



tia

TASMANIAN INSTITUTE
OF AGRICULTURE

Cressy & Northwest Soil & trial results

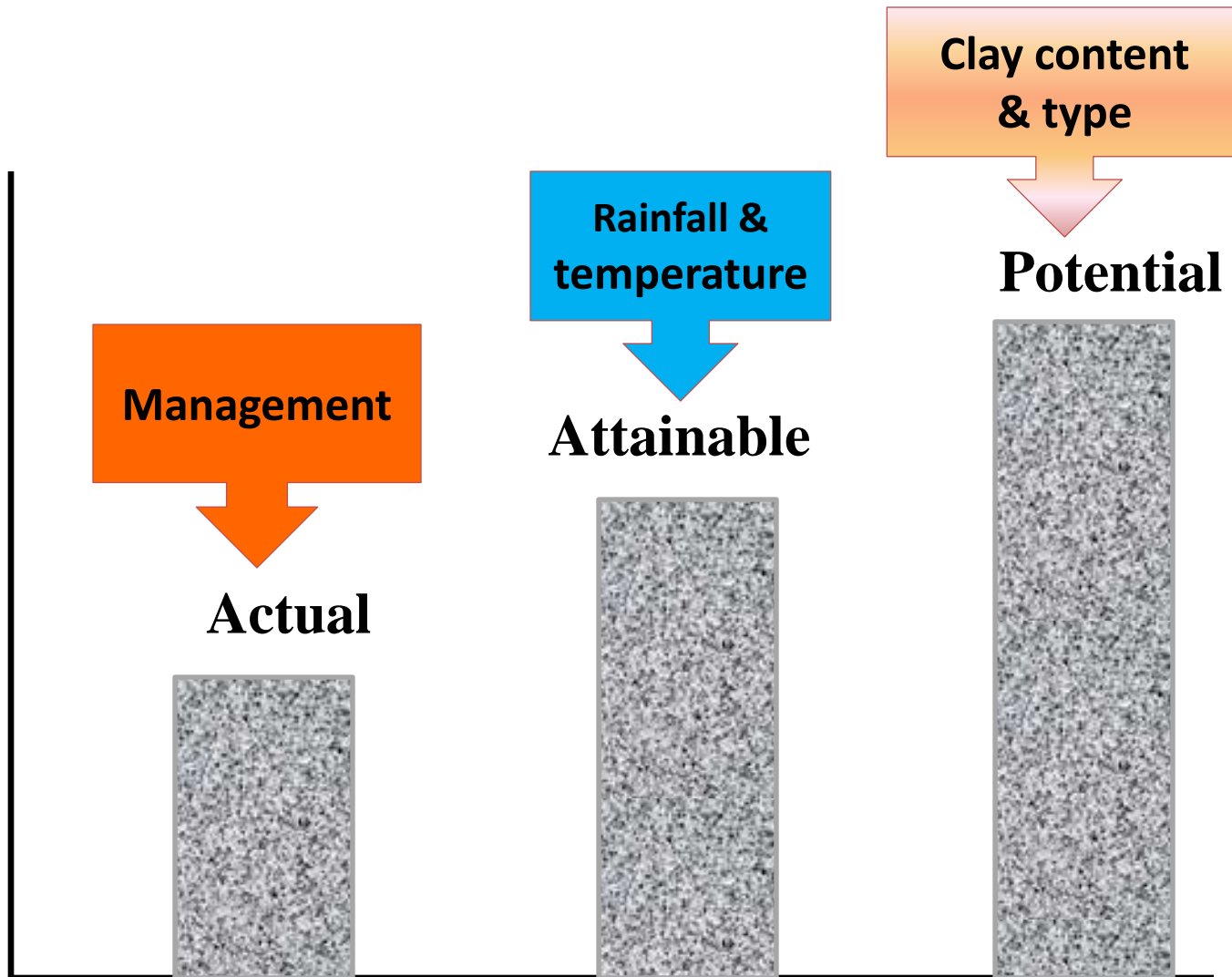
Bill Cotching



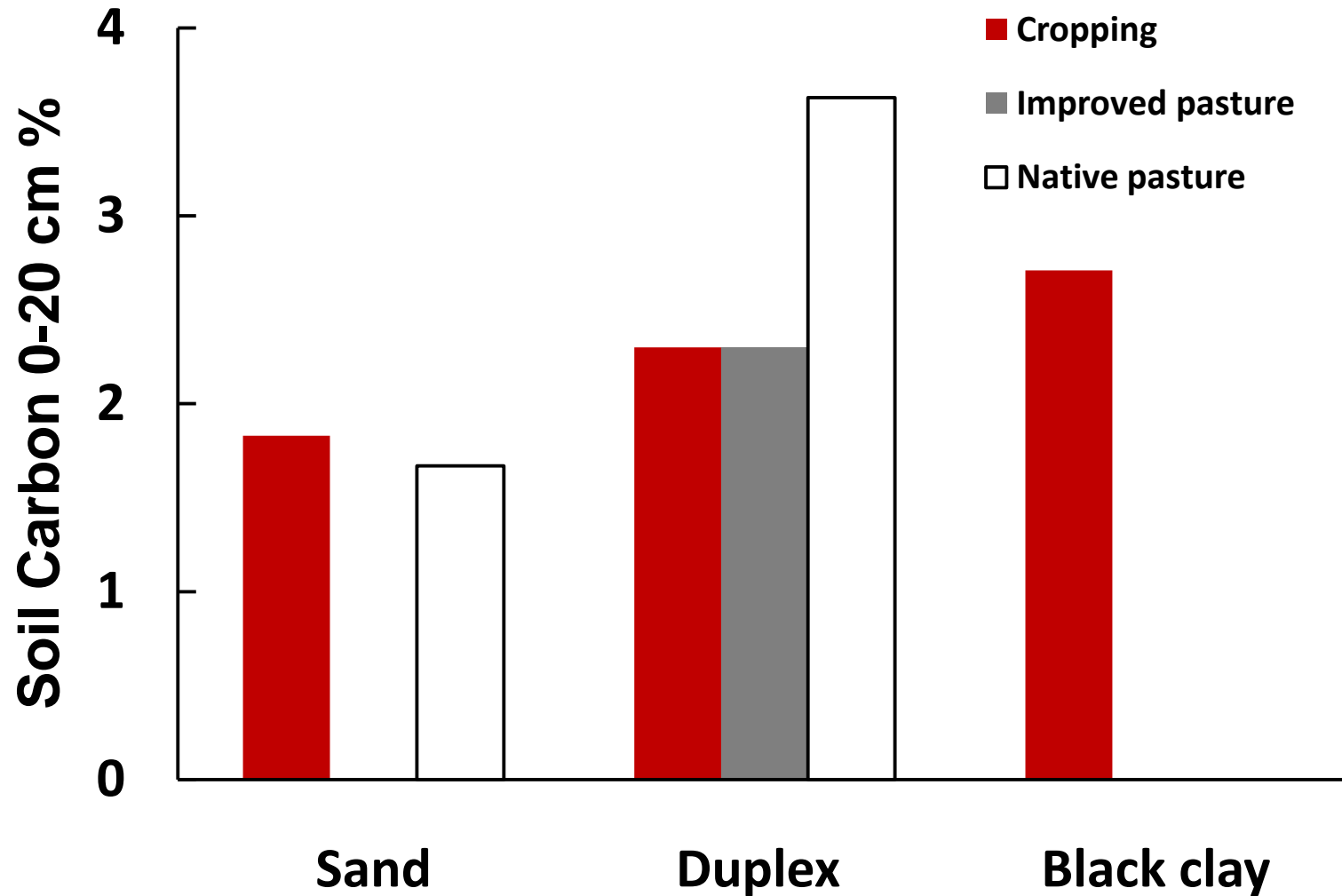
TIA is a joint venture of the University of Tasmania and the Tasmanian Government

