

Demystifying carbon projects: Soil carbon



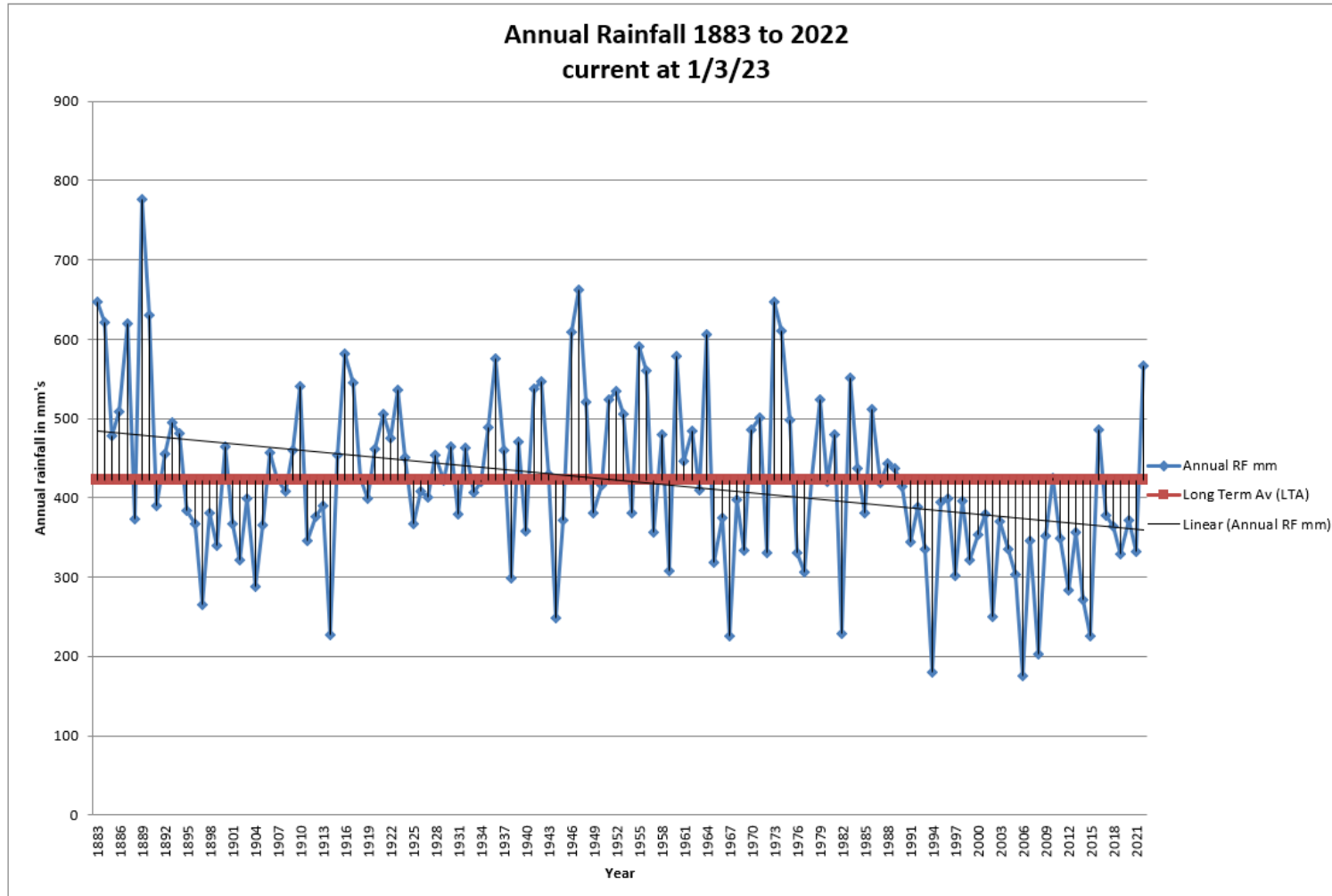
Steven Hobbs
713 Yarrock Road
Kaniva, Vic, 3419
www.yarrock.com

Starting a carbon project...

some considerations

- Motivation for a project - \$, market access, off-sets, landscape function
- The \$price of carbon
- The integrity of carbon units influences the price
- Size of project - 2000t CO₂e, Aggregator, Third party, go it alone
- Cost of project - records, testing, implementation
- Permanence period
- Constraints – financial, legal, insurance
- Site selection – poorest soils most potential
- How to?

Why (do I need to change?)



In summary, compared to the 139 year average, since 1990 there has been a...

- 18% decline in Annual rainfall (-75mm)
- 20% decline in GSR (-63mm)
- Increased Frost season. On average 147 days from first frost to last (0°C or below). First frost occurs around the 28th May
- Since 2014, temperatures of $\geq 32^{\circ}\text{C}$ are still being recorded in April. The first days of temperatures $\geq 32^{\circ}\text{C}$ are being recorded in October.

This is WHAT I've identified and need to do

To reduce risk under a decreased and less reliable rainfall scenario with a greater probability of late season frost;

- Cost of growing crops is too high in proportion to risk
- With increased variability no guarantee of grain quantity or quality
- Reduce RISK - change cropping/sheep ratio (60/40 to 30/70)
- Grow more grass – eat weeds, reduce chem.resistance & frost problems
- Breeding objectives - Select animals that are better suited to conditions
- Rotational grazing, cover crops, regenerate/sow perennial grasses
- Greater ground cover, more feed, retain moisture & nutrient, ↑ soil function
- Run more profitable sheep - variable rate stocking!
- **Diversify income stream - carbon/ carbon neutral produce/ carbon off-sets**
- Reduce costs – look for low hanging fruit...do easy stuff first

*Identify & keep best performing individuals, sell under performers
The ability to keep best animals and destock to market value*

