Glen Vale

153 ha · Cropping · 740 mm avg rainfall

Soil carbon: High | Environmental plantings: Medium | SOC potential computed

Executive summary

GXLab has prepared this Environmental Farm Assessment for a 153 ha property. The assessment draws on GXLab's national SOC model (10m resolution, 5,000+ samples), FullCAM/Renovo environmental planting modelling, and Bureau of Meteorology climate data.

Average annual rainfall of 740mm supports active organic matter cycling. Your property is achieving above-average soil carbon for its zone - a positive sign despite the lower rainfall.

Modelled mean SOC of 1.766% (0–30cm) indicates a high soil carbon opportunity. Boundary-line analysis using clay content indicates mean SOC potential of 77.67%, a 10.866% mean uplift across the property. Environmental planting potential averages 5.76 tCO_2e/ha/yr.

Soil Carbon Stock - estimated 25-year project

6,096

carbon credits (CO_2e) over 25 years

244 t CO_2e/yr · 153 ha eligible area
Rate: 1.594 t CO_2e/ha/yr
+6,096 t CO_2e additional if within-farm SOC gap closed

Modelled estimate. Subject to soil sampling and CER eligibility.

Environmental plantings - estimated 25-year project

1,102

t CO_2e over 25 years

44 t CO_2e/yr · 8 ha (est. 5% of total area)
Rate: 5.76 t CO_2e/ha/yr (FullCAM/Renovo model)

Modelled estimate. Subject to species selection and site suitability.

Farm boundary · Cadastral parcels

67.5 t	51.7-162.7	1.594 t	5.76 t
Mean SOC Stock (t C/ha)	Stock range (t C/ha)	t CO_2e / ha / yr	t CO_2e / ha / yr (plantings)

Calculated from clay boundary-line gap 10.866% × BD 1.2 × 4.4 (30cm depth, 25yr)

Carbon indicators

Benchmarked against 15,000+ Australian soil samples by rainfall zone

Soil Carbon Stock
Current stock vs peer farms at similar rainfall and soil type — High

Above the regional average for your rainfall zone and soil type - your property is sequestering carbon stock effectively.

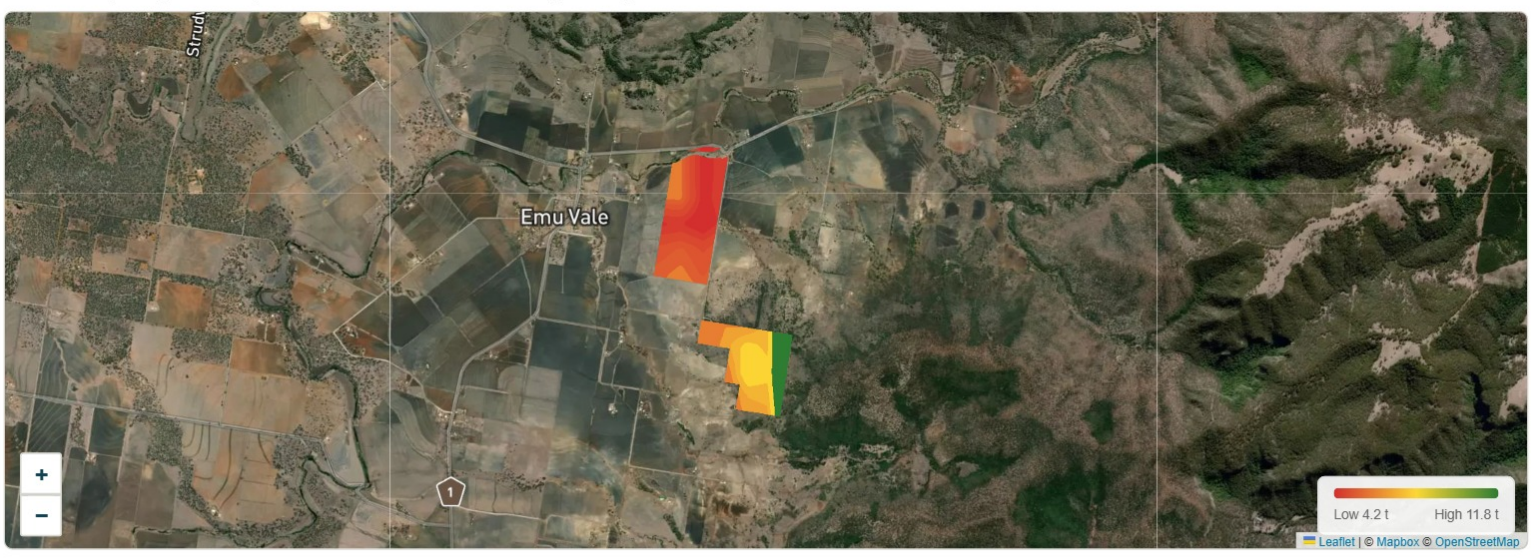
Environmental plantings
Abatement from tree planting — Medium

Moderate abatement potential - plantings on suitable areas could contribute meaningfully.

