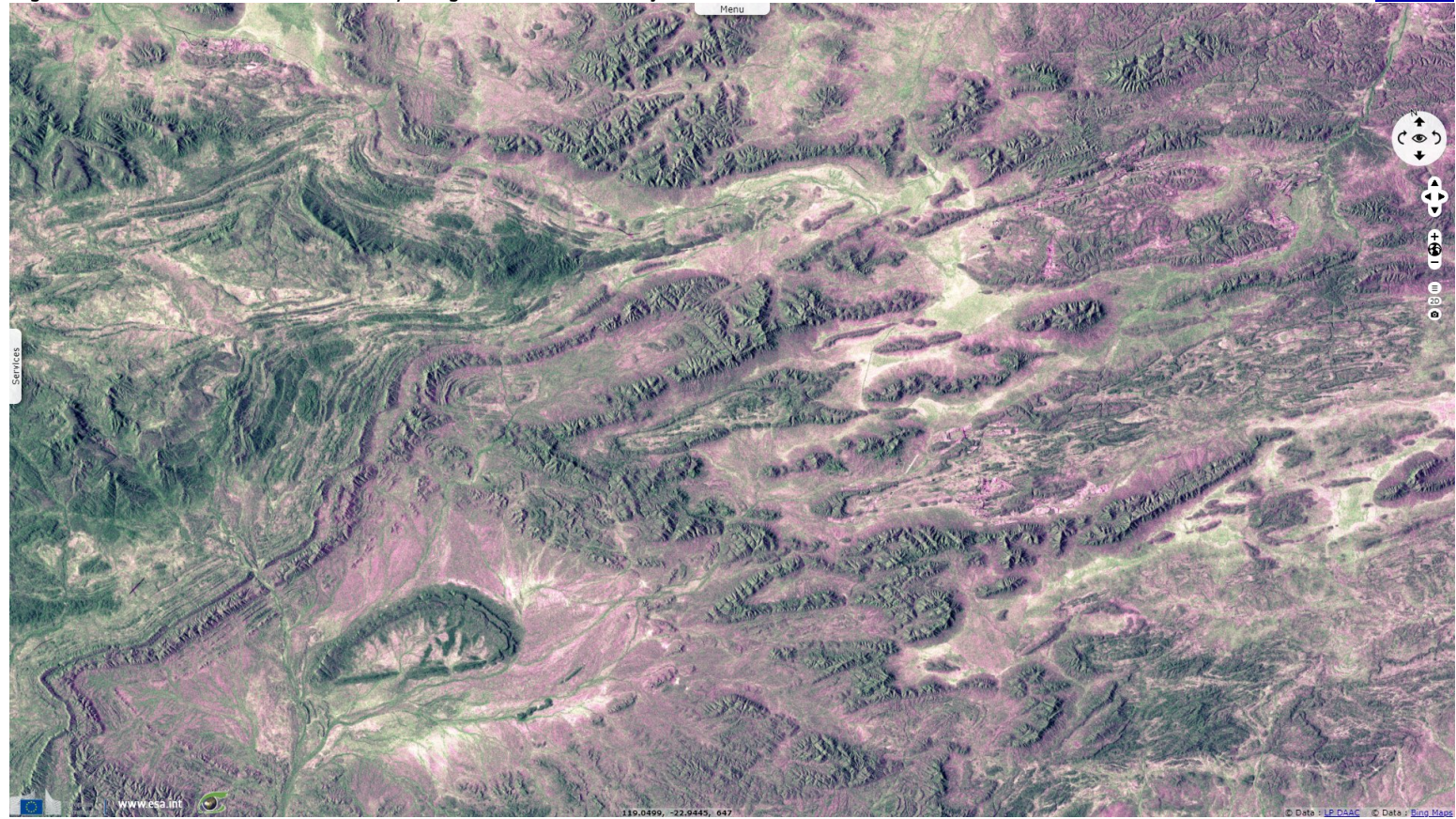
The economic and demographic development of Western Australia state is largely due to its natural resources in ore, oil and gas. The state's major export commodities include iron-ore, alumina, crude oil and liquefied natural gas (LNG), nickel, gold, ammonia, wheat, wool, and live sheep and cattle. In global terms, Western Australia is a significant producer of a wide range of resource commodities. Australia is the world's largest producer of both bauxite and alumina, with half of national production coming from Western Australia.

Mining in Western Australia, together with the petroleum industry in the state, accounted for 94% of the State's and 41% of Australia's income from total merchandise exports in 2018–19. The state of Western Australia hosted 127 principal mining projects and hundreds of smaller quarries and mines. The principal projects produced more than 99 per cent of the industry's total sales value.

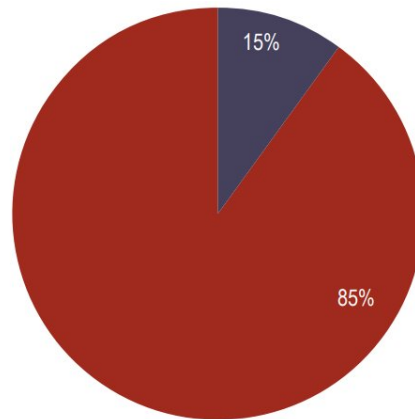
In 2018–19, Western Australia's extraction industry, had a value of \$145 billion (of which 77% was created by the mining industry), up from \$43 billion in 2005–06. Iron ore was, in 2018–19, the most important commodity in Western Australia, accounting for 54 percent of sales in the state's mineral and petroleum industry. The oil and gas sector followed in second place with 26% of the overall value. The third most important commodity in the state was gold, with 8 percent of the overall value. Alumina and bauxite sales accounted for 6 per cent of total sales.

Fig. 2 - S1 (23.05.2020) - The Hamersley Range counts several major mines.

