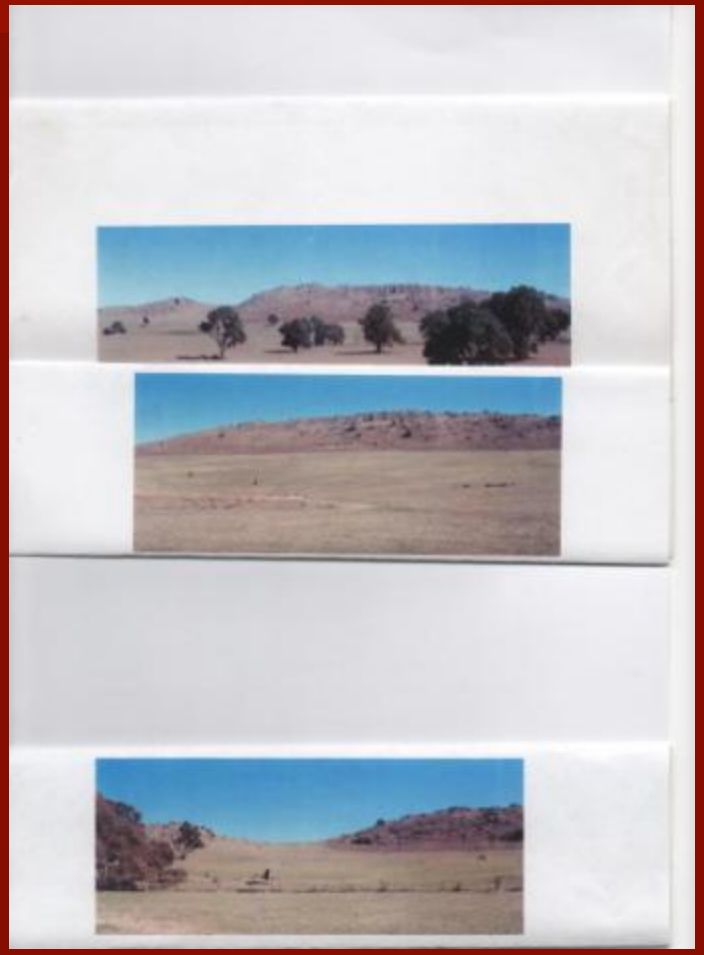
Peter & Christine Forster

