Eucalyptus camaldulensis (river red gum) Biogeochemistry: An Innovative Tool for Mineral Exploration in the Curnamona Province and Adjacent Regions

Karen A. Hulme, B.Env.Sc (Hons)

Geology and Geophysics

School of Earth and Environmental Sciences

The University of Adelaide

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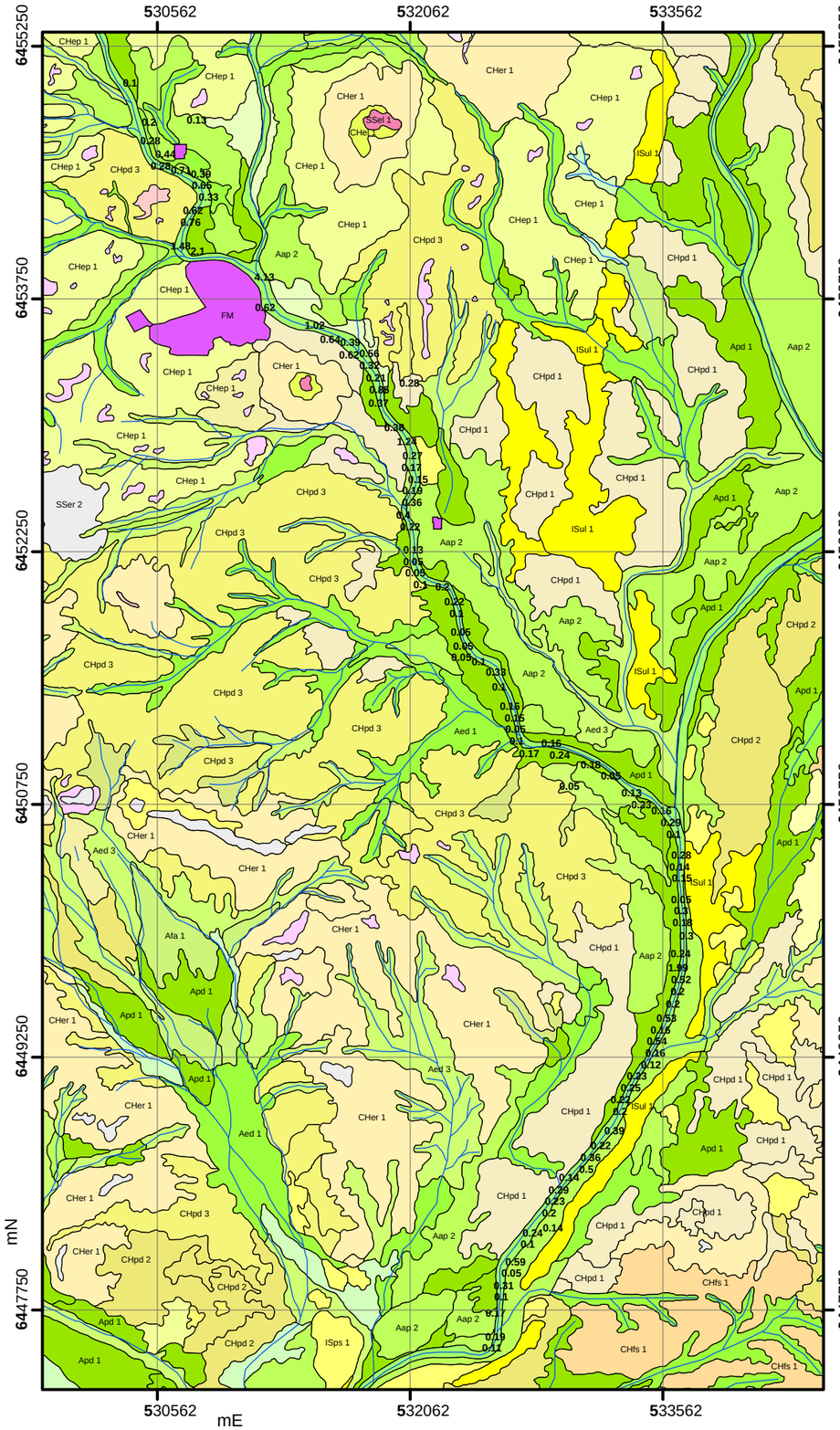
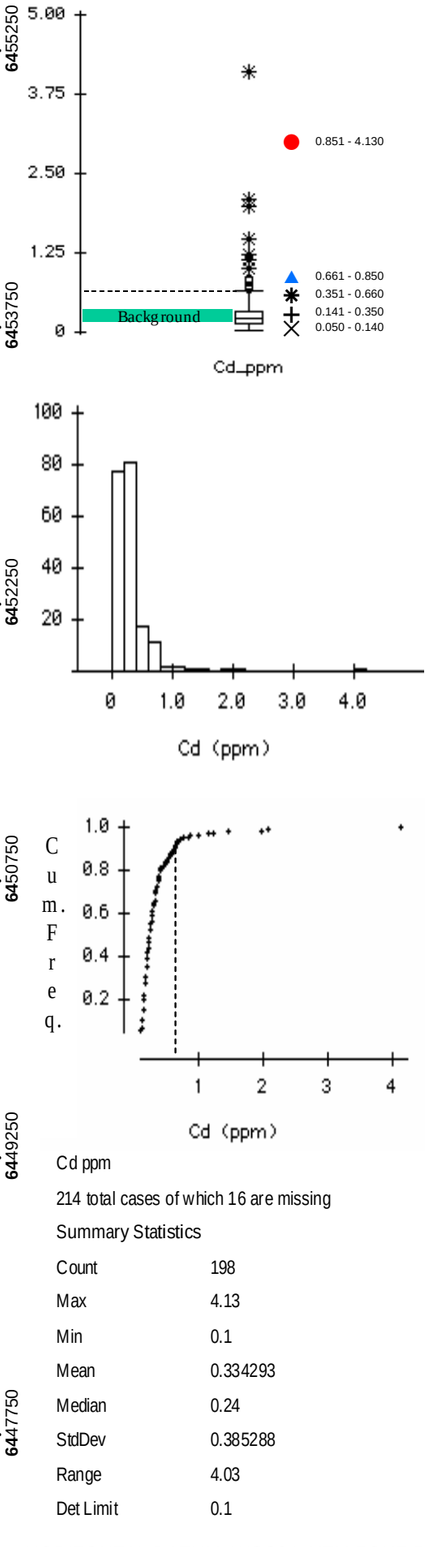
E. camaldulensis (leaves) Biogeochemistry
Pine Creek Broken Hill W/NSW - (Cd)