3D view



Iron Ore	55%
Petroleum	16%
Gold	16%
Alumina	6%
Base Metals	2%
Nickel	1%
Mineral Sands	1%
Other	3%

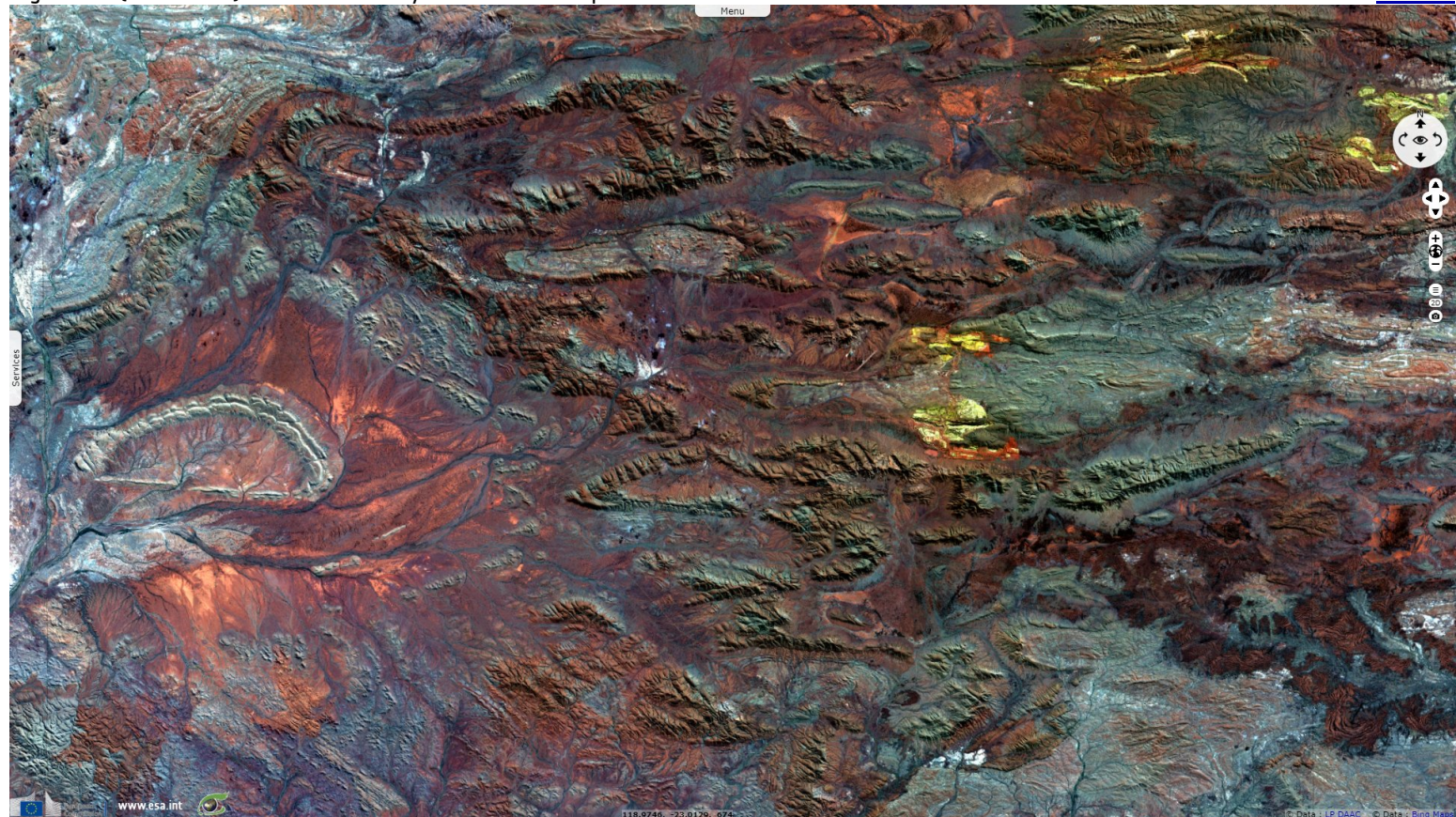


Mineral and Petroleum	85%
Other WA Exports	15%

Left: WA mineral and petroleum exports 2017–18: \$109.6 Billion - Source: [DMIRS and ABS](#)
 Right: WA mineral and petroleum exports 2017–18: \$109.6 Billion - Source: [DMIRS and ABS](#)

Fig. 3 - S2 (22.05.2016) - Mines show in yellow on this composite.