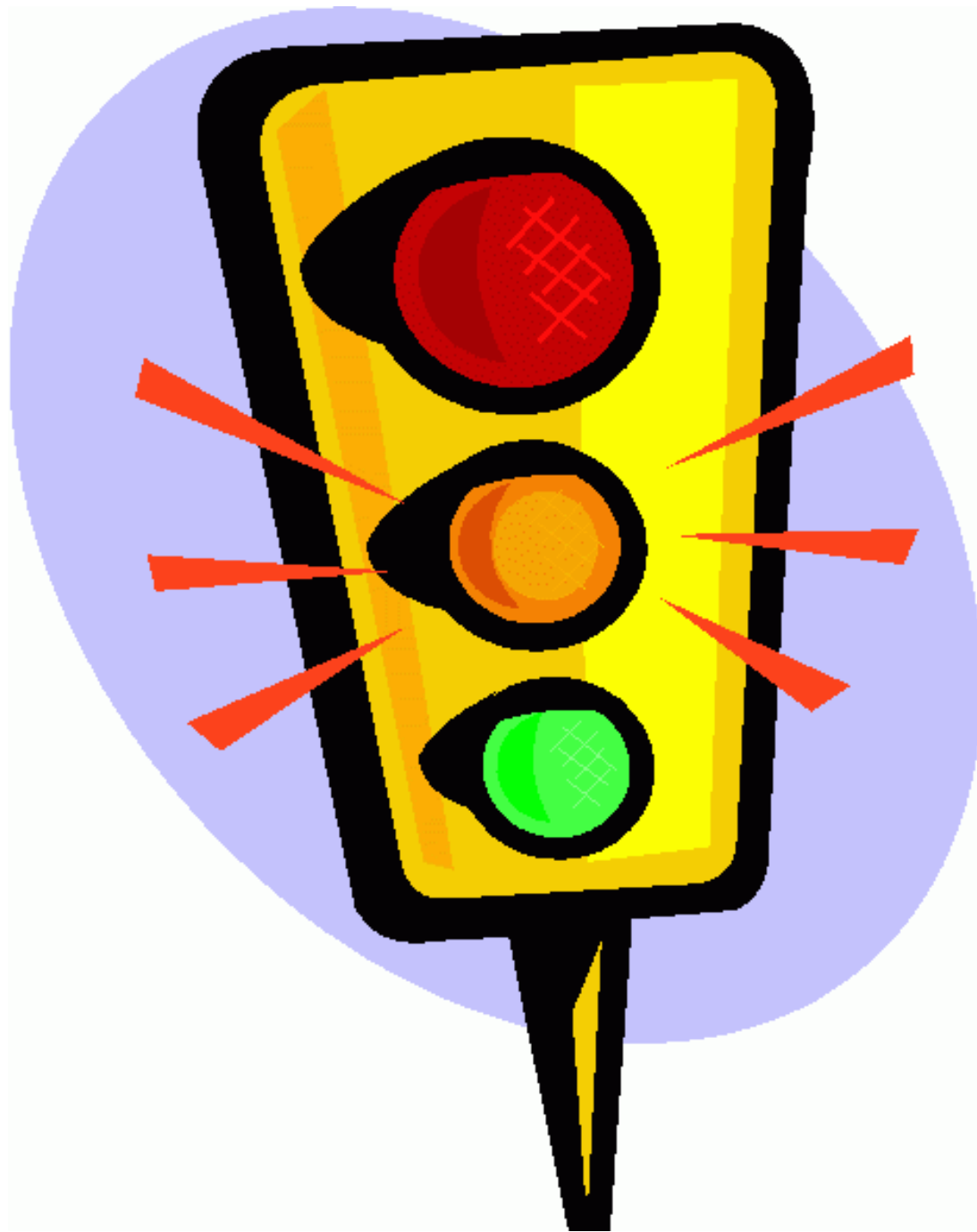


Soil organic carbon

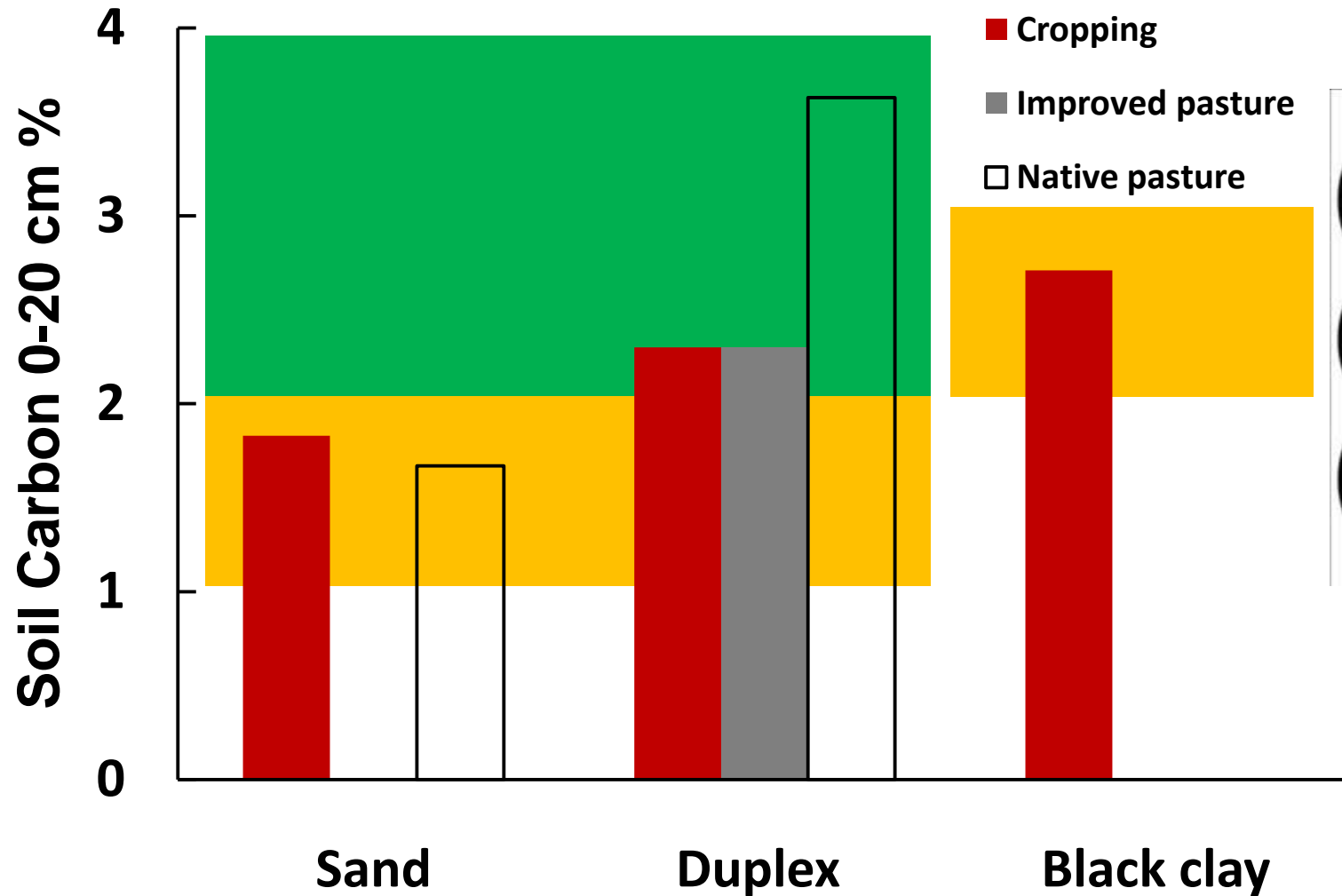