Cd ppm

214 total cases of which 16 are missing

Summary Statistics

Count	198
Max	4.13
Min	0.1
Mean	0.334293
Median	0.24
StdDev	0.385288
Range	4.03
Det Limit	0.1

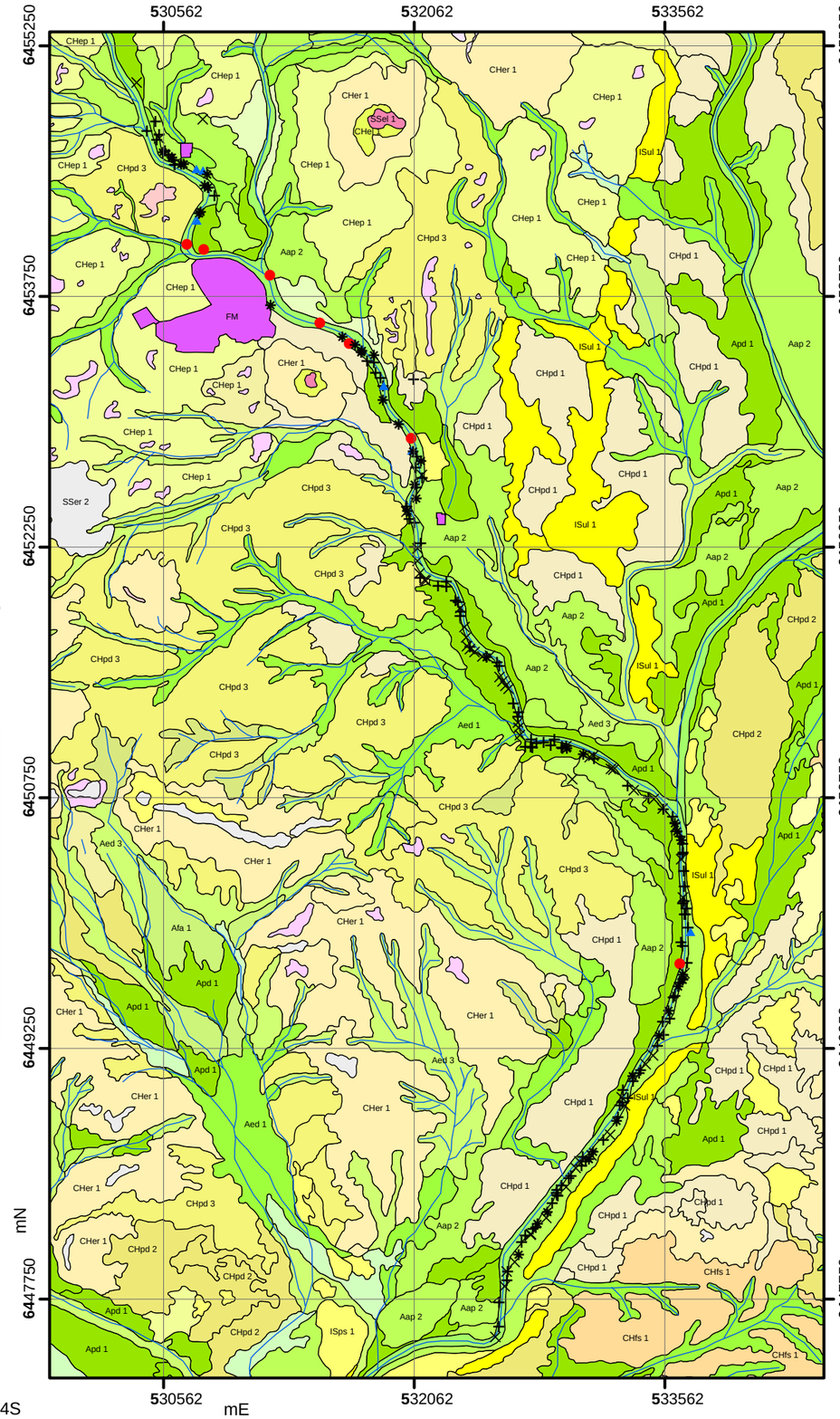


Figure 4.34: Raw data and spatial distribution of detectable Cd in *E. camaldulensis* (leaves) down Pine Creek with accompanying boxplots, histogram, cumulative frequency plot and summary statistics.