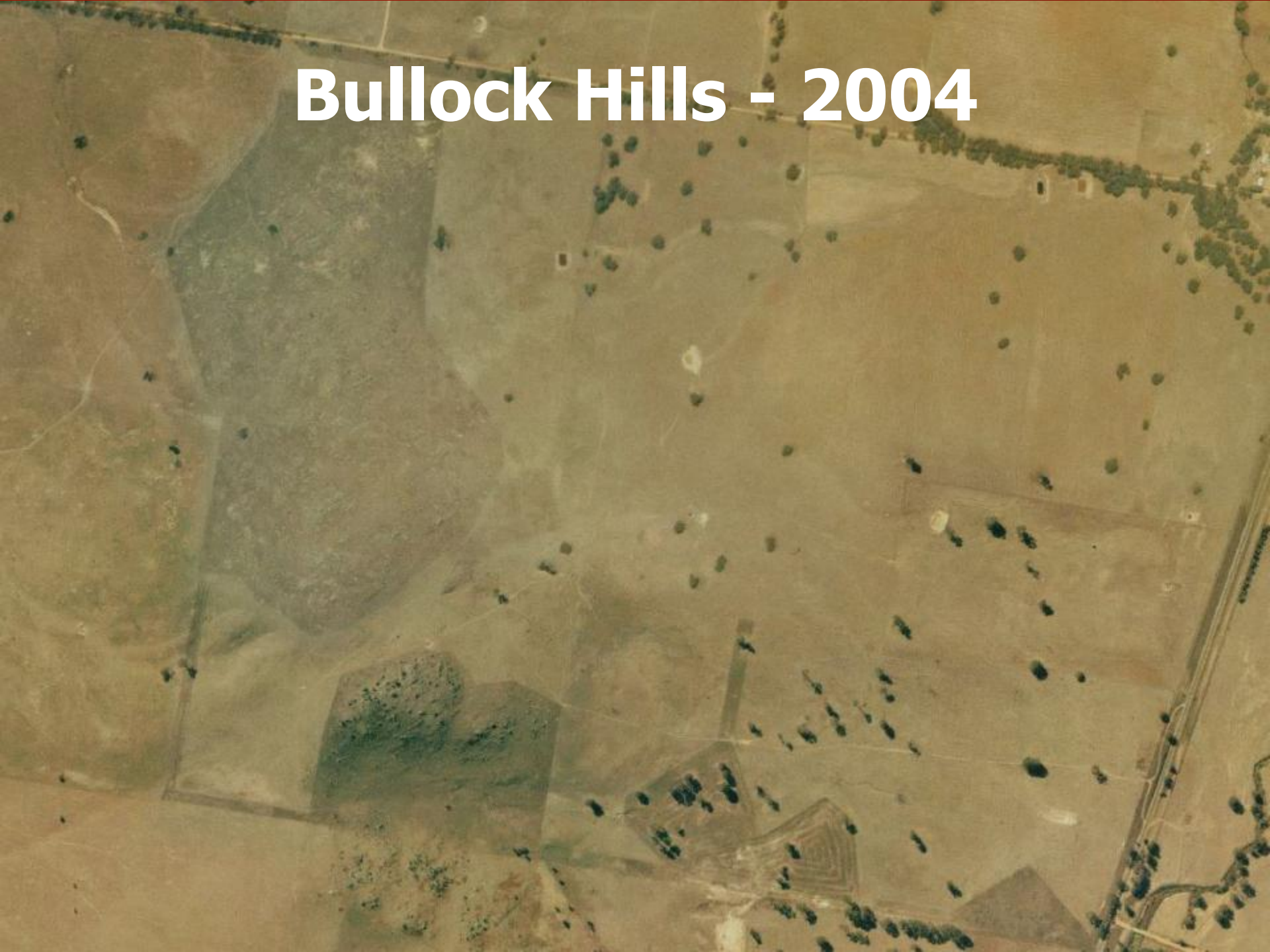
Carbon and Farm biodiversity plantings on the