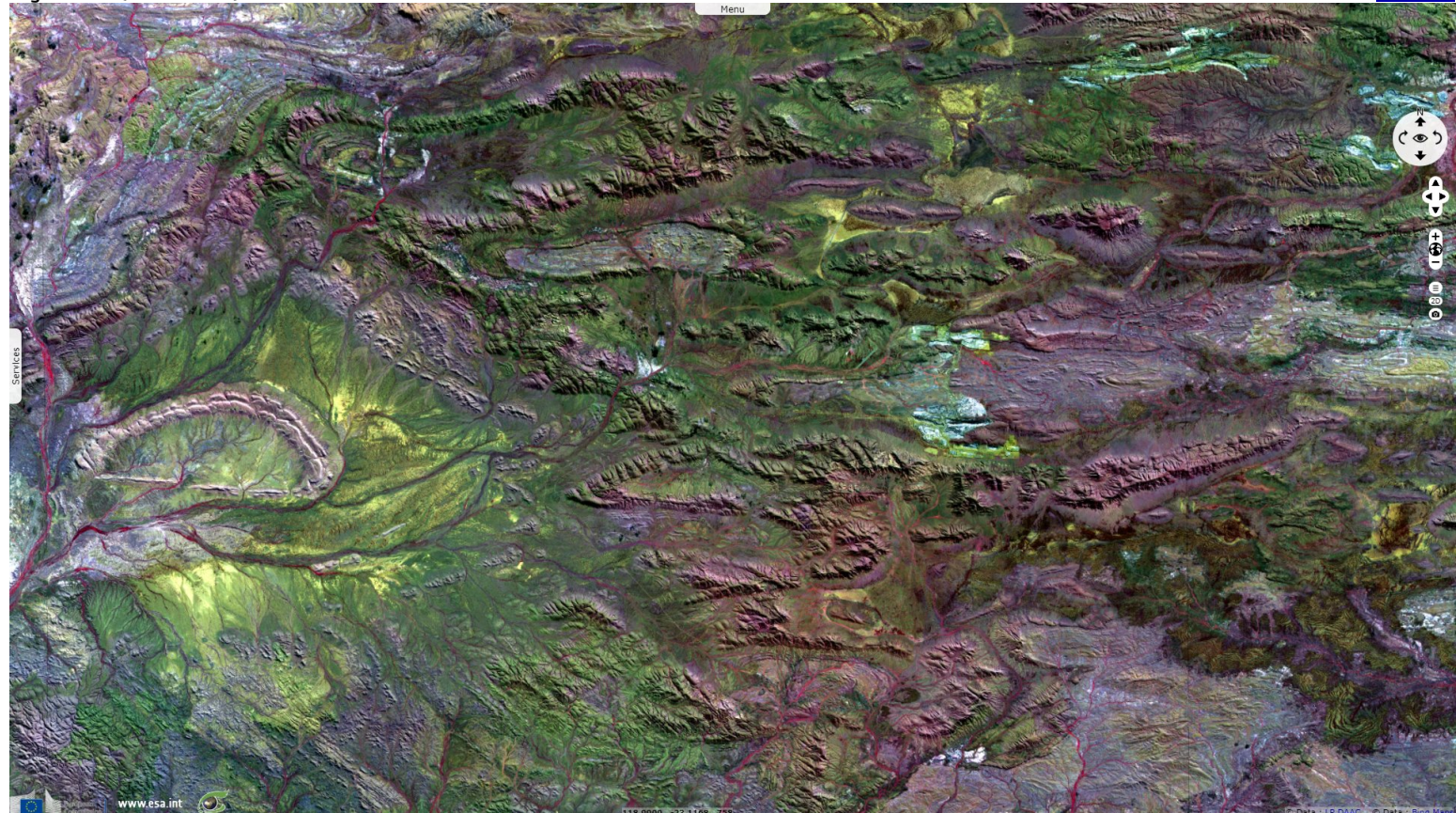
[2D view](#)



Calla Wahlquist published several articles on the Guardian relative to these mines since they often compete for space with aboriginal sites. Recently a 46000-year-old Aboriginal site has been destroyed to extend a mine. On 5 Jun 2020, she [wrote](#): Chris Salisbury, "the head of Rio Tinto's iron ore division said he has 'taken accountability' for the destruction of a 46,000-year-old Aboriginal heritage site but refused to give a direct answer when asked if the company knew traditional owners did not want the rock shelter destroyed, saying: 'clearly, there was a misunderstanding.'" "We are sorry for the distress we have caused," "We pay our respects to the Puutu Kuntjirra and Pinikura People (PKKP)," he said."

Fig. 4 - S2 (22.05.2016)

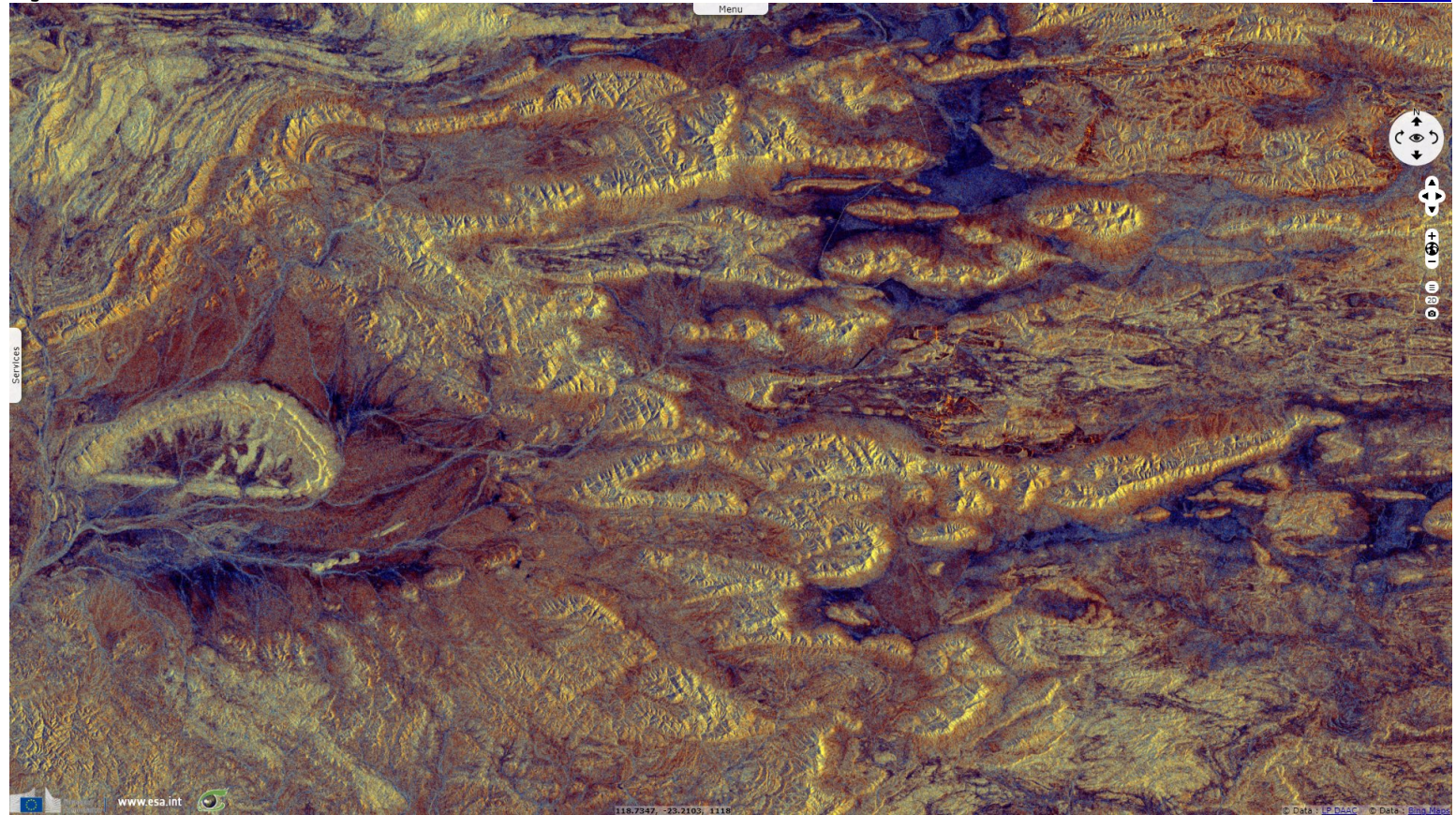
[2D view](#)