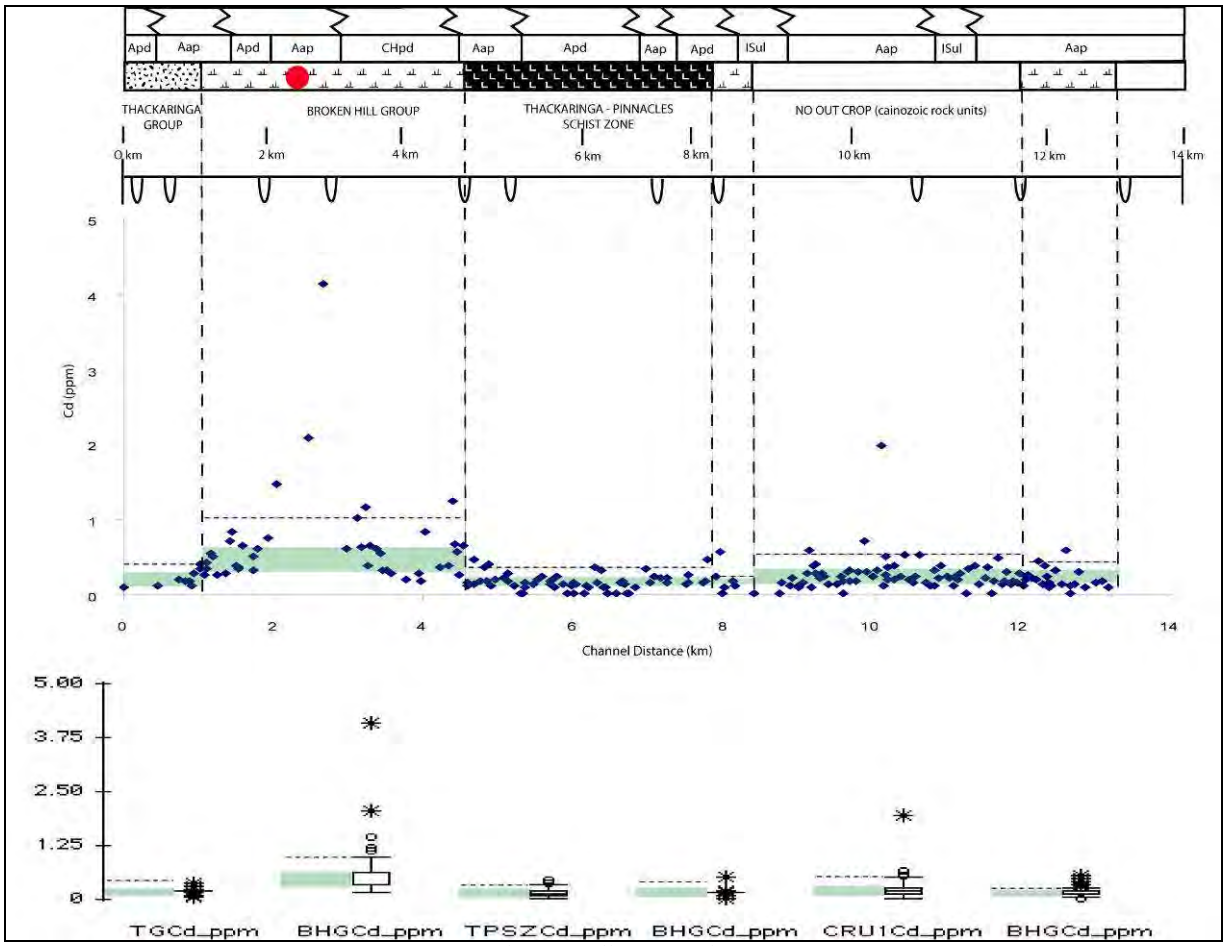
