

Centurion Extension Project – Regional ecosystem mapping comparison

Kleinfelder was engaged by Peabody Energy Pty Ltd in 2024 to assess and map vegetation during the due diligence phase of the project. This survey focussed on mapping remnant versus non-remnant vegetation, in one short survey event and in a relatively restricted survey area. Following the Kleinfelder field survey, a subsequent regional ecosystem (RE) amendment was submitted to the Queensland Herbarium in 2024 which utilised the field-validated remnant mapping prepared by Kleinfelder and resulted in a Queensland Herbarium certified map amendment (MAR3577) for land parcels L411 SP285383, L11 SP285383 and L2 SP214117 within Mining Lease (ML) 1790 and ML 6949.

e2m was engaged by Peabody to complete seasonal field surveys to support the environmental authority (EA) amendment for the Centurion Extension Project, which included detailed surveys over a three survey periods (between February 2024 and June 2025) in a larger Study Area, encompassing portions of land parcels L2 SP214117, L11 SP262530, L2 SP214117 and L8 GV807254 within ML 1790, ML 6949 and Mineral Development Licence (MDL) 3010. Methodologies including targeted surveys for threatened flora and fauna, habitat suitability assessments and more extensive ground-truthed RE sampling effort and mapping across the broader Study Area.

Table 1 below demonstrates the differences in RE mapping completed across the Study Area between the two versions of mapping. These discrepancies are related primarily to land zones than vegetation characteristics. Table 2 identifies the differences in RE mapping present within the Disturbance Footprint for the Project.

Additionally, species' habitat mapping used by e2m considers species' specific habitat features, e.g. ground cover, weed cover, locally important koala trees (LIKTs), canopy species, gilgai, in addition to remnant and non-remnant RE mapping. A comparison of koala habitat mapping has been provided utilising potentially suitable remnant RE associations mapped by Kleinfelder compared with e2m RE and habitat mapping (Table 3).

Table 1: Regional ecosystems across the Study Area

Regional Ecosystem	Kleinfelder mapping	e2m mapping		Difference between e2m and Kleinfelder remnant RE mapping (ha)*
	Remnant (ha)	Remnant (ha)	High-value regrowth (ha)	
11.4.8	8.48	0.00	0.00	-8.48
11.4.9	75.68	0.00	0.00	-75.68
11.4.9/11.4.8	16.09	0.00	0.00	-16.09
11.5.16	144.05	196.66	221.16	52.61
11.5.17	0.00	4.16	0.00	4.16
11.8.13	93.75	0.00	0.00	-93.75
11.9.5	3.08	0.00	99.48	-3.08
11.5.15/11.8.13	1.21	0.00	0.00	-1.21
11.3.25	29.53	0.00	0.00	-29.53
11.3.25d	0.00	30.54	0.00	30.54
11.5.3	233.11	170.11	29.64	-63.00

Regional Ecosystem	Kleinfelder mapping	e2m mapping		Difference between e2m and Kleinfelder remnant RE mapping (ha)*
	Remnant (ha)	Remnant (ha)	High-value regrowth (ha)	
11.5.9	2,082.27	0.00	0.00	-2,082.27
11.5.9c	0.00	2,119.64	35.35	2,119.64
11.5.9/11.5.3	1.32	0.00	0.00	-1.32
11.5.15	8.25	32.02	3.99	23.77
11.5.15/11.5.3	19.40	0.00	0.00	-19.40
11.7.1x1	0.00	10.67	0.00	10.67
11.7.2	0.00	3.50	0.00	3.50
11.8.5	461.50	421.79	20.19	-39.71
11.3.4	9.90	0.00	0.00	-9.90
11.8.11	674.99	741.57	0.00	66.58
11.8.11/11.8.5	39.64	0.00	0.00	-39.64
11.4.8	8.48	0.00	0.00	-8.48

*Negative numbers indicate the RE is mapped by Kleinfelder and not by e2m.

Table 2: Regional ecosystems within the Disturbance Footprint

Regional Ecosystem	Kleinfelder mapping	e2m mapping		Difference between e2m and Kleinfelder remnant RE mapping (ha)*
	Remnant (ha)	Remnant (ha)	High-value regrowth (ha)	
11.4.8	0.00	0.00	0.00	0.00
11.4.9	0.28	0.00	0.00	-0.28
11.5.16	0.03	0.29	3.26	0.26
11.5.17	0.00	0.37	0.00	0.37
11.8.13	0.00	0.00	0.00	0.00
11.9.5	0.00	0.00	0.00	0.00
11.3.25	0.00	0.00	0.00	0.00
11.3.25d	0.00	0.00	0.00	0.00
11.5.3	1.11	0.36	0.69	-0.75
11.5.9	56.06	0.00	0.00	-56.06
11.5.9c	0.00	57.94	0.00	57.94
11.5.15	0.70	3.85	0.00	3.15
11.7.1x1	0.00	0.00	0.00	0.00
11.7.2	0.00	0.00	0.00	0.00