Bullock Hills Ararat

Bullock Hills 2003

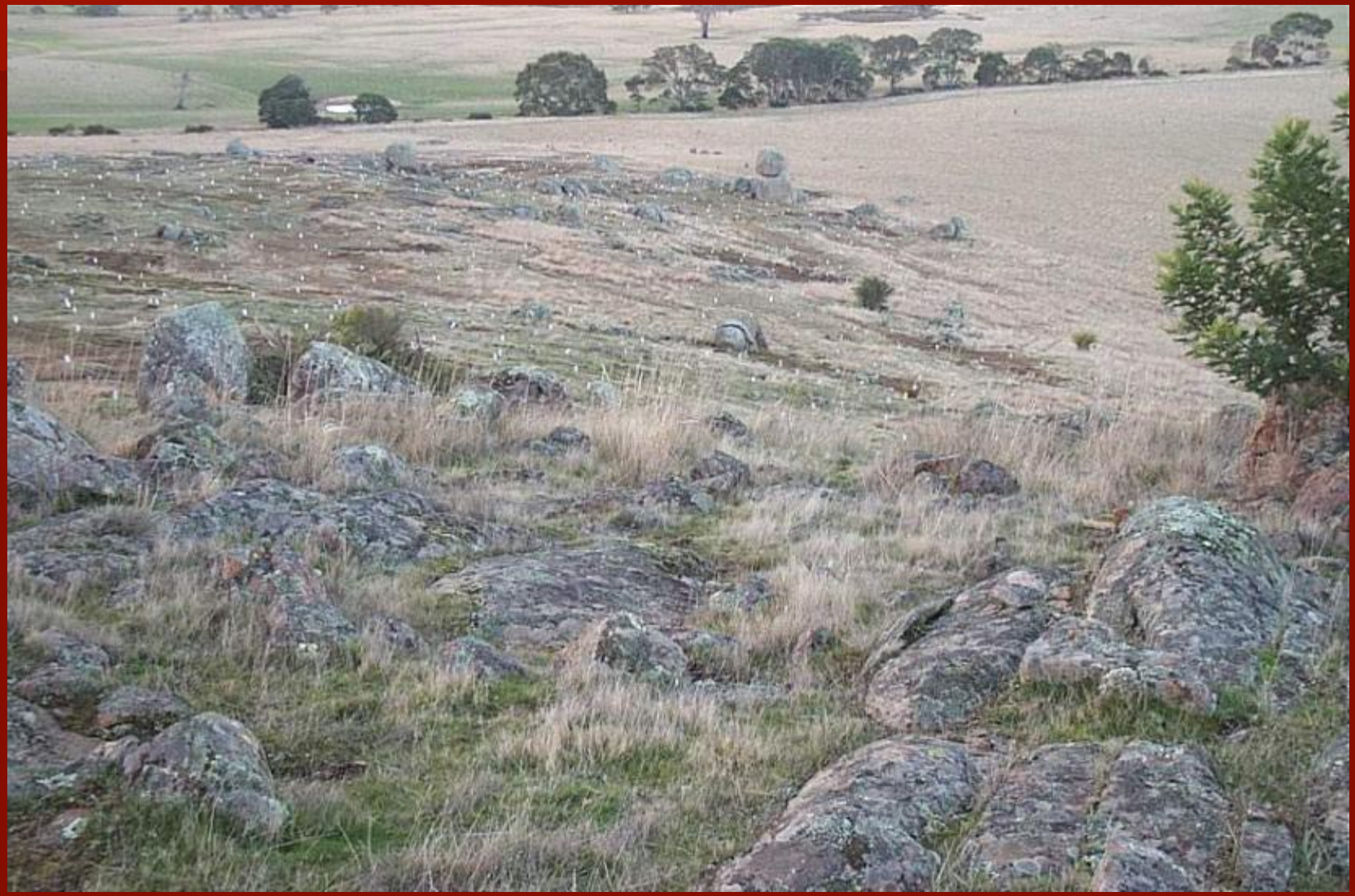


Bullock Hills - 2004

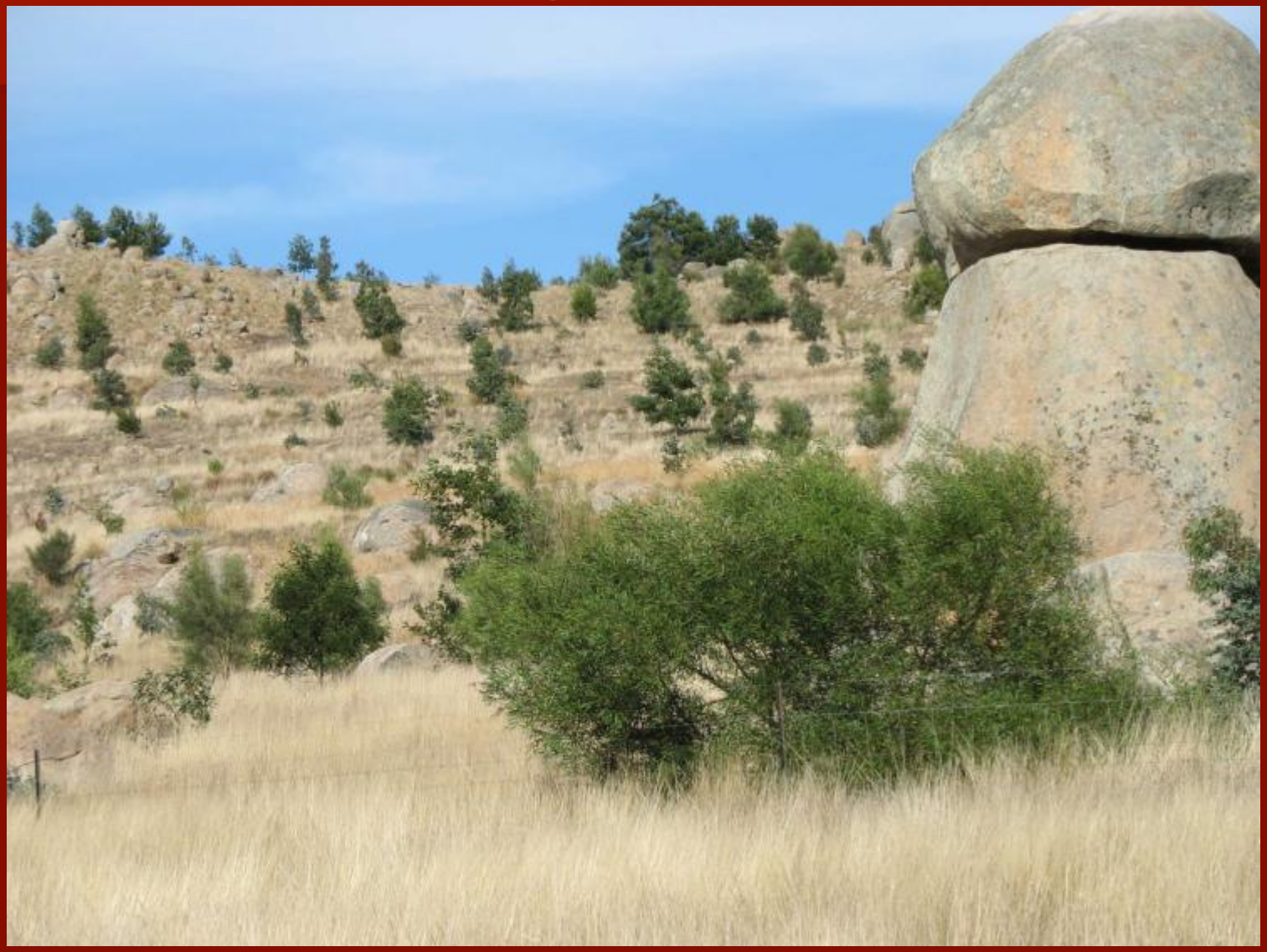


Bullock Hills

Bullock Hills



Bullock Hills



Bullock Hills

Sheep Sheltering

Bullock Hills

- On the Dividing Range 8 km south of Ararat
- Area 200 ha
- Rainfall about 550 mm…may be less
- Geology Granite
- Soils are granite based sand and sandy loam
- Enterprises Cereal Cropping (very low slopes), grazing, farm forestry, vegetation offsets (bush broker) and carbon offsets!

Our Plantings

- Mostly partnerships with Government grants (NHT, Envirofund, Glenelg Hopkins CMA PP's)
- Tubestock on rocks and direct seeding where possible
- Local native species
- Eucalypts - red gums, yellow box, yellow gum, manna gum, scent bark, messmate, red box
- Acacias – lightwood, black, silver, golden, blackwood and hedge
- Casuarinas – drooping and slaty she-oak
- Granitic soils/geology gives more species choice than basalt volcanic plains soil types

Carbon Farming Initiative

- Has Coalition support
- Is generating research that will benefit agriculture
- Will transform how we farm and manage land, encourages innovation, nation wide
- Has many forms (savannah burning, pest animal control, growing trees, animal nutrition, carbon sequestration in soils, methane capture and use etc)

Approved CFI Methodologies

- Environmental Plantings of native species
- Savannah burning
- Methane capture and use - piggeries
- Methane capture and use – legacy waste (landfill)
- Human induced regeneration of permanent even aged native forest
- Destruction of methane generated from dairy manure in covered anaerobic ponds

Positive List

- Approved methodologies have activities on the positive list
- It is a register of abatement activities eligible to earn carbon credits; eg
- Recreating drained wetlands
- Permanent plantings, reforestation
- Human induced regeneration
- Feral animal control
- Methane capture and use
- Small scale farm forestry
- Protecting forests

New draft regulations

- Activities covered by new regulations are:
- feeding fats or oils to livestock that are pasture-grazed year-round
- feeding nitrate supplements to any livestock
- pyrolysis of livestock manure
- use of selective breeding to improve livestock feed use efficiency, and
- increasing long rotation hardwood plantations.