All this happened legally, after "Rio Tinto received ministerial consent under section 18 of that legislation to destroy two rock shelters in Juukan Gorge. Consent was granted by the then minister for Aboriginal affairs in Western Australia in 2013, one year before an archeological survey, approved by Rio, found the site was of high archeological significance and showed signs of human occupation dating back 46,000 years, including throughout the last ice age. It's the only known site in inland Western Australia to show that continued occupation." "The 2014 survey was a salvage mission that gathered more than 7,000 artefacts, including a plaited belt made from human hair that DNA testing revealed belonged to the direct ancestors of PKKP alive today, and tools and grinding stones which showed those tools had been in use far earlier than archeologists previously believed. The artefacts remain in Rio Tinto's possession."

Fig. 5 - S1 (23.05.2020)

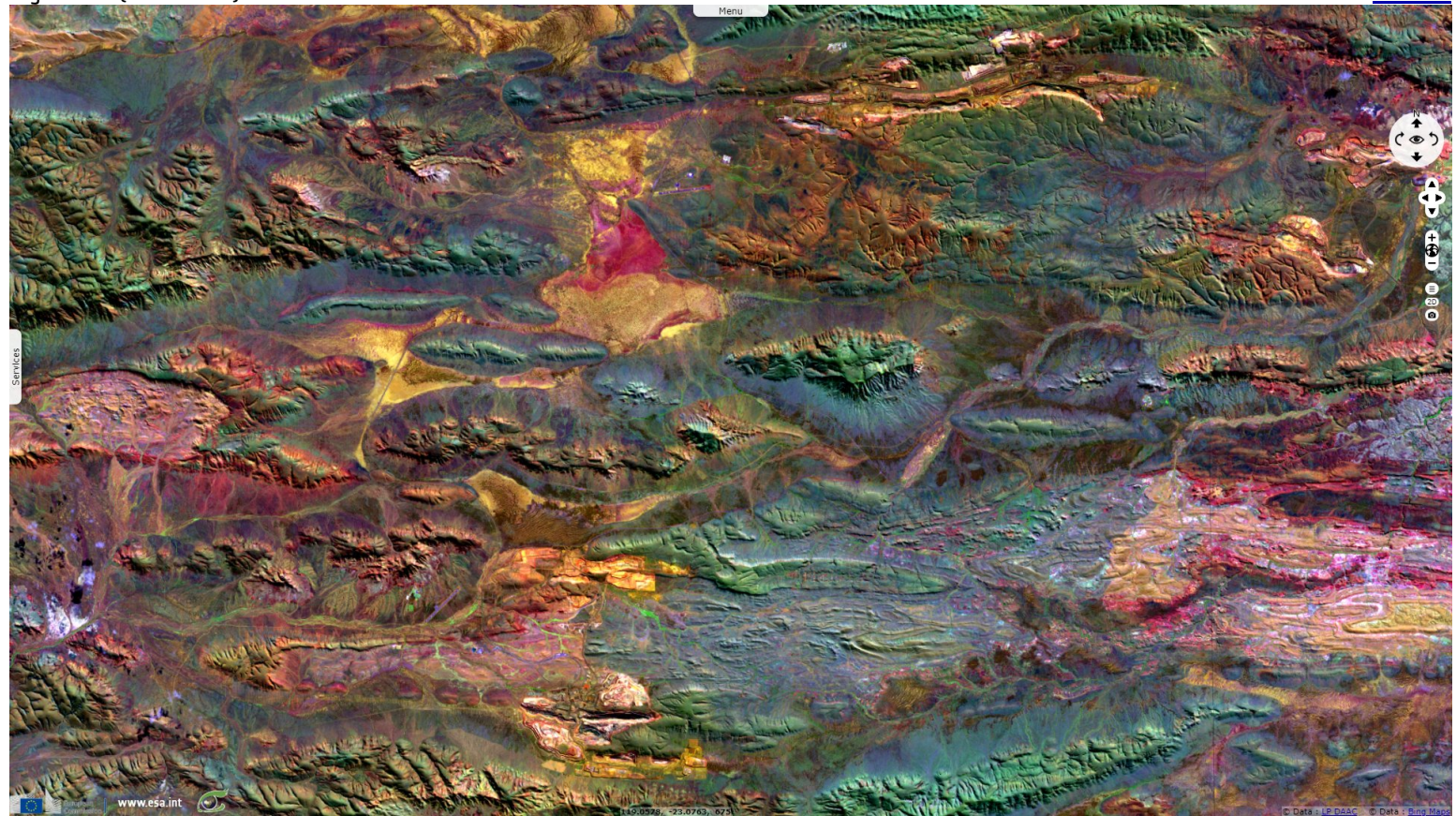
2D view



In her article published previous on 26 May 2020, she [reminds](#) one of the causes: "the outdated Aboriginal Heritage Act does not allow for a consent to be renegotiated on the basis of new information. So despite regular meetings with Rio Tinto, the Puutu Kuntj Kurrma and Pinikura (PKKP) Aboriginal Corporation was unable to stop the blast from going ahead. 'It's one of the most sacred sites in the Pilbara region ... we wanted to have that area protected,' PKKP director Burchell Hayes told Guardian Australia."