Cressy soil carbon 0 – 20 cm depth

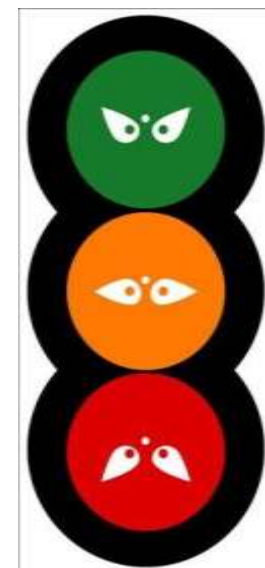
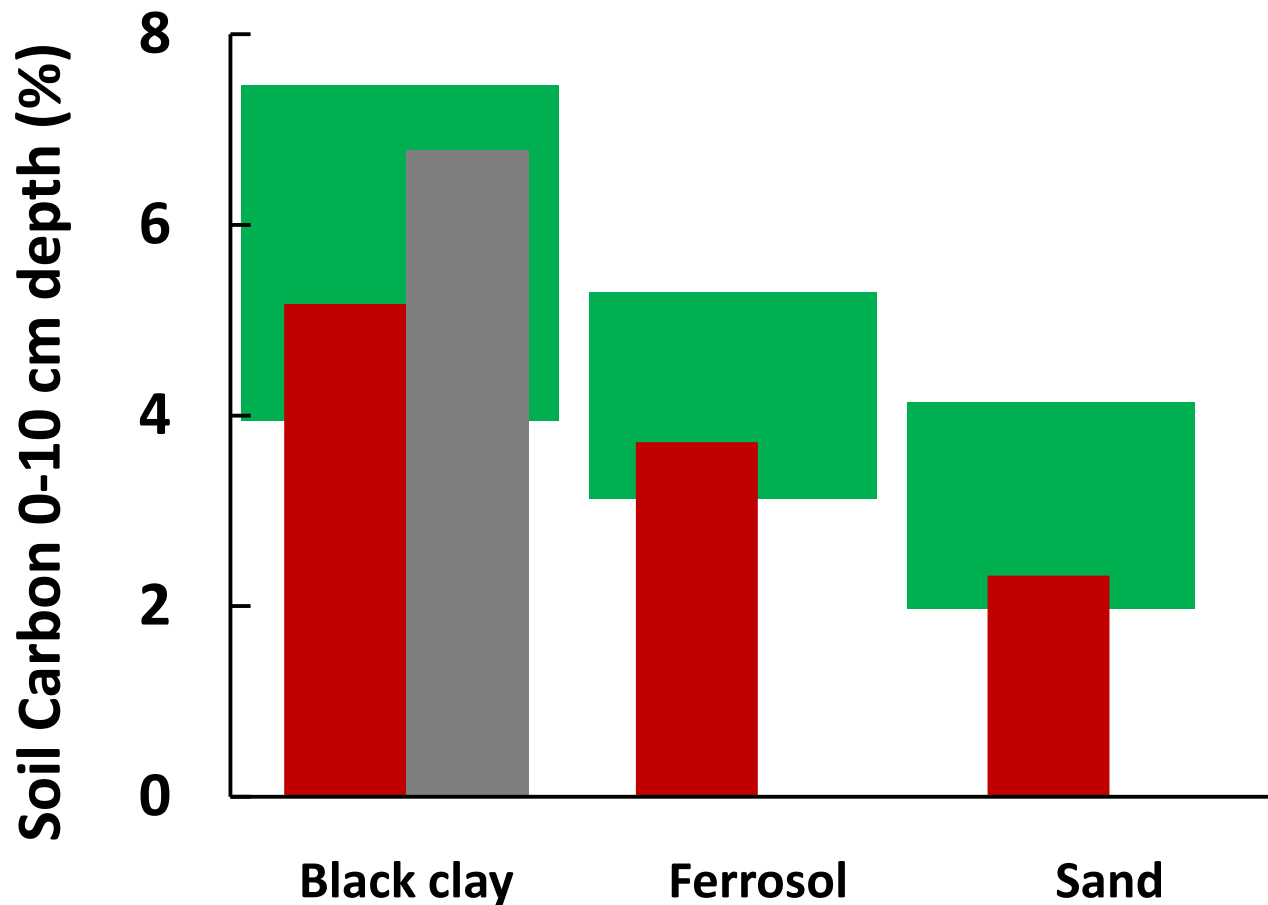