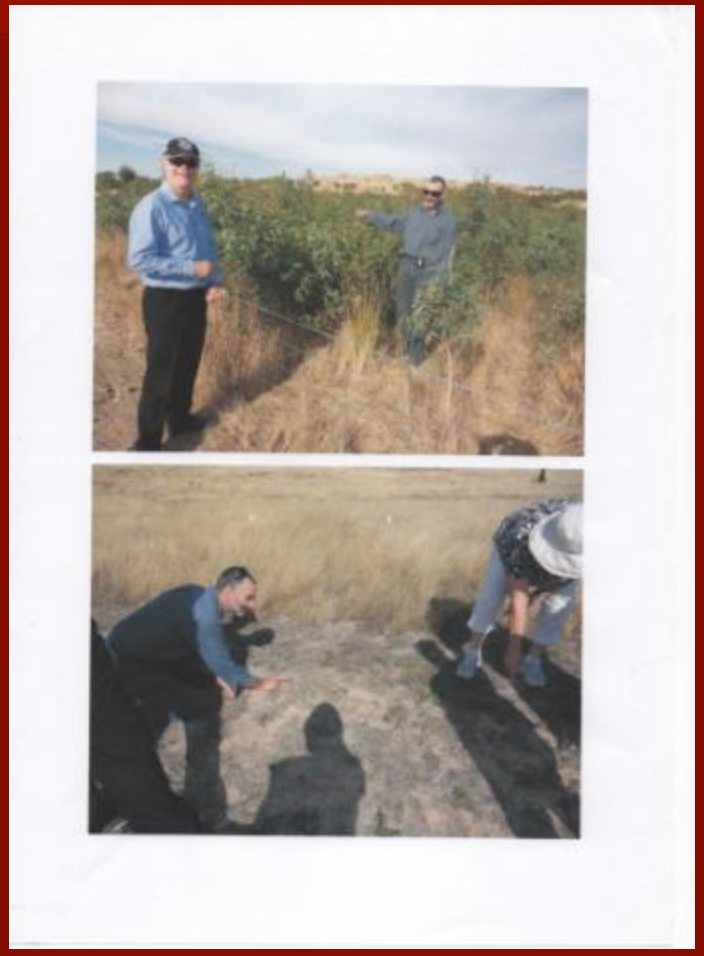
Methodologies under consultation

- Feeding dietary additives to milking cows
- Diverting legacy waste through an enclosed aerobic composting alternative waste treatment plant

Domestic Offsets Integrity Committee

- Approve new methodologies
- Methodology then approved by Minister for Climate Change and Energy Efficiency
- CFI Legislation
- Administered by Clean Energy Regulator (CER)

Clean Energy Regulator visit



Mark Dreyfus inspecting the first Vic “environmental plantings” carbon farm

CFI Environmental Plantings Requirements

- Formerly cleared or partially cleared for 5 years
- Would not revert to forest if not farmed
- Local native species
- Patch size 0.2 ha or greater
- Potential crown cover of at least 20%
- Potential height of at least 2 metres

Why Carbon Farm?

- Suitable for marginal farm land
- Low cost once established
- Conversely low returns compared with traditional farming
- Suits older farmers (not handling sheep)
- Provides other ecosystem benefits
- 100 year rule protects plantings
- Once established allows for controlled grazing

Potential Returns and Establishment Costs

- Rainfall and soil type dependent
- 4.5 tonne carbon/ha @ $22/tonne=$99/ha
- Traditional farming 7.5 dse/ha Wool GM $240/ha, prime lambs higher GM.
- Direct seeding is very cost effective especially if you collect own seed. Cost is weed control, seeder hire and some diesel. $60-80/ha. Tubestock x10.

Carbon Offsets or Carbon Credits must be

- Measurable
- Verifiable
- Additional
- Permanent
- The easiest and most measurable way of sequestering carbon is by growing shrubs/ trees.

CFI allows

- ancilliary benefits can include enhancement of biodiversity, alleviation of dryland salinity, reduced wind and/or water erosion and in limited circumstances shade and shelter for livestock.
- The methodology is designed to provide broad geographical coverage and be easily implemented at comparatively low cost; consequently the methodology takes a conservative approach to estimating abatement.

Steps to Register for CFI

- Application for Recognition as an Offsets Entity (ROE)- includes opening an Australian National Registry of Emissions Units (ANREU) account.
- Application for an Eligible Offsets Project (EOP). Use online Reforestation Modelling Tool (RMT) to map sites or CEA's (carbon estimation areas). Create Model points and exclusion areas, CEA's need to be same aspect, soil type, title. Stratification.

Steps continued

- Undertake an approved project
- Submit offsets and audit reports using the RMT and an independent accredited auditor.
- Apply for credits
- Credits issued
- Project closure (allows you to buy out)

Carbon Price

- First trade at $22/tonne. Price set for one more year at $24 and then likely to be international market price which is very low.
- Predicted that the price will drop and then rise above $24/tonne. The greater the emission cuts required the higher the price is likely