S2F - Safe to fail trial area/s



1 sheep per square meter (10,000sheep/ha) for 3 hours.
Planned recovery 12 months



31 March 2022



20 April 2022



26 April 2022



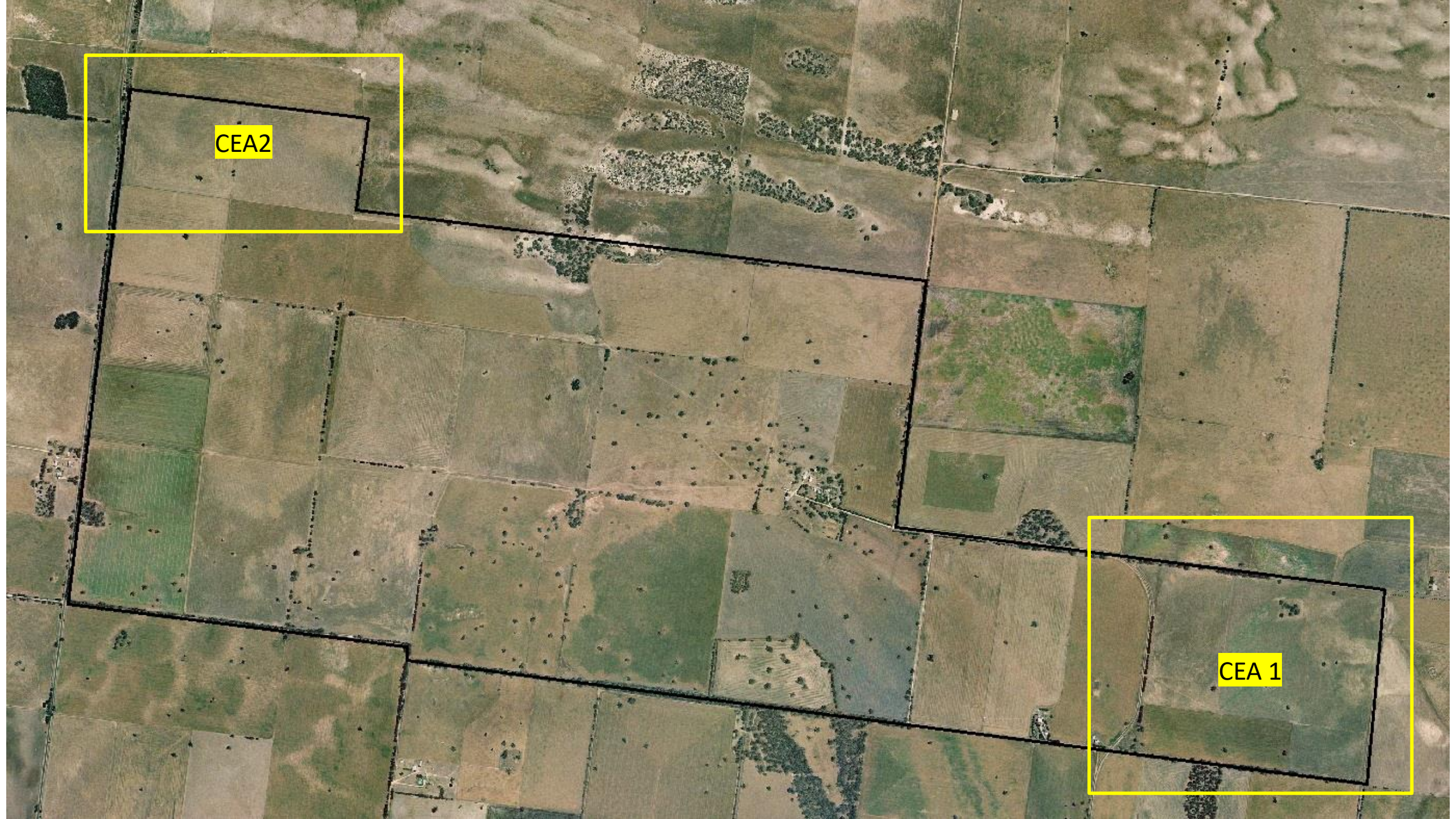
5 May 2022



17 August 2022



10 April 2023

An aerial photograph showing a patchwork of agricultural fields. The fields are mostly brown and tan, with some green patches. A black line outlines a large area, and two yellow boxes highlight specific sub-areas. The top-left yellow box is labeled 'CEA2' and the bottom-right yellow box is labeled 'CEA 1'.

CEA2

CEA 1

CEA 1-Perrenial



CEA2-Cover crop



CEA2

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Testing & Results



	Sample depth	Baseline Total Organic Carbon (% C)	5 yr sample Total Organic Carbon (% C)	Total Organic Carbon Difference-% C	% increase over baseline	Average % increase/CEA 0-30cm 30-100cm
		LECO CNS2000 Analyser	Carbon Farming Initiative - Measurement of Soil Carbon Sequestration in Agricultural Systems 2018			
Carbon Estimation Area 1	Top 0-30cm	0.616	0.824	0.208	34%	33%
	30.1-100cm	0.157	0.395	0.238	152%	105%
	Top 0-30cm	0.910	1.006	0.096	10%	
	30.1-100cm	0.238	0.370	0.132	56%	
	Top 0-30cm	0.545	0.843	0.298	55%	
	30.1-100cm	0.173	0.357	0.184	107%	
Carbon Estimation Area 2	Top 0-30cm	0.453	0.794	0.341	75%	44%
	30.1-100cm	0.136	0.326	0.190	140%	131%
	Top 0-30cm	0.586	0.745	0.159	27%	
	30.1-100cm	0.123	0.320	0.197	160%	
	Top 0-30cm	0.524	0.677	0.153	29%	
	30.1-100cm	0.152	0.292	0.140	92%	