



Monitoring pasture productivity on Karma Waters

Climate Clever Beef

It is estimated the beef industry is contributing 79% of greenhouse gas (GHG) emissions produced by agricultural practices in Australia, mostly in the form of methane from livestock.

The Pedersen family on Karma Waters chose to participate in the Climate Clever Beef (CCB) project to, firstly, identify feasible and profitable herd and grazing practices on Karma Waters and, secondly, assess carbon farming options that may be available to extensive beef enterprises.

Branding, growth and death rates are not only the key profit drivers of any breeding business but directly influence total GHG emissions as well as emission intensity. On all extensive beef enterprises native pasture productivity directly influences these herd production efficiencies.

Stocking rate management and rotational wet season spelling maintain pasture composition and improve diet quality on Karma Waters.



A fixed pasture monitoring site was established in Black Snake paddock in 2005. Breeders have been rotated between Black Snake and Front Dam paddocks since 2009 so each area could receive a wet season spell every second year. Photos are taken each year at the end of the wet and dry seasons. Rainfall, native pasture composition, Stylo establishment, ground cover, stock management, and fire frequency are also recorded.



Image 1. Black Snake paddock near dam,
3 February 2005.



Image 2. Black Snake paddock near dam,
29 October 2005.

Soils

- Ironbark/Ironwood-Shaley soils

Pastures

- Ground cover approximately 35%
- 40% fire grass
- 40% herbage
- 10% native sorghum
- 10% other

Season

- 27" of rainfall from October 2004 to February 2005

Comments

- Stocked

Season

- Not a good year for rain; 5" of rainfall from February to October 2005

Comments

- Stocked



**Image 3. Black Snake paddock near dam,
30 March 2006.**

Pastures

- Ground cover 35%
- 50% herbage
- 20% fire grass
- 20% native sorghum
- 10% Verano, Seca, white spear grass and black spear grass

Season

- Late start to wet; 26" of rainfall from November 2005 to March 2006

Comments

- Stocked
- This site taking longer than others to rehab due to close proximity to dam



Image 4. Black Snake paddock near dam, 17 April 2008.



Image 5. Black Snake paddock near dam, 30 December 2008.

Pastures

- Ground cover 70%
- 55% fire grass
- 10% black spear
- 10% giant spear
- 10% fire grass
- 10% Verano
- 5% native sorghum
- Blue tipped grass evident also—very palatable

Season

- 50" of rainfall from November 2007 to April 2008

Comments

- Destocked over the wet
- Not burnt
- Aerial seeded with Verano/Seca January 2008

Season

- 7" of rainfall from April to December 2008

Comments

- Destocked until end of September 2008 the stocked until the end of December 2008



Image 6. Black Snake paddock near dam, 13 April 2013.



Image 7. Black Snake paddock near dam, 1 December 2013.

Pastures

- Ground cover 80%
- 50% Verano, Seca
- 30% black spear, native sorghum, fire grass
- 10% weeds
- 10% herbage

Season

- Late start to wet; 26" of rainfall from mid-January to April 2013

Comments

- Locked up since September 2012, unburnt

Season

- 7" of rainfall from May to December 2013

Comments

- Stocked in August, unburnt

Further information

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