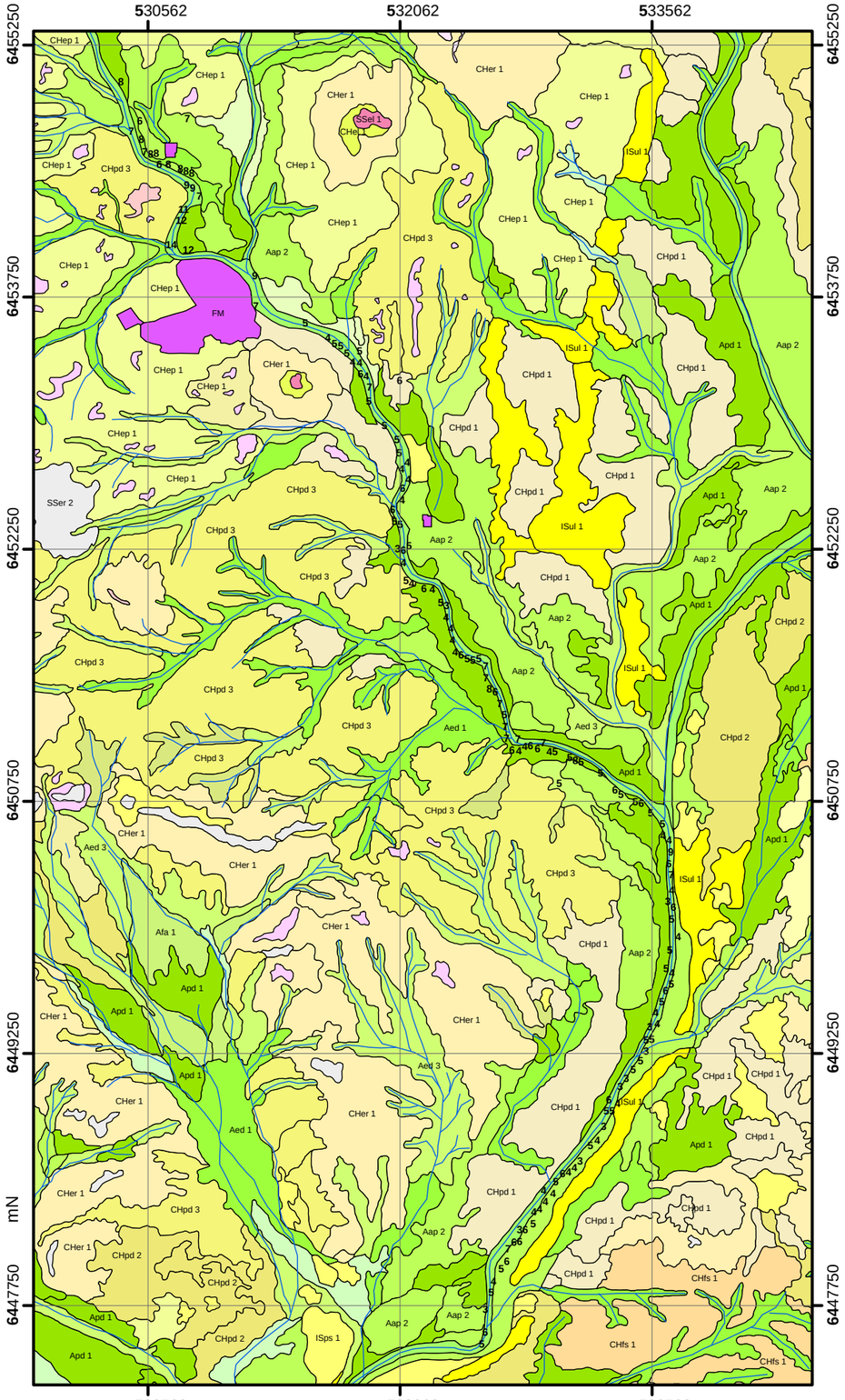