Fig. 6 - S2 (22.05.2016) - South Flank area in 2016.

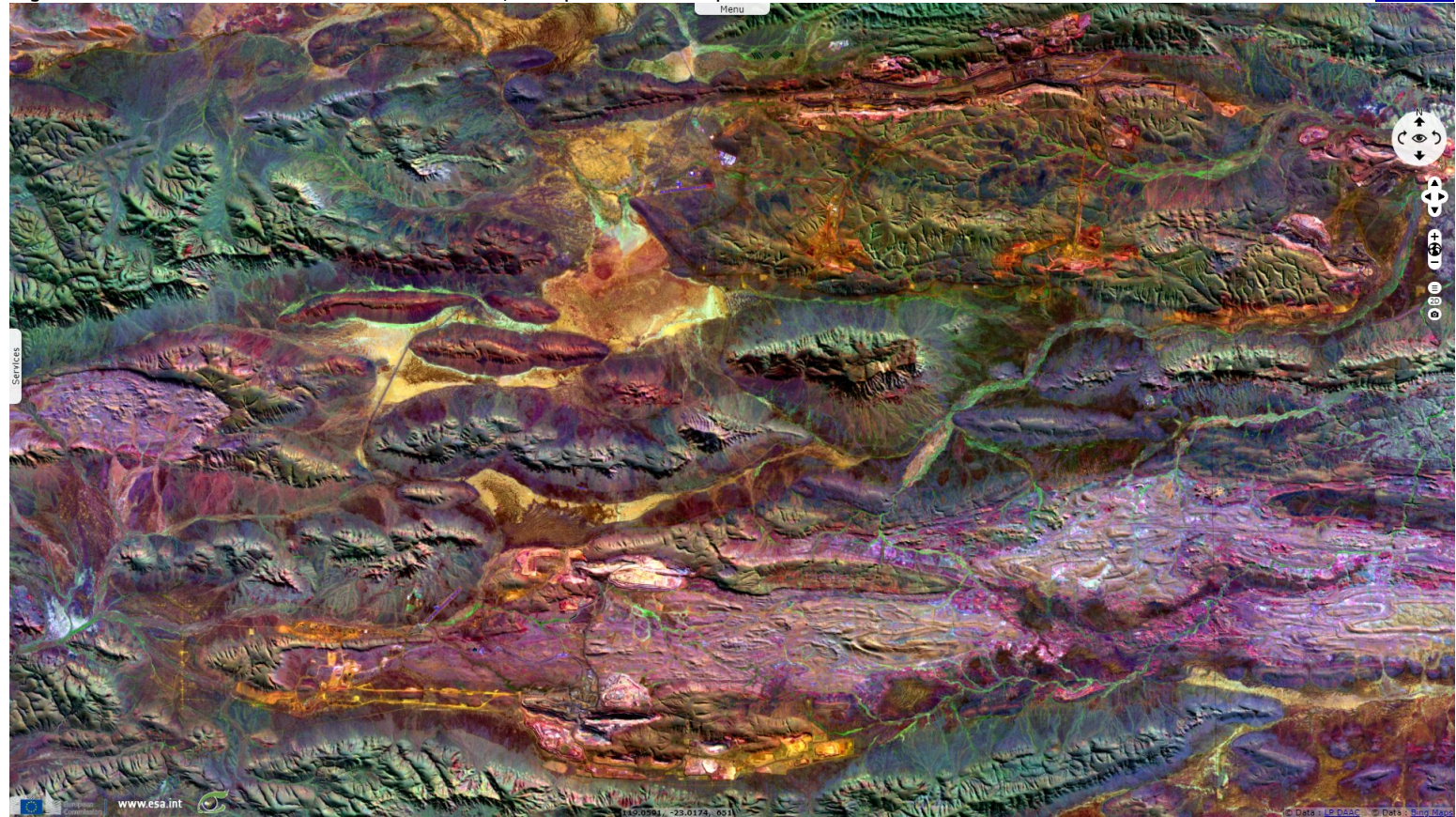
2D view



In the neighbouring South Flank project, BHP [states](#): "South Flank will be one of the world's largest iron ore operations integrating the latest advances in autonomous-ready fleets, digital connectivity and modular design."

Fig. 7 - S2 (21.05.2020) - South Flank area in 2020, multiple mine development are visible.