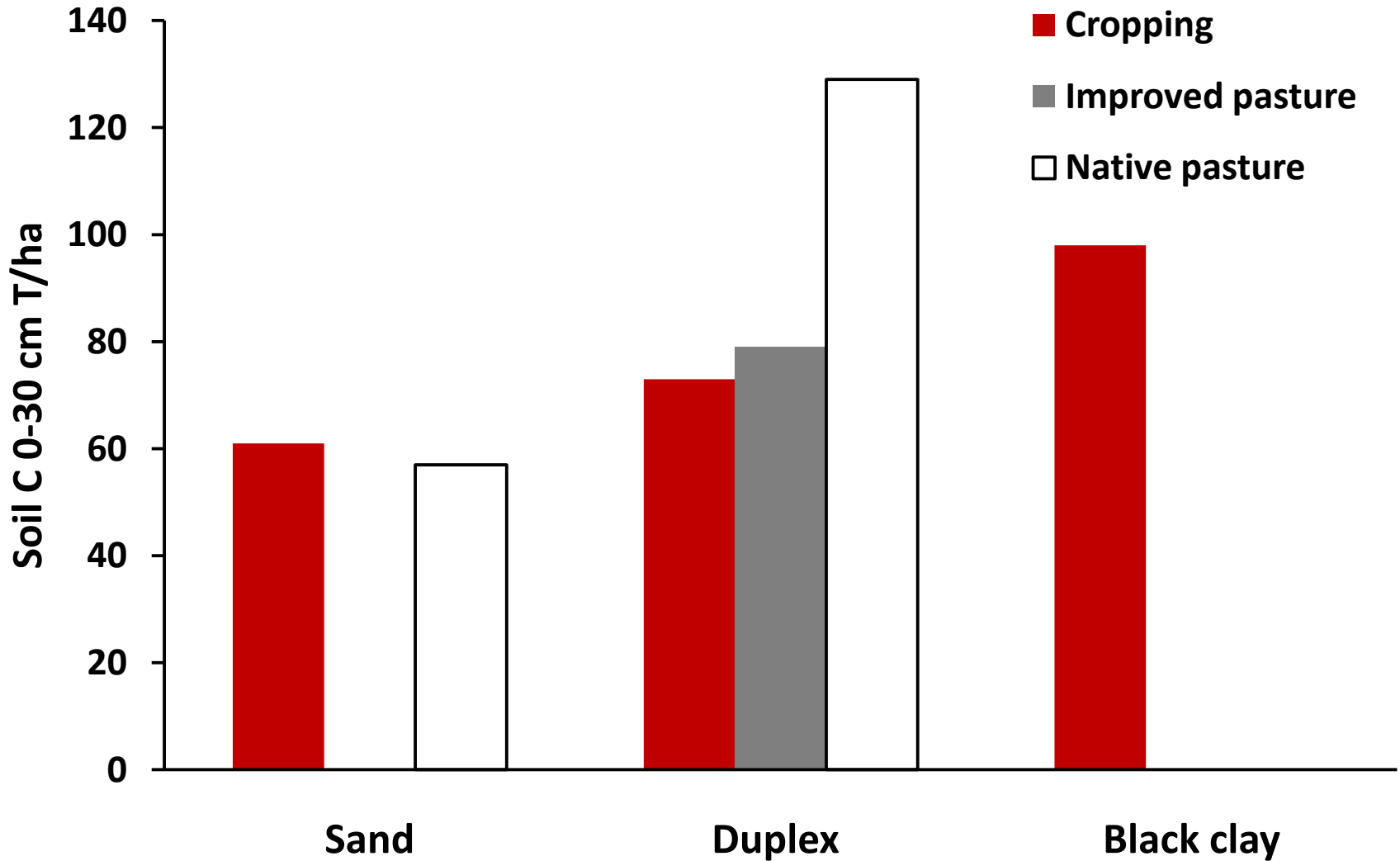
Cressy soil carbon 0 – 20 cm depth



North west soil carbon 0 – 10 cm depth



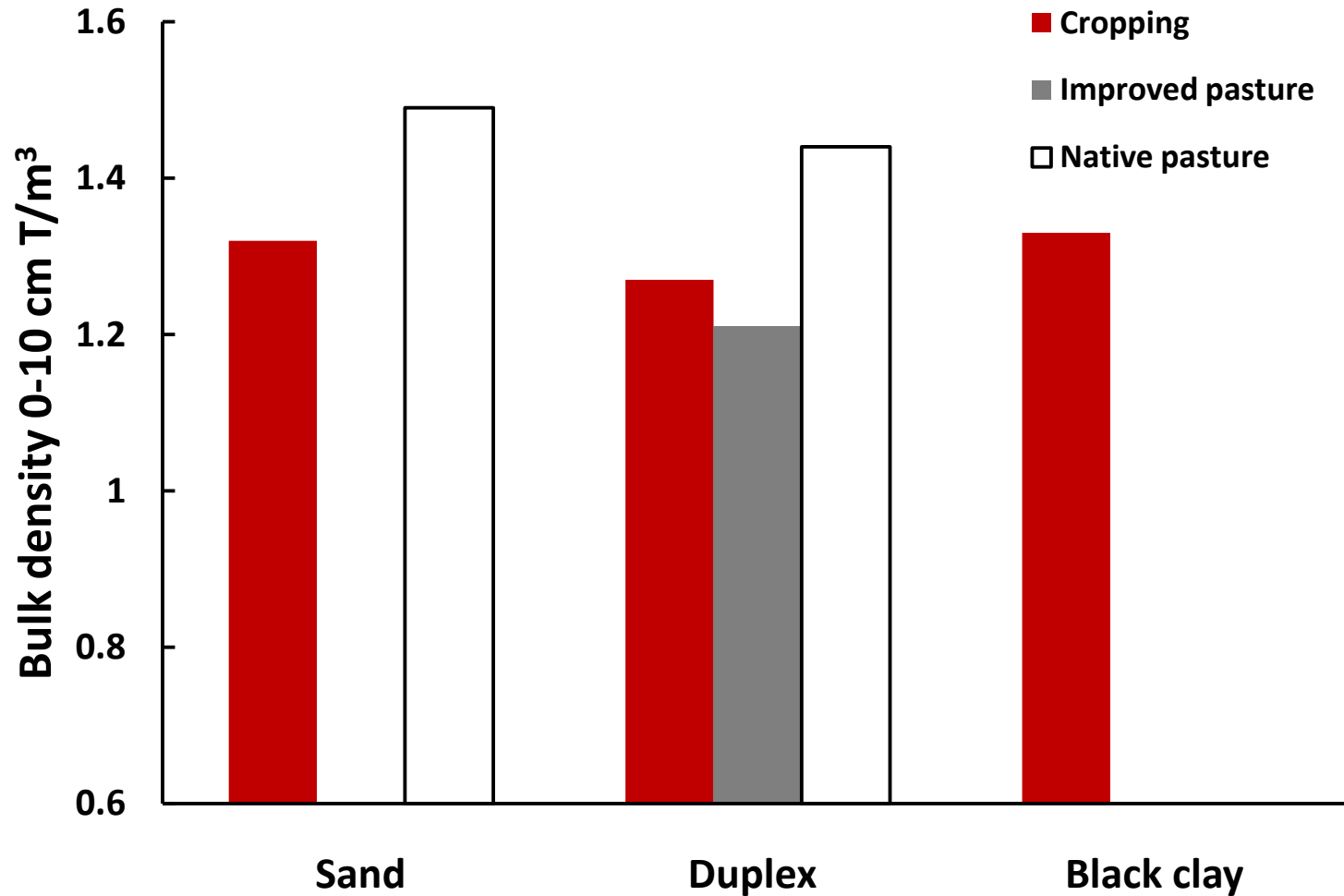
Carbon stocks in Cressy Group soils 0 – 30 cm



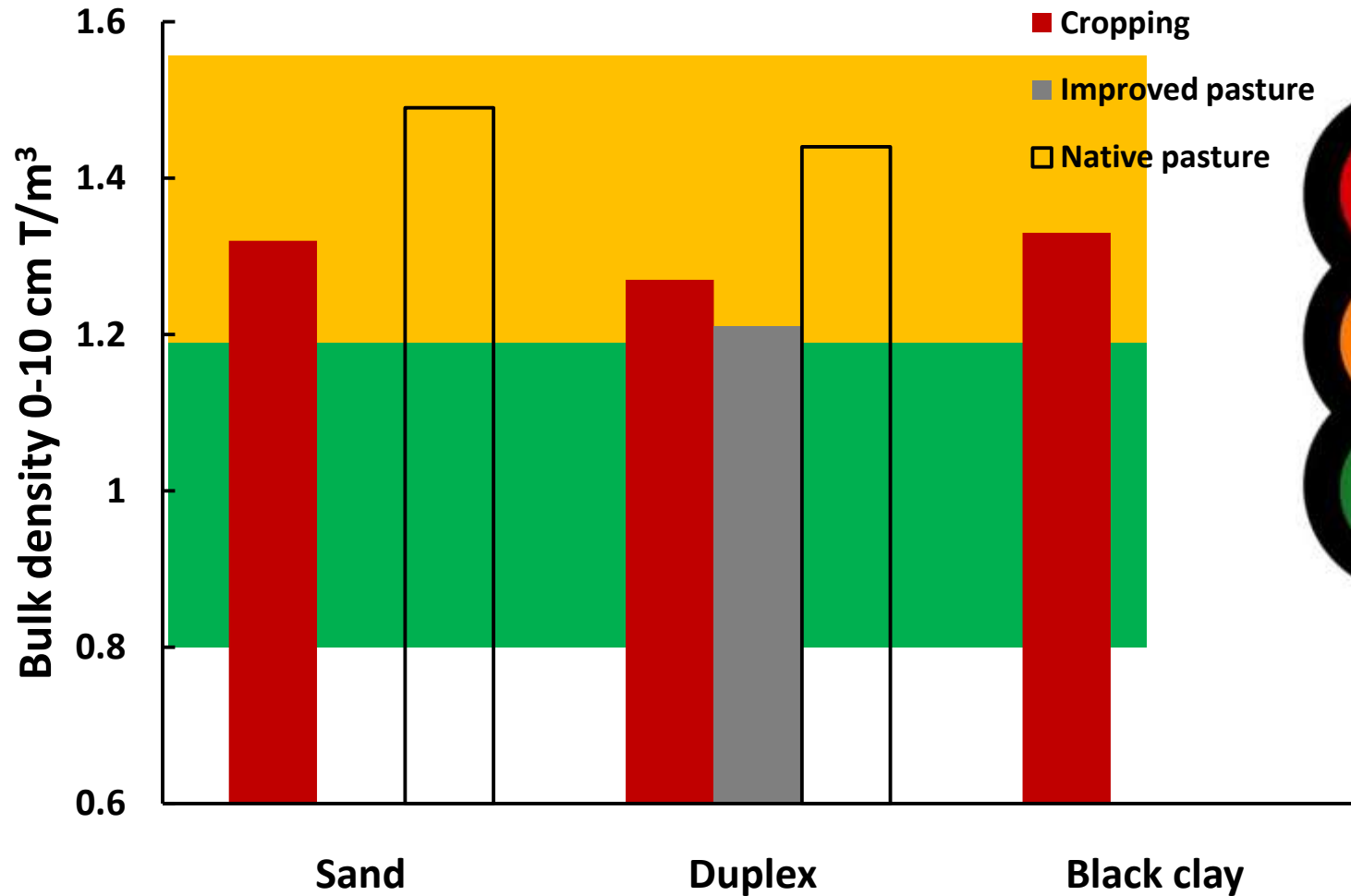
Carbon stocks - **Cressy soils (in red)** v's Tasmania (Tonnes Carbon/ha 0-30 cm depth)