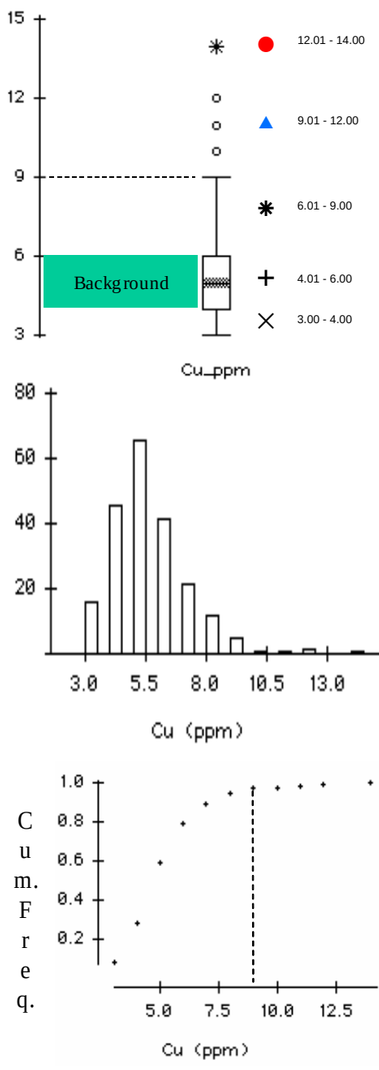
Figure 4.33: Cd concentrations within *E. camaldulensis*, flanking different land-form settings along Pine Creek. Thackaringa Group (TG), Broken Hill Group North (BHGN), Thackaringa-Pinnacles Schist Zone (TP/SZ), Broken Hill Group Central (BHGC), Cainozoic rock units (CRU) and Broken Hill Group South (BHGS). Green region denotes 'values below the mean, red dot the approximate location of the Barrier Pinnacles Mine and the dashed line indicates the 90th percentile.