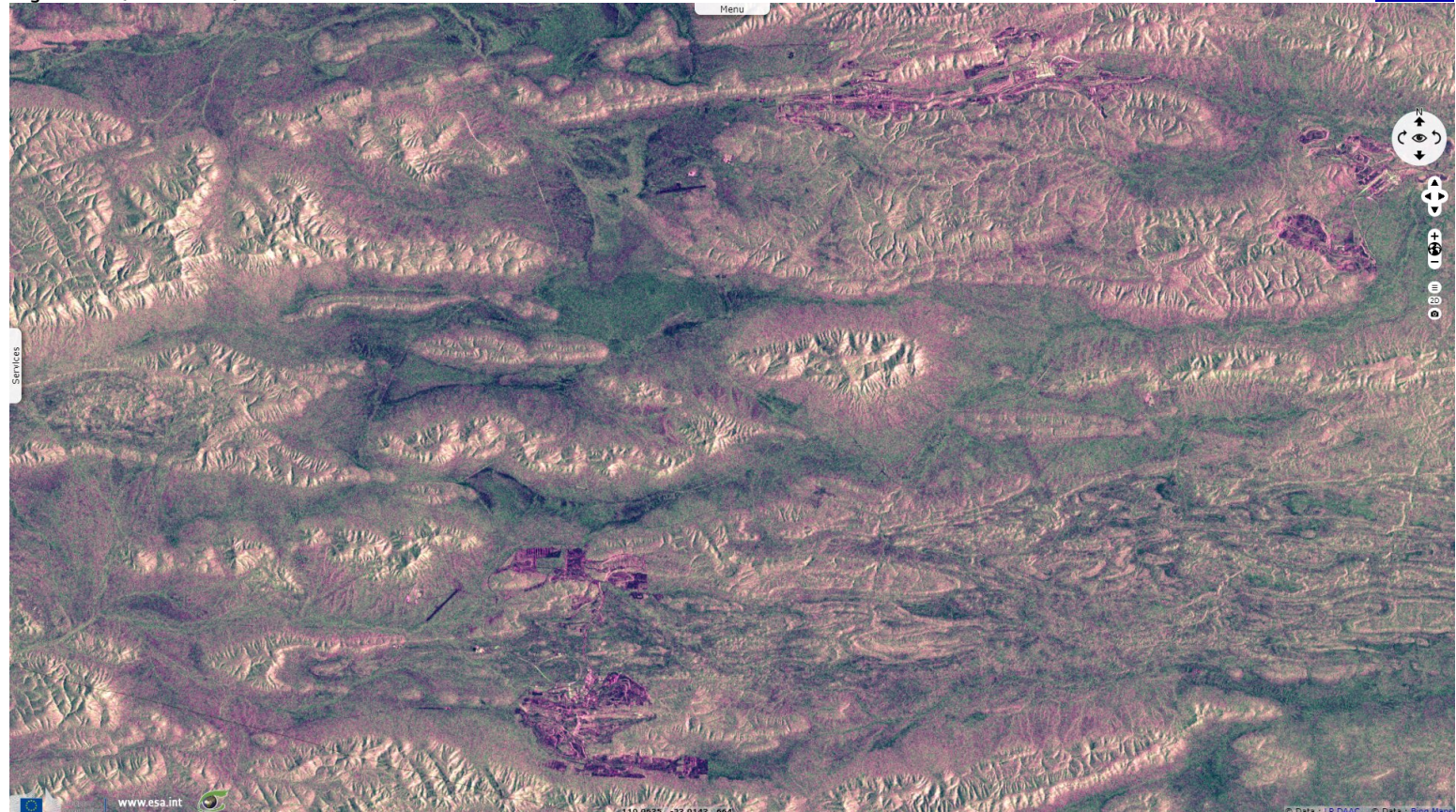
[2D view](#)



After the publicity of the destruction caused by Rio Tinto, BHP has had to revise its position, [reported](#) Eliza Borrello on 11 June 2020 for ABC Australia: "BHP had planned to destroy up to 40 sites sacred to the Banjima people to make way for its \$4.5 billion South Flank mine, near Newman in WA's Pilbara. The company was granted approval to do so by WA Aboriginal Affairs Minister Ben Wyatt on May 29. But BHP today released a statement from a spokeswoman saying it was putting its plans on ice. 'We will not disturb the sites identified without further extensive consultation with the Banjima people,' the statement said."

Fig. 8 - S1 (08.05.2015) - Radar view South Flank area in 2015.

[2D view](#)



The Australian government may now be more conscious of the problem as they try to ensure long term protection of the most important sites, but a choice will have to be made between sites conservation and economic development, [says](#) Calla Wahlquist: "The federal government on Friday lodged a submission for the Murujuga cultural landscape on Western Australia's Burrup Peninsula to be included on Australia's world heritage tentative list, the first formal step toward achieving global recognition for the 50,000-year-old gallery of more than one million petroglyphs. Damage caused by industrial development could undermine efforts to achieve recognition for WA's Murujuga cultural landscape, the country's largest collection of rock art."

Fig. 9 - S1 (23.05.2020) - Radar view South Flank area in 2020.

[2D view](#)