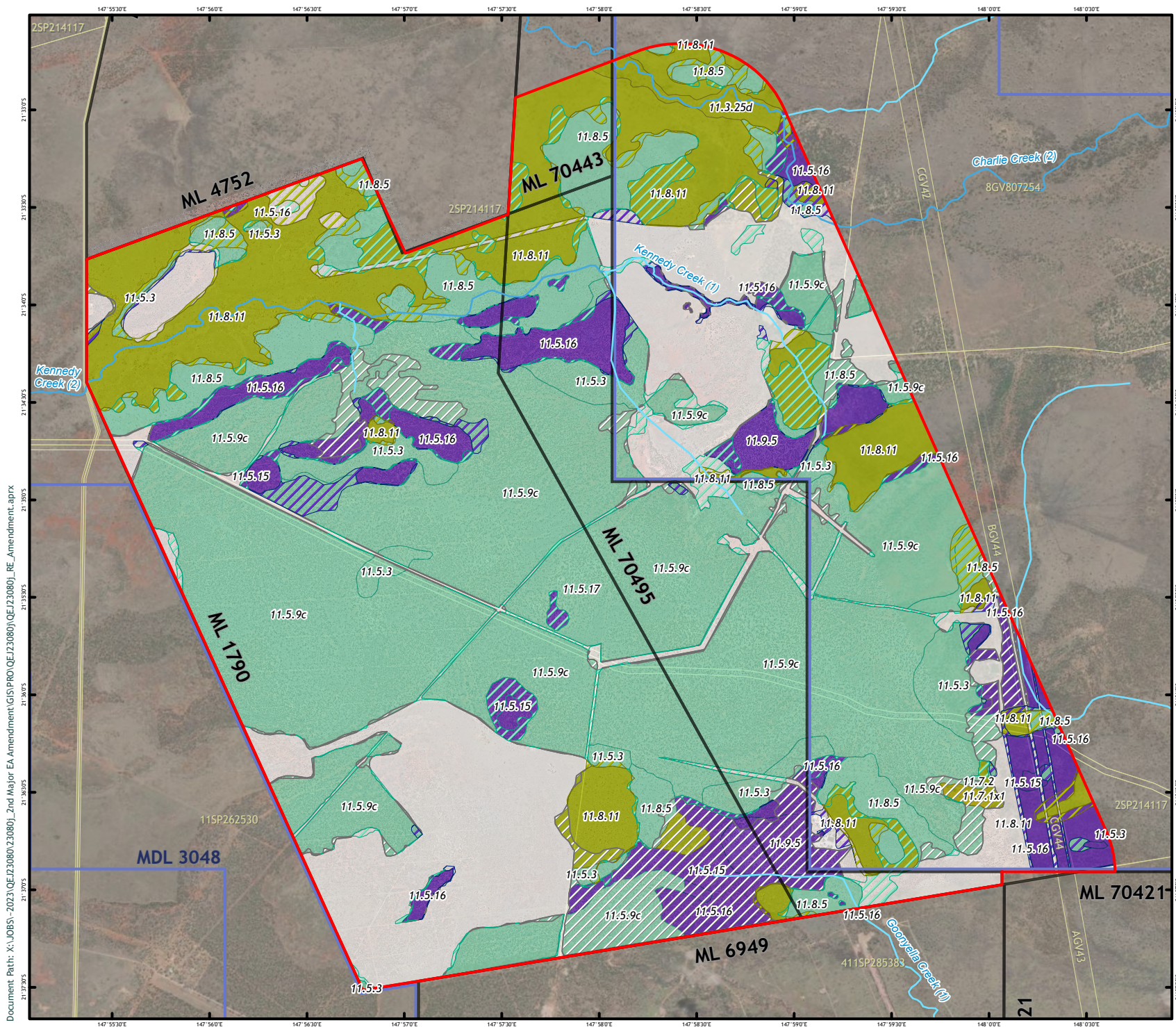
Regional Ecosystem	Kleinfelder mapping	e2m mapping		Difference between e2m and Kleinfelder remnant RE mapping (ha)*
	Remnant (ha)	Remnant (ha)	High-value regrowth (ha)	
11.8.5	1.17	1.63	0.00	0.46
11.3.4	0.00	0.00	0.00	0.00
11.8.11	3.55	6.58	0.00	3.03
11.4.8	0.00	0.00	0.00	0.00

*Negative numbers indicate the RE is mapped by Kleinfelder and not by e2m.

Table 3: Koala habitat mapping

Koala habitat	Using Kleinfelder RE mapping*		e2m mapping	
	Study Area (ha)	Study Area (ha)	Study Area (ha)	Disturbance Footprint (ha)
Breeding and Foraging	2,886.13	2,886.13	2,867.41	64.83
Dispersal	247.38	247.38	517.31	3.55

* Kleinfelder RE mapping does not specifically consider koala habitat features, or any other species' habitat features, nor does it include regrowth RE mapping. Therefore, koala habitat mapping using Kleinfelder RE mapping would rely on remnant RE associations only. e2m mapping uses remnant and regrowth RE mapping as a basis but also considers non-remnant vegetation and a range of species' specific habitat features and requirements outside of RE associations.



Watercourse (Stream Order)

1 2

- Cadastre
- Study Area
- Mineral Development Licence
- Mining Lease

Biodiversity Status (e2m GTRE)

- Non-remnant
- Endangered
- No concern at present
- Of concern

Biodiversity Status (Herbarium Map Amendment Differences)

- Endangered
- No concern at present
- Of Concern
- Non-remnant



Scale 1:50,000 (A4)

0 0.5 1 1.5

Kilometres

Coordinate System: GDA2020



FIGURE 5 SUMMARY OF RE DIFFERENCES WITHIN CND STUDY AREA

QEJ23080j
Regional Ecosystem Mapping Amendment

Centurion Coal Mine Pty Ltd

Drawn HM - 21/01/2026

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