Element (ppm) [detection limit] Analytical Method	**Parameters**	**Total data set (C) n=214**	**Setting**					
			Thackaringa Group TG (Apd, Aap) n=9	**Broken Hill Group BHG(N) (Aap, Apd & CHpd) n=42**	**Thackaringa-Pinnacles Schist Zone TP/SZ (Aap, Apd) n=60**	**Broken Hill Group BHG (C) (Apd & ISul) n=7**	**No outcrop (CRU) (ISul, Aap) n=61**	**Broken Hill Group BHG(S) (Aap) n=35**
Cd [0.1] ICP-MS	Concentration range (Mean)	*-4.13 (0.33)	0.1-0.42 (0.22)	0.19-4.13 (0.67)	*-0.48 (0.2)	*-0.57 (0.24)	*-1.99 (0.3)	*-0.59 (0.23)
	25th - 75th percentile	0.14-0.35	0.13-0.30	0.33-0.68	0.11-0.22	0.12-0.32	0.16-0.32	0.14-0.28
	95% confidence level	0.05	0.08	0.21	0.03	0.23	0.07	0.04
	>90th percentile (outliers), # of samples	0.66-4.13 (14)	No outliers'	1.16-4.13 (5)	0.40-0.48 (3)	No outliers'	0.60-1.99 (3)	0.31-0.59 (8)
	E. camaldulensis position with the greatest concentration.	north part of the Pine Creek catchment, and adjacent to the Barrier Pinnacle Mine and depositional regolith-landforms Aap_2.	southern margin at the interface between TG and BHG (N). Down stream of an NW intersecting Aed unit. Flanked by regolith-landform units Aap_2 and $CHpd_3$.	adjacent to the Barrier Pinnacles Mine, southern margin down stream of intersecting NE Aed unit.	northern and southern margin at the interface between BHG (N) and TP/SZ and BHG (CL). Flanked by regolith-landform units Aap_2 and Apd_1.	northern margin at the interface between BHG (CL) and TP/SZ. Flanked by regolith-landform unit Apd_1.	downstream of the confluence of tributary alluvial channel deposits $ACar_1$ (Gum Creek). Flanked by regolith-landform units Apd_1 and $ISps_1$.	northern and central region. Down stream of intersecting NW Aed units. Flanked by regolith-landform units Aap_2 and $CHpd_1$.

Table 4.36: Variations of Cd concentrations within *E. camaldulensis* (river red gums), flanking different land-form settings along Pine Creek. Initial values concentration range (mean), 25th - 75th percentile concentration range, 95 % confidence; level, >90th percentile (outliers), C= composite sample, * signifies values below detection limit.