Rainfall
Optimal range 500-700mm for soil carbon — 740 mm

Low · Medium · High — Applies to Soil Carbon Stock, Environmental Plantings and Rainfall indicators above

Environmental planting abatement potential · FullCAM / Renovo - red = low, green = high

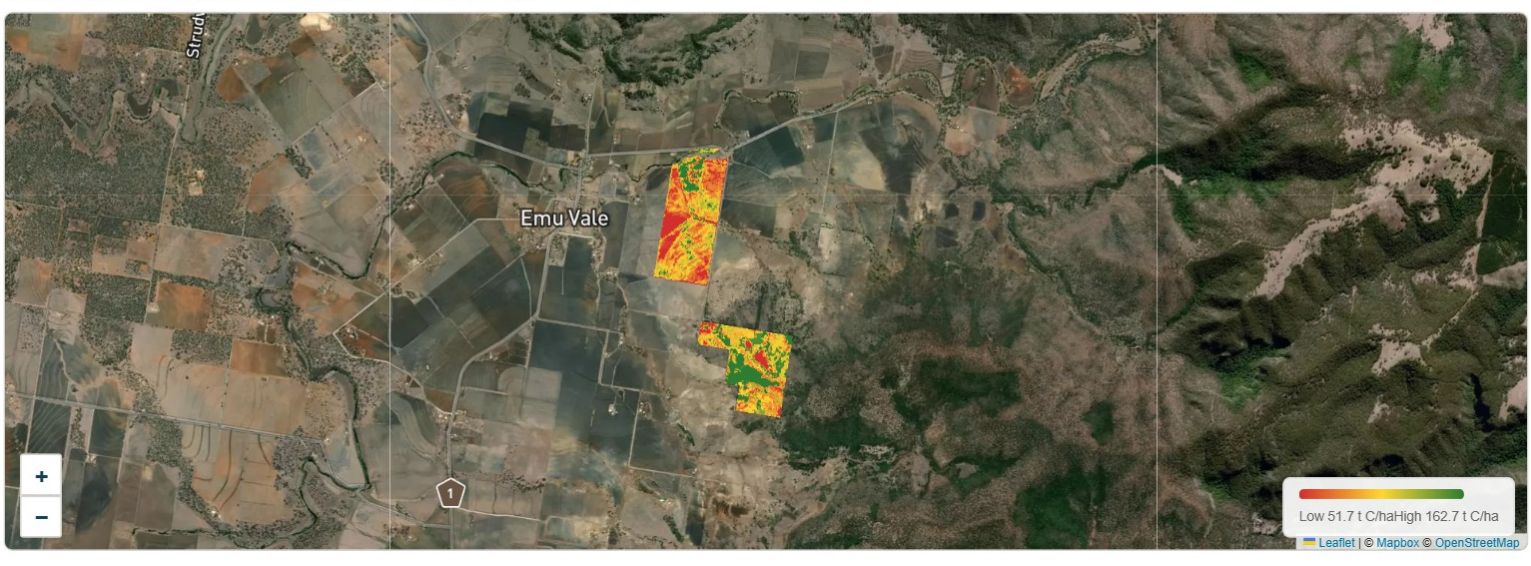


Environmental plantings summary

Estimated 8 ha (est. 5% of property area) eligible for environmental plantings at 5.76 t CO_2e/ha/yr.
Over a 25-year project this could generate approximately 1,102 t CO_2e in abatement credits, or 44 t CO_2e/yr.

Modelled using FullCAM/Renovo. Subject to site suitability and project eligibility.

Soil Organic Carbon Stock (0-30cm) · SOC% × BD - red = low, green = high



SOC Stock benchmark - matched by rainfall & clay (n=8 peers)

GXLab benchmark: 8 farms matched on both rainfall (740mm) and clay content (25%). Using both factors gives a more precise comparison than rainfall alone.

Low <1.259% · High >1.67%

Property estimate: 1.766% SOC (67.5 t C/ha)