Soil order	Dryland pasture	Intensive cropping	Native pasture
Sand	79	54 (61)	nd (57)
Duplex	126 (79)	60 (73)	nd (129)
Black clay	112	93 (98)	

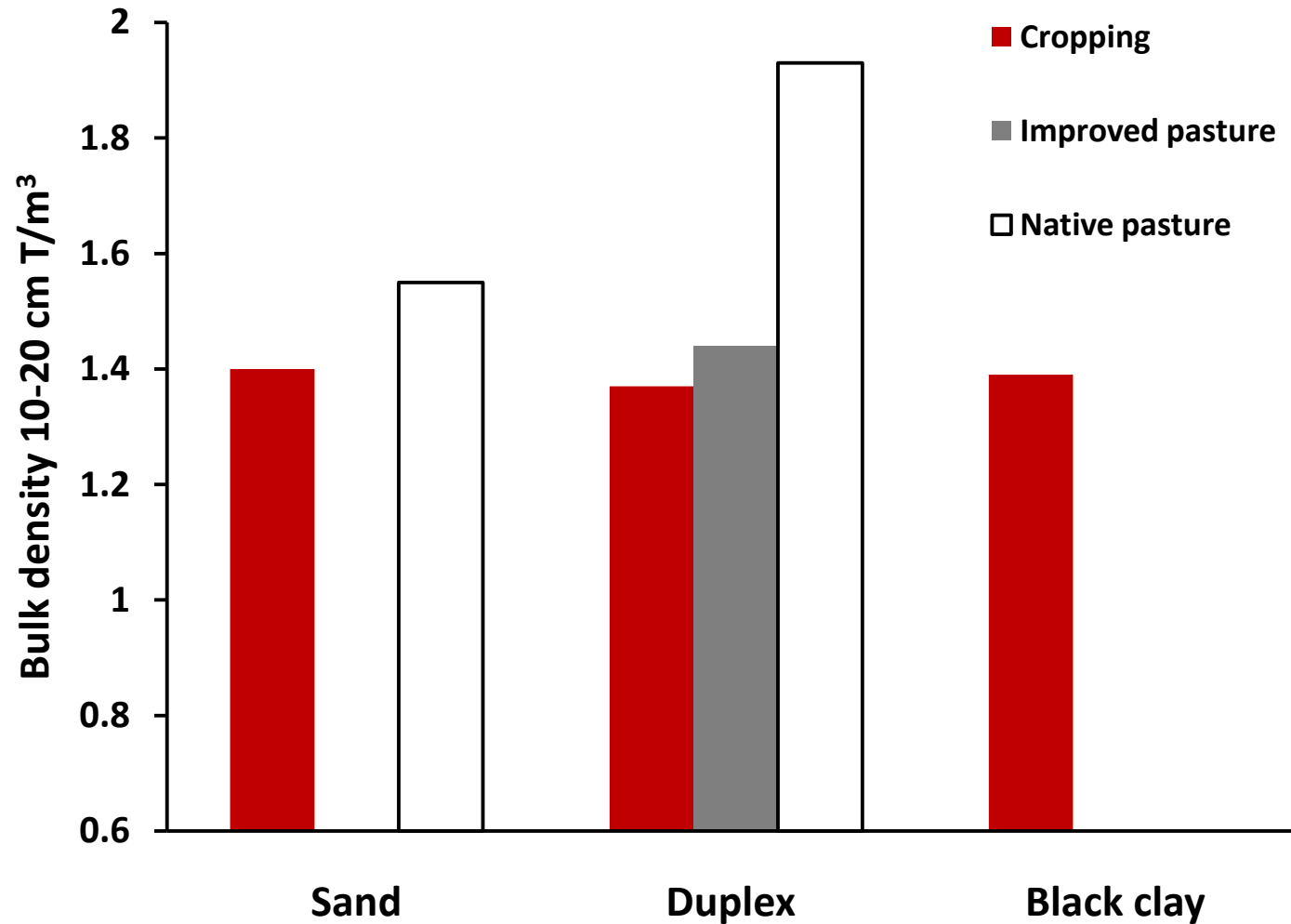
Cressy bulk density 0 – 10 cm depth



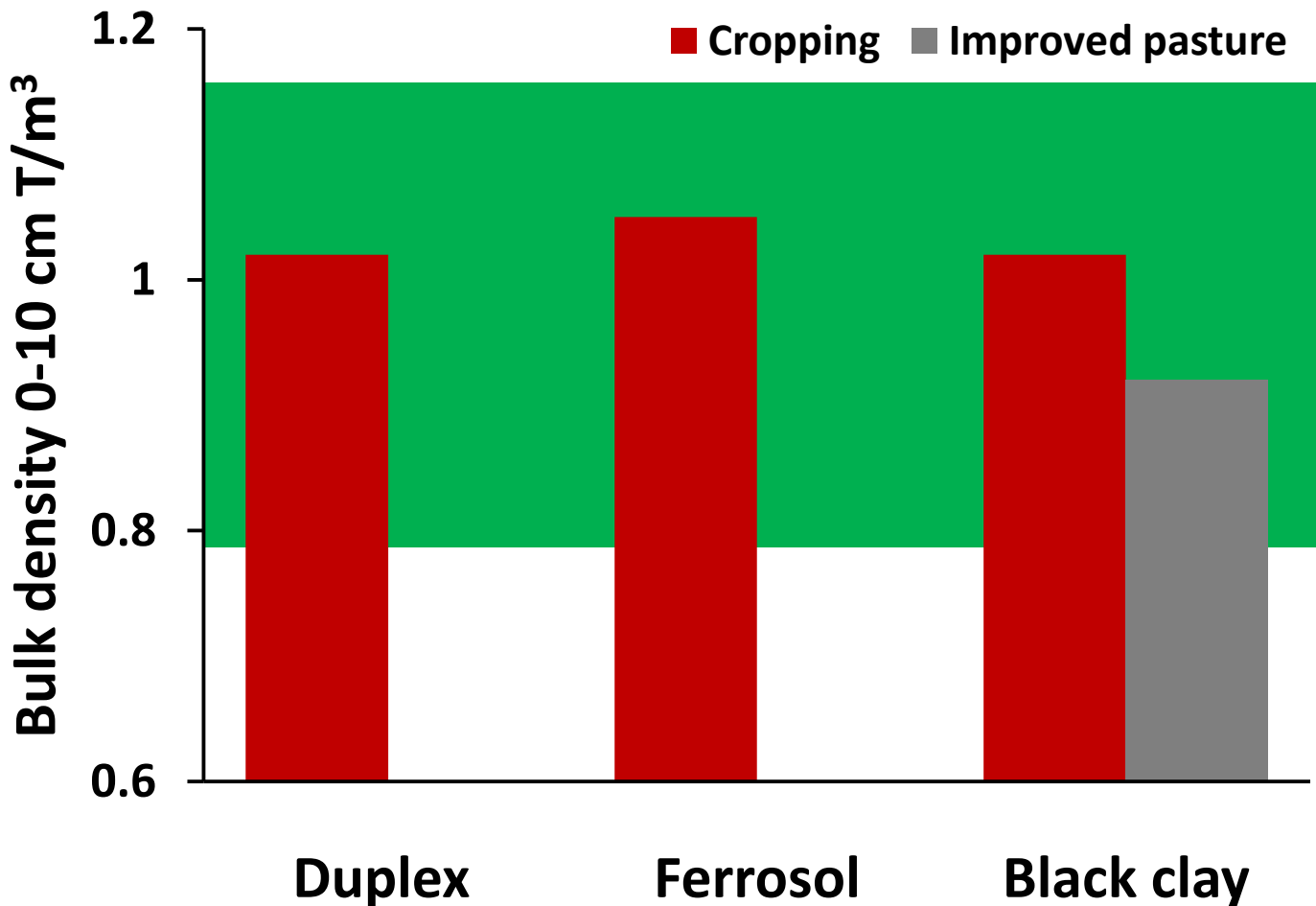
Cressy bulk density 0 – 10 cm depth