E. camaldulensis (leaves) Biogeochemistry
Pine Creek Broken Hill W/NSW - (Cu)

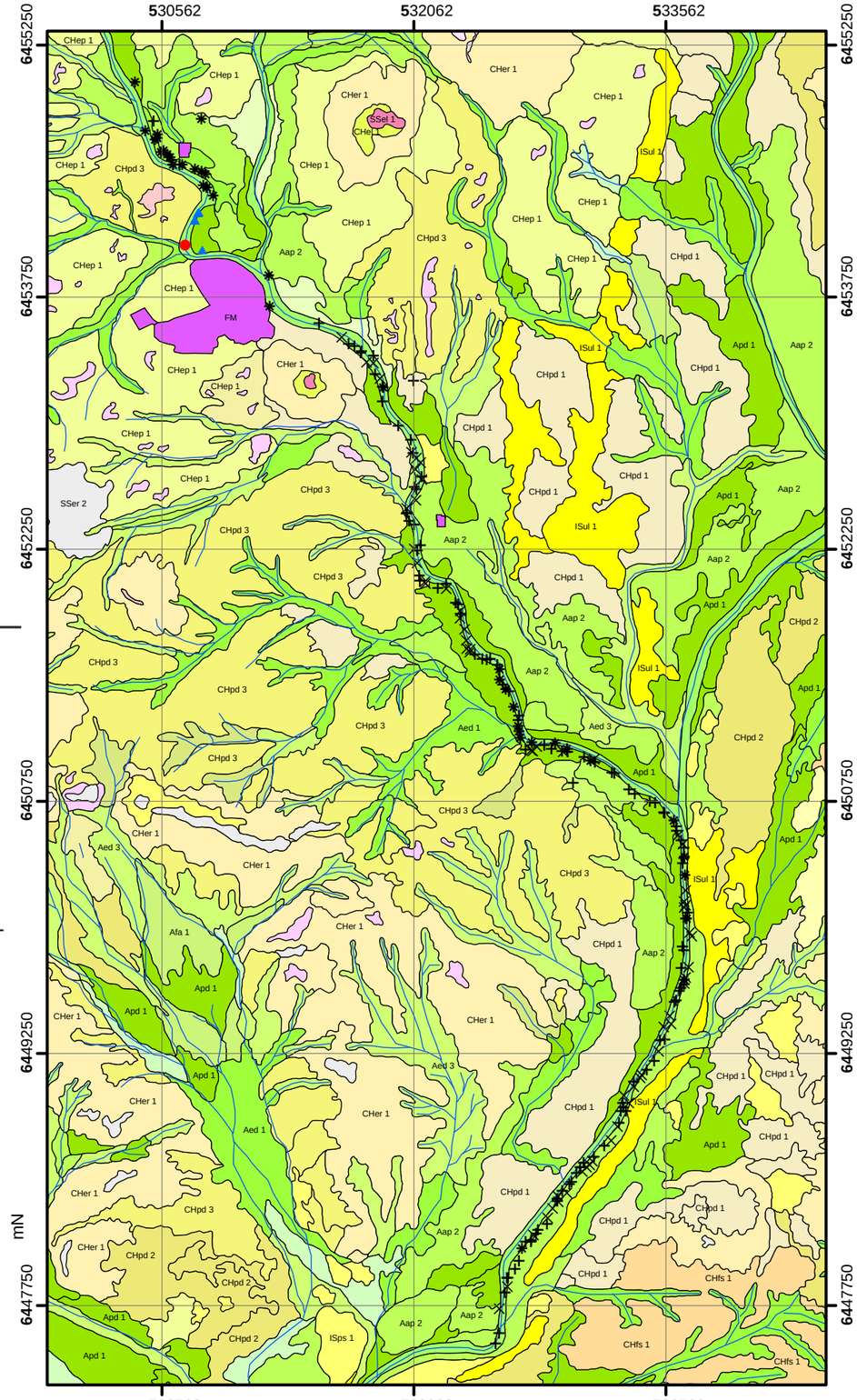




Cu ppm

Summary Statistics

Count	214
Max	14
Min	3
Mean	5.45794
Median	5
StdDev	1.7104
Range	11
Det Limit	0.8



HORIZONTAL DATUM: WGS84, UTM ZONE 54S

Figure 4.32: Raw data and spatial distribution of detectable Cu in *E. camaldulensis* (leaves) down Pine Creek with accompanying boxplots, histogram, cumulative frequency plot and summary statistics.