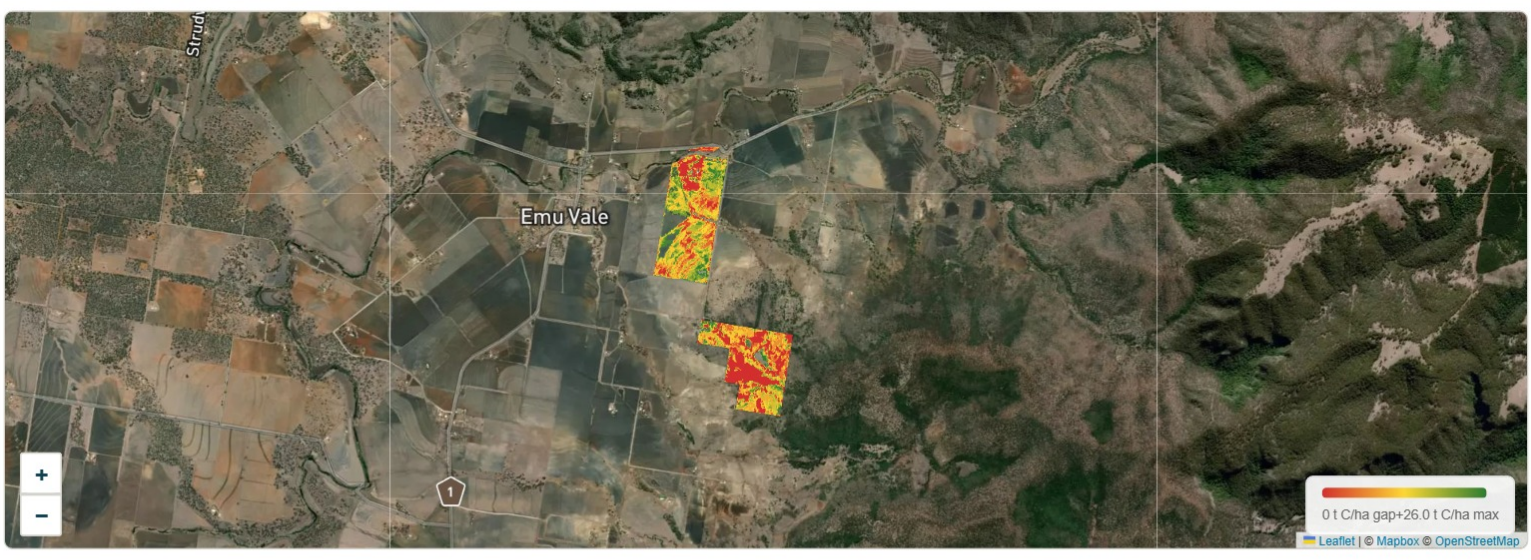
Low - below 1.259% SOC
Below the regional average for your rainfall zone and soil type. Greatest opportunity to build soil carbon through improved land management.

Medium - 1.259 to 1.67% SOC
Near the regional average. Meaningful improvement still possible depending on soil type and current practices.

High - above 1.67% SOC
Above the regional average. Strong carbon storage. Baseline sampling will confirm your exact project starting point.

These are modelled estimates, not measured values. Thresholds are the 25th/75th percentiles of GXLab's national database matched to your rainfall band and clay content.

SOC Stock potential (0-30cm) · Boundary-line model (stock vs clay) - dark = near ceiling, yellow = large gap



Mean potential stock (0-30cm): 77.7 t C/ha
Mean current stock: 67.5 t C/ha
Mean stock gap: 10.87 t C/ha
Max achievable cap: 77.7 t C/ha
Paired pixels: 10,806
Using SOC stock (SOC% × BD × 30cm) — more accurate than SOC% alone

Boundary-line method identifies the maximum SOC stock (t C/ha) achievable at each clay level. The gap between current and potential stock is the sequestration headroom achievable with management change.

Est. additional CO_2e (25yr, if gap fully closed): 6,096 t CO_2e

Conclusion & next steps

This property presents a measurable carbon opportunity across soil sequestration and environmental plantings. Over 25 years, soil sequestration may generate approximately 6,096 carbon credits (CO_2e).From SOC stock gap 10.87 t C/ha × 3.667/25yr = 1.594 t CO_2e/ha/yr across 153 ha. With 1,102 tCO_2e additional from plantings across an estimated 8 ha (5% default).

GXLab recommends baseline soil sampling to verify modelled SOC and confirm CER eligibility. Engagement with a registered carbon project developer is the recommended next step.

Glossary of key terms

SOC - Soil Organic Carbon. Carbon stored in soil from decomposed organic matter.

CO_2e - Carbon dioxide equivalent. 1 t CO_2e = 1 carbon credit (ACCU).

ACCU - Australian Carbon Credit Unit. Tradeable credit for each tonne of CO_2e sequestered, issued by the CER.

CER - Clean Energy Regulator. Australian government body that issues ACCUs and administers carbon projects.

Bulk density (BD) - Mass of dry soil per unit volume (g/cm³). Converts SOC % to stock (t C/ha).

Boundary-line model - Statistical method identifying the maximum achievable SOC at each clay level.

FullCAM / Renovo - Government-approved model for estimating tree planting abatement.

GXLab model - National 10m-resolution SOC model built from 15,000+ field measurements.

Key references: gxlab.com · renovoag.com.au · cleanenergyregulator.gov.au