Cressy bulk density 10 – 20 cm depth



North west bulk density 0 – 10 cm depth



Summary of soil data

Carbon stocks under pasture are in average range

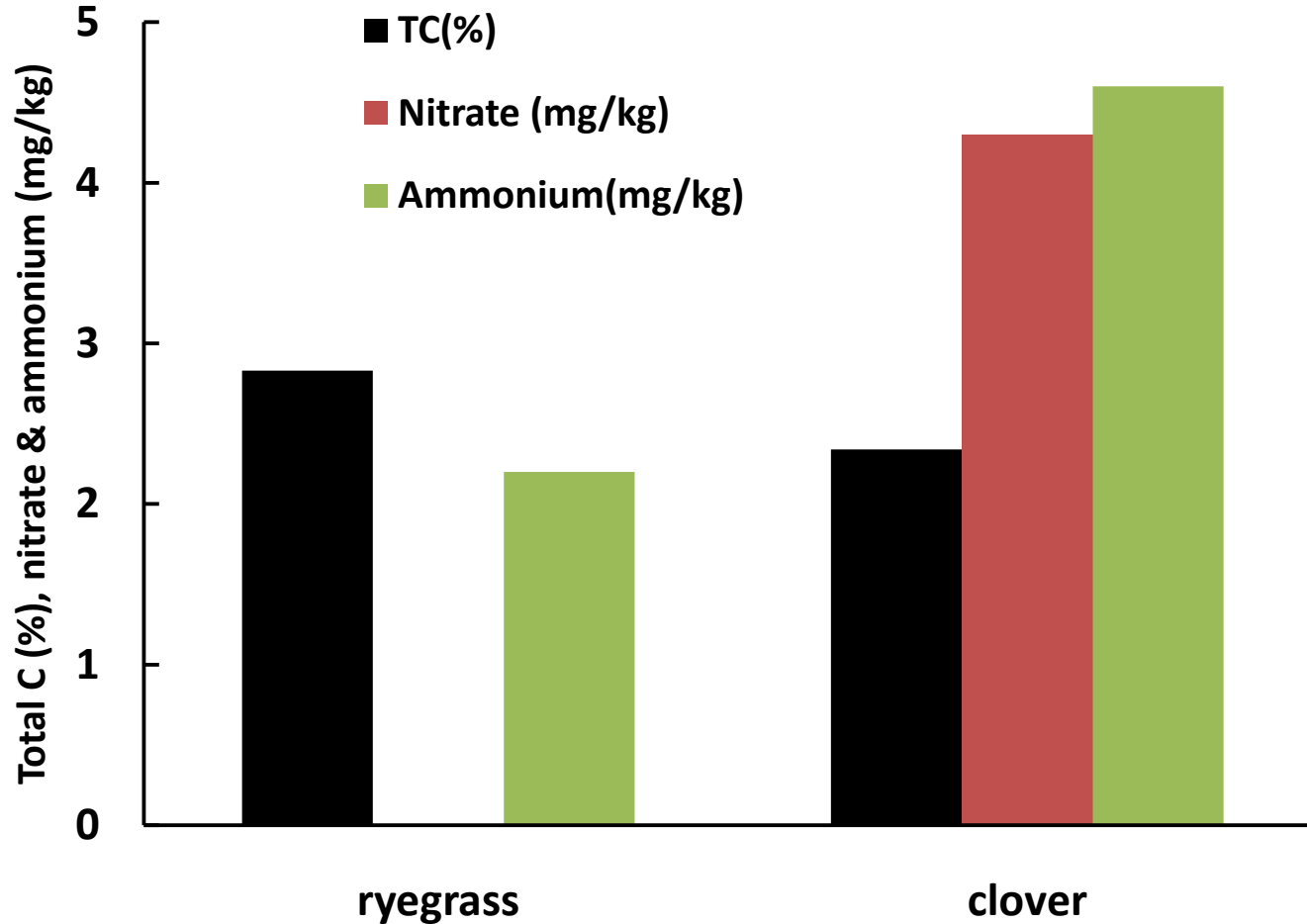
**Carbon stocks under cropping are holding up well
on all soils (both Cressy & Northwest)
but could decline further.**