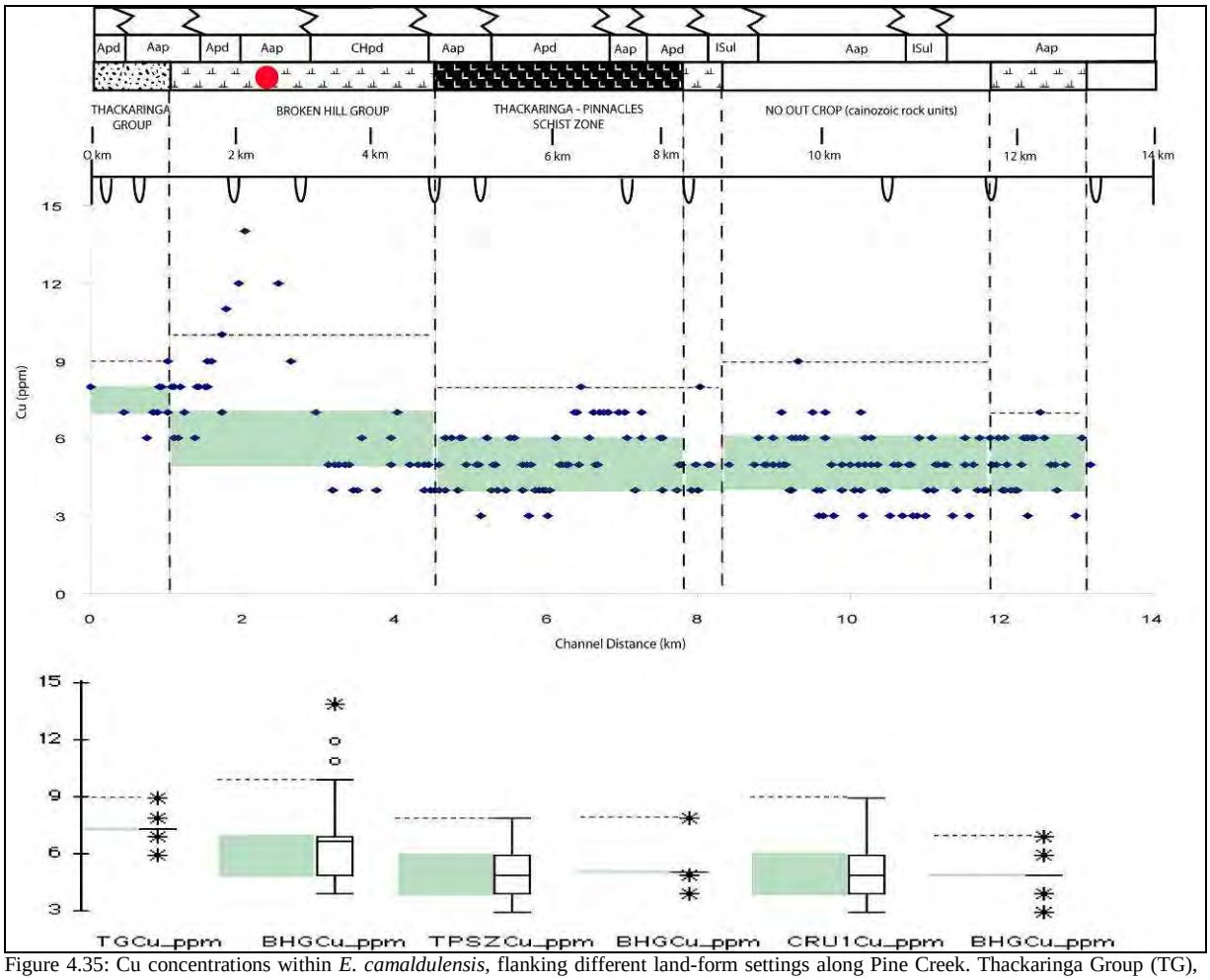


Figure 4.35: Cu concentrations within *E. camaldulensis*, flanking different land-form settings along Pine Creek. Thackaringa Group (TG), Broken Hill Group North (BHGN), Thackaringa-Pinnacles Schist Zone (TP/SZ), Broken Hill Group Central (BHGC), Cainozoic rock units (CRU) and Broken Hill Group South (BHGS). Green region denotes 'values below the mean, red dot the approximate location of the Barrier Pinnacles Mine and the dashed line indicates the 90th percentile.

Element (ppm) [detection limit] Analytical Method	**Parameters**	**Total data set (C) n=214**	**Setting**					
			Thackaringa Group TG (Apd, Aap) n=9	**Broken Hill Group BHG(N) (Aap, Apd & CHpd) n=42**	**Thackaringa-Pinnacles Schist Zone TP/SZ (Aap, Apd) n=60**	**Broken Hill Group BHG (C) (Apd & ISul) n=7**	**No outcrop (CRU) (ISul, Aap) n=61**	**Broken Hill Group BHG(S) (Aap) n=35**
Cu [0.8] XRF	Concentration range (Mean)	3-14 (5)	6-9 (7)	4-14 (7)	3-8 (5)	4-8 (5)	3-9 (5)	3-7 (5)
	25th - 75th percentile	4-6	7-8	5-7	4-6	4-5	4-6	4-6
	95% confidence level	0.23	0.67	0.77	0.31	1.2	0.32	0.36
	>90th percentile (outliers), # of samples	9-14 (4)	No outliers'	11-14 (4)	No outliers'	No outliers'	No outliers'	No outliers'
	E. camaldulensis position with the greatest concentration.	upper part of the Pine Creek catchment, adjacent to the Barrier Pinnacles Mine.	southern margin at the interface between TG and BHG (N). Down stream of an NW intersecting Aed unit. Flanked by regolith-landform units Aap_2 and $CHpd_3$.	upstream of the Barrier Pinnacles Mine. Flanked by regolith-landform units Apd_1, and $CHpd_3$.	southern margin in a depositional flood out regions. Flanked by regolith-landform units Apd_1 and Aap_2.	northern margin at the interface between BHG (CL) and TP/SZ. Flanked by regolith-landform unit Apd_1.	downstream of the confluence of tributary alluvial channel deposits $ACar_1$ (Gum Creek). Flanked by regolith-landform units Apd_1 and $ISps_1$.	central region, flanked by regolith-landform units Aap_2 and $CHpd_1$.

Table 4.37: Variations of Cu concentrations within *E. camaldulensis* (river red gums), flanking different land-form settings along Pine Creek. Initial values concentration range (mean), 25th - 75th percentile concentration range, 95 % confidence; level, >90th percentile (outliers), C= composite sample.