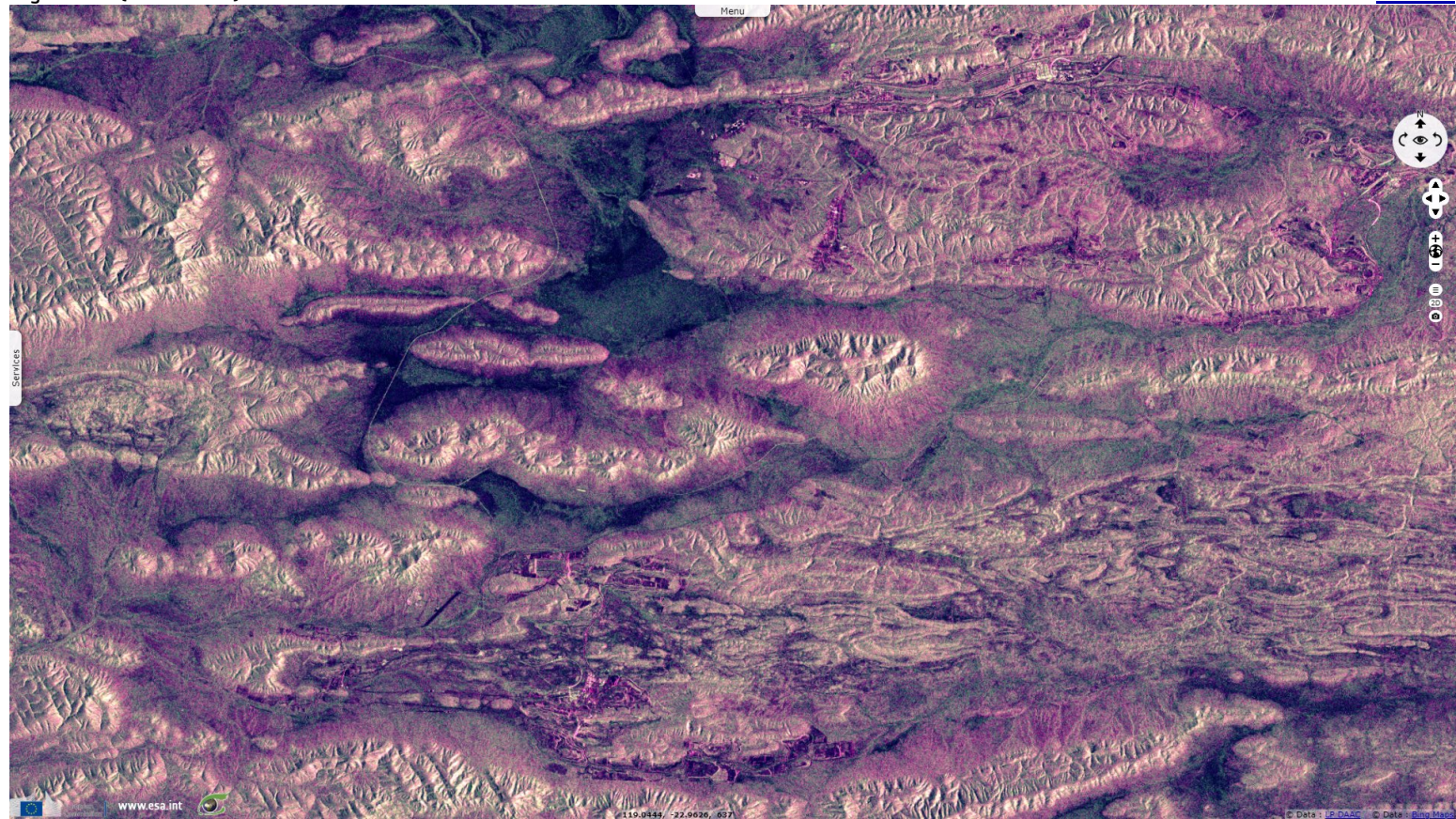


Fig. 10 - S2 (22.05.2016) - A nearby location, north-west of South Flank.

[2D view](#)