**Bulk density is at critical levels on all Cressy soils
under all land uses.**

Nosswick - clover v's rye grass trial



Nosswick - clover v's rye grass trial

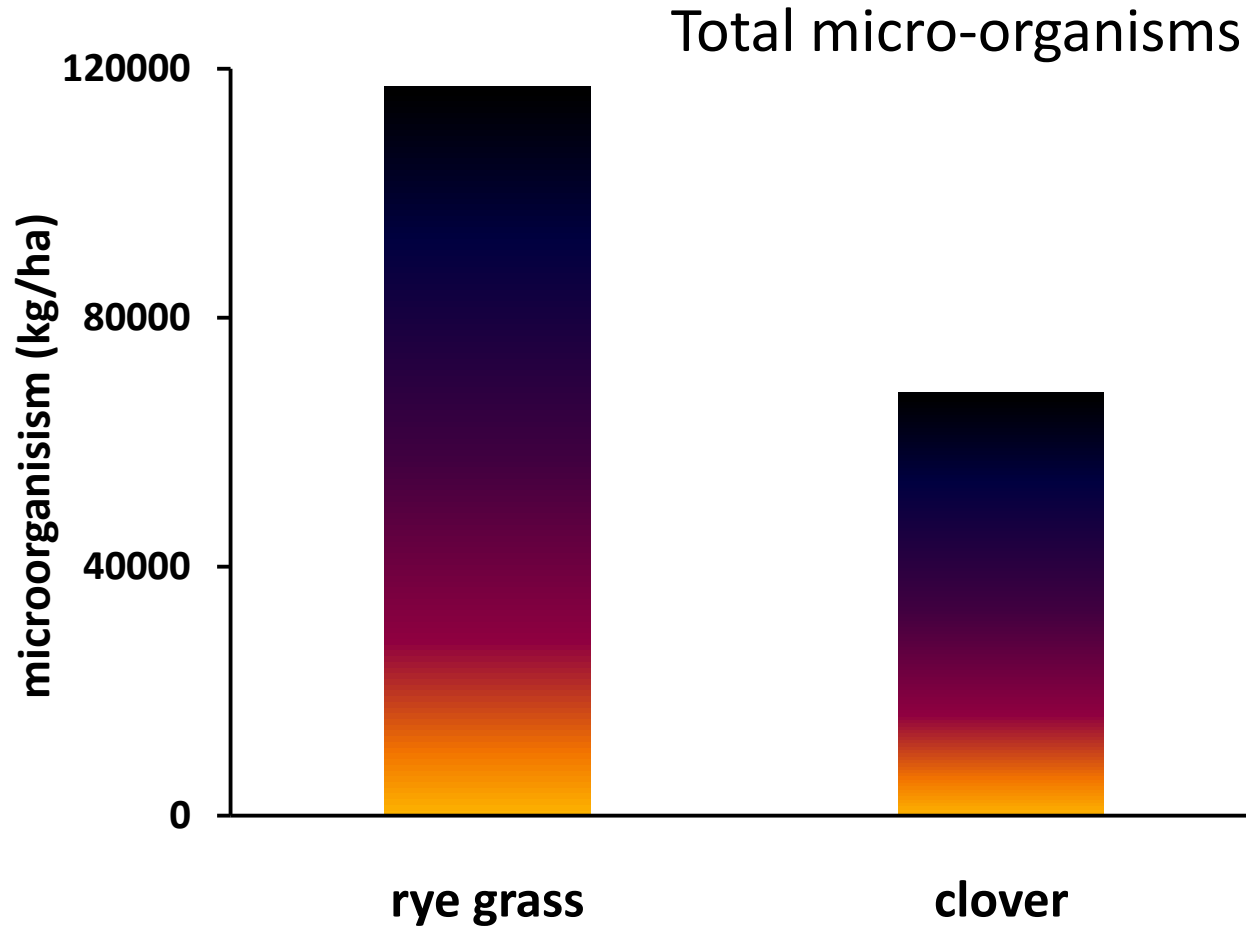


Clover had higher levels of plant available nitrogen

- ❖ rye grass is a very effective scavenger of N**
- ❖ clover is a very low user & fixes N**

- ❖ release of N from dead roots is delayed to winter and early spring**

Nosswick - clover v's rye grass trial



Kinburn & Lochiel Park amendment trials

poppy mulch (9 m³/ha) v's poppy meal (7 m³/ha)



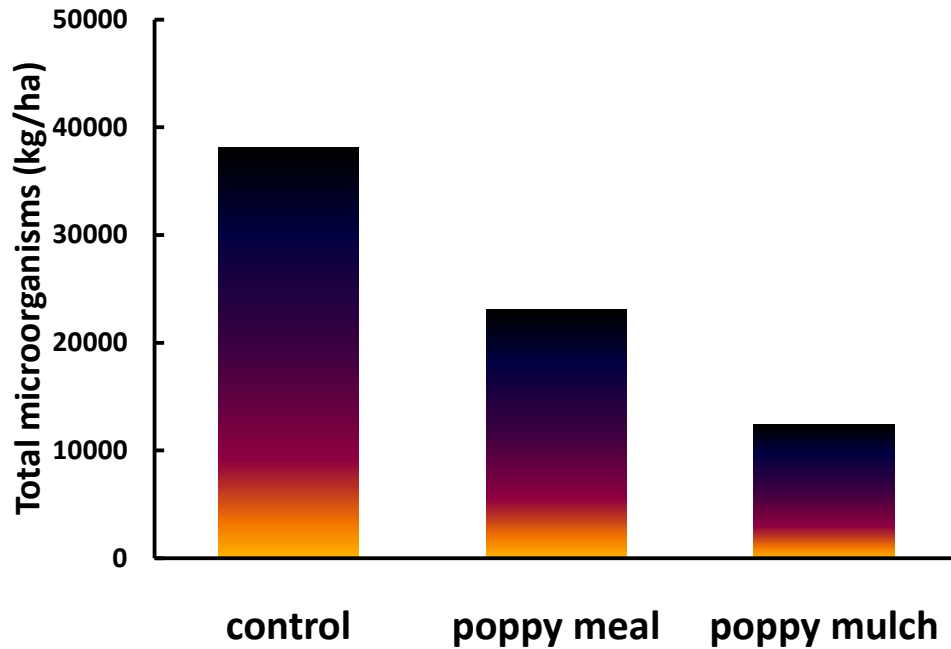
Lochiel Park amendment trial



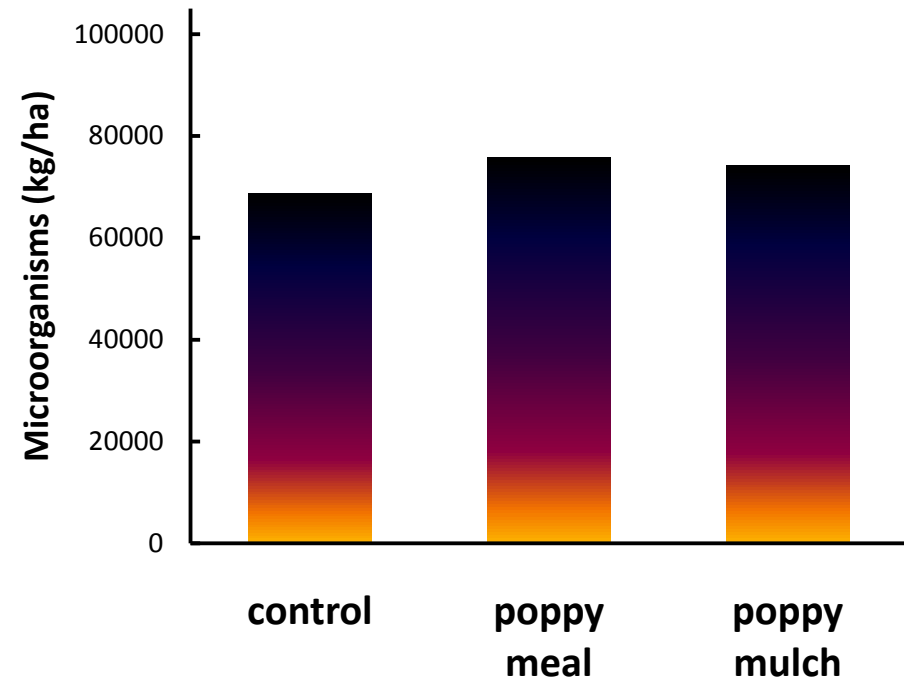
Treatment	OC(%)	pH (H2O)	P(mg/kg)	K(mg/kg)
Control	2.43	6.33	27.9	176.1
Poppy meal	2.32	6.35	42.4	250.4
Poppy mulch	2.34	6.59	41.7	250.9

Kinburn & Lochiel Park amendment trials

Kinburn - Total microorganisms

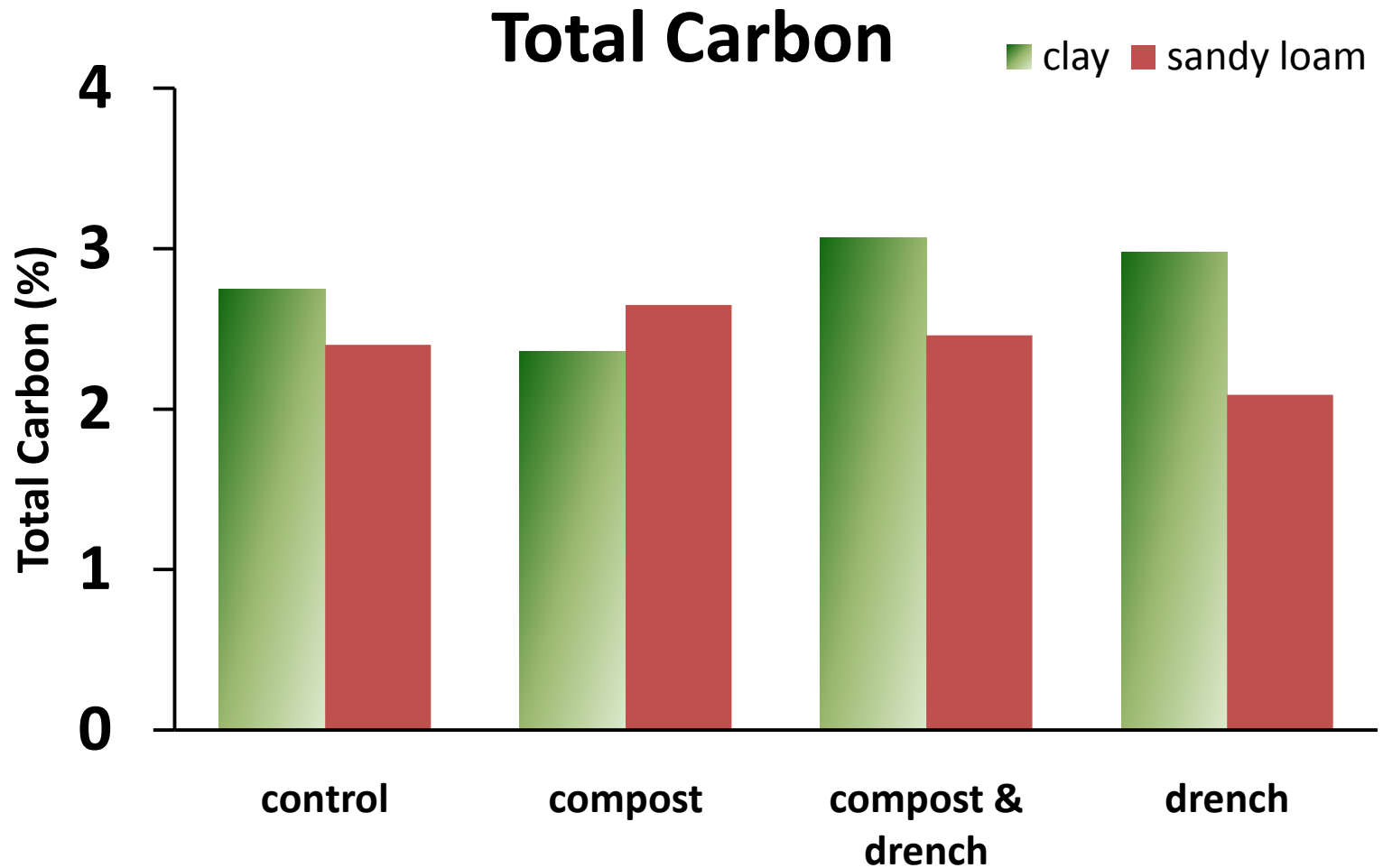


Lochiel Park - Total microorganisms



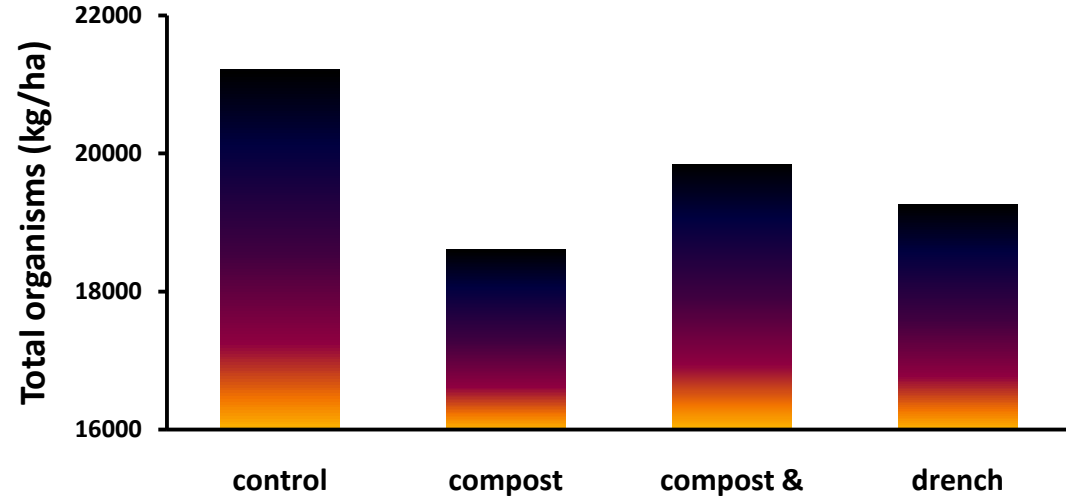
'Sand Park' trial

compost v's drench (fish oil + seaweed + molasses)

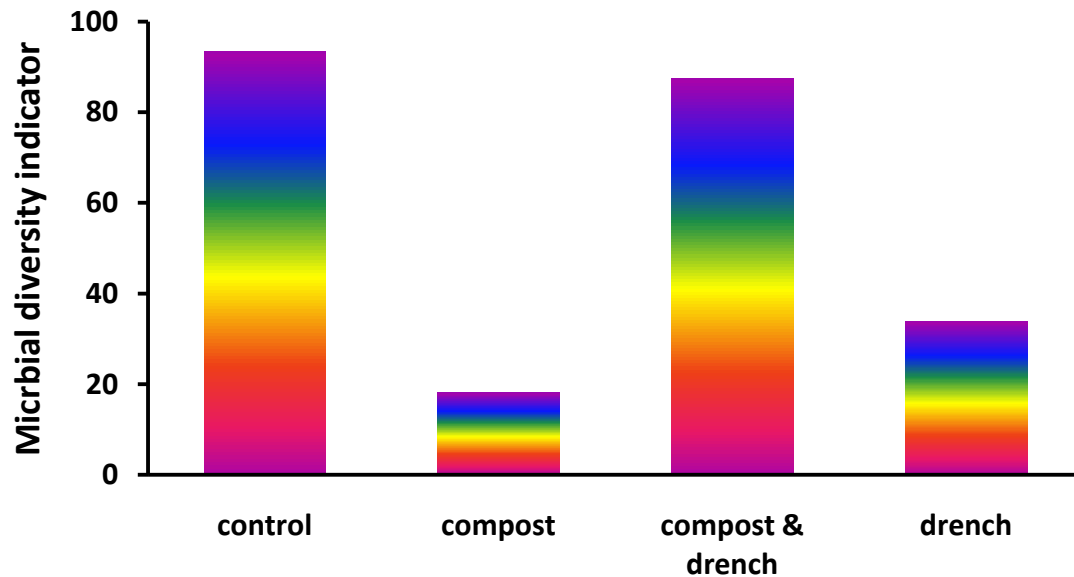


'Sand Park' trial

Total microorganisms



Microbial diversity



Summary of trial results

Different soils respond differently to treatments

“Mixed” trial results from different amendments

- ❖ They don't all work all the time
- ❖ Some work some times!

Adding organic matter increases microbe No's & diversity

You can grown lots of organic matter

No silver bullets (magic mix) for improving soil health

- it all comes back to management of soils and rotations



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**THANK
YOU**

THANK
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