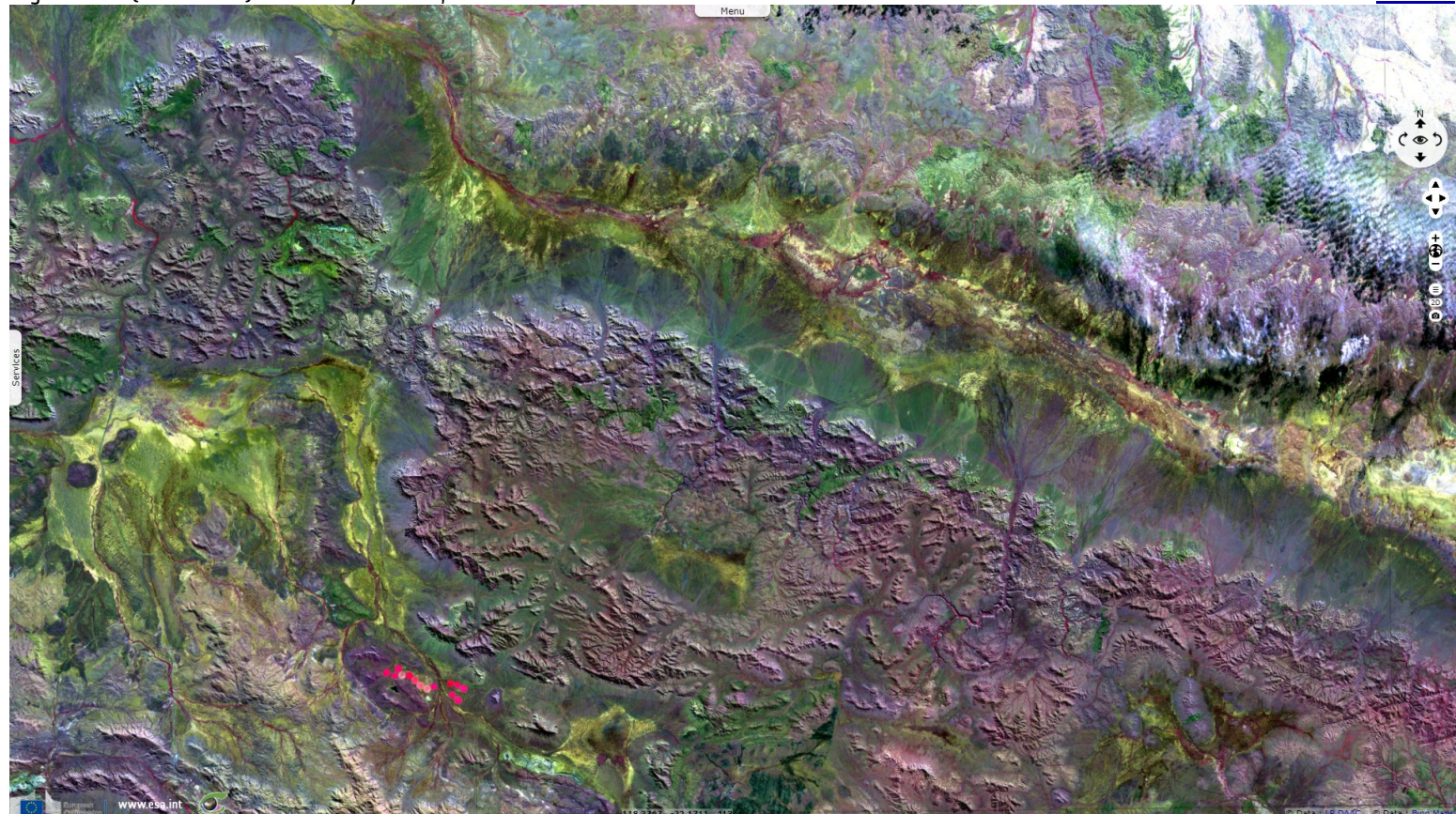
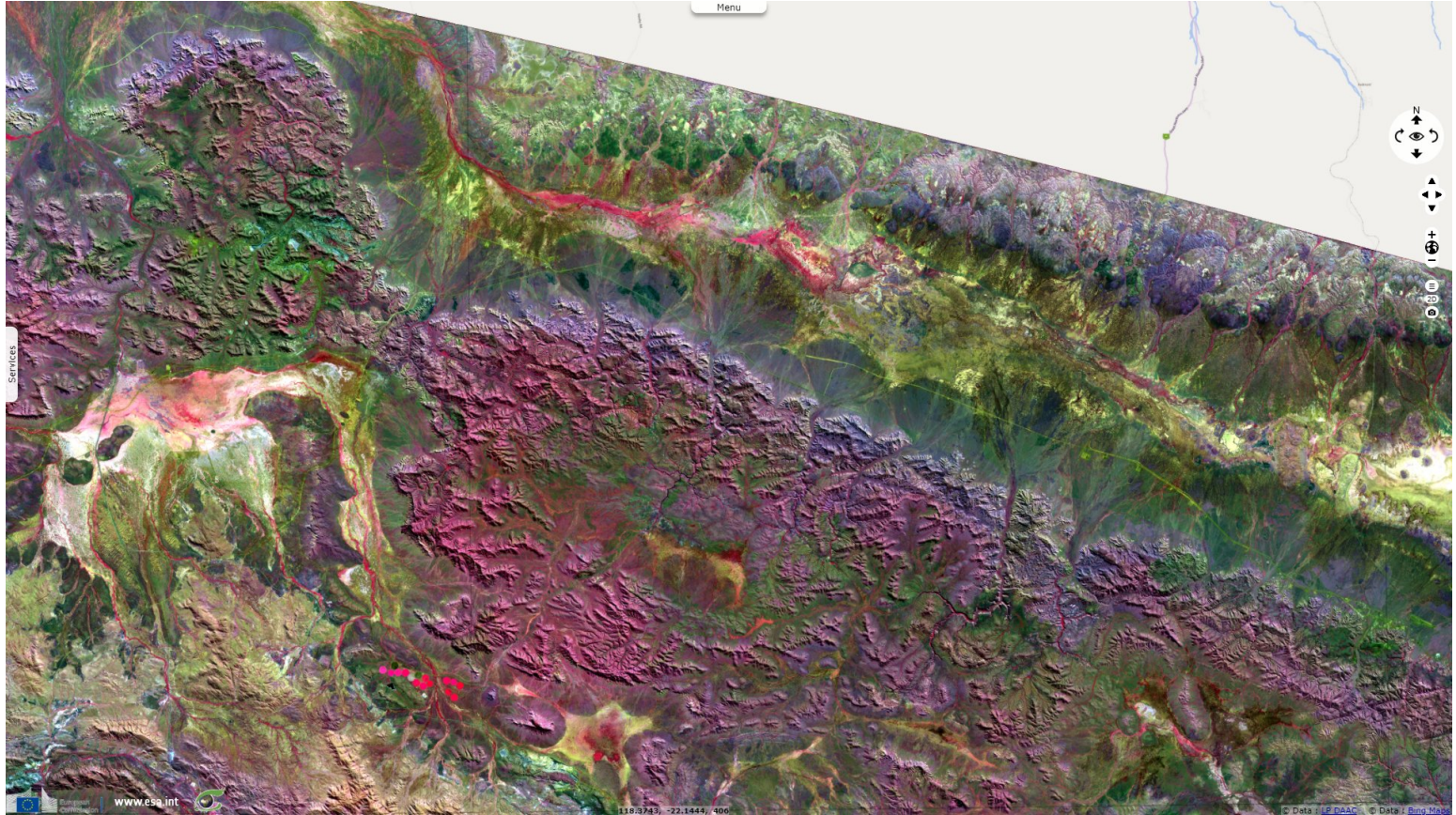
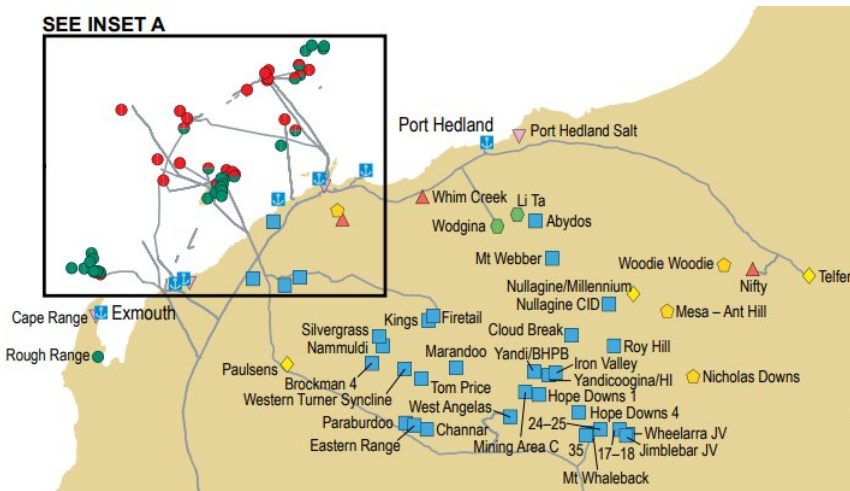


Fig. 11 - S2 (21.05.2020) - In yellow & green, new railway sections have since been developed to transport the ore to the coastal ports.

[2D view](#)



SEE INSET A



MINERAL SYMBOLS

- ☆ Precious mineral
- ◆ Precious metal
- ◆ Steel alloy metal
- Speciality metal
- ▲ Base metal
- Iron
- Alumina
- Energy
- ▽ Industrial mineral

PETROLEUM SYMBOLS

- Gas field
- Oil field
- Oil and gas field
- Oil / gas pipeline, operating
- - - Oil / gas pipeline, proposed

INFRASTRUCTURE

- Port

Map of extraction projects in Western Australia - [Source](#)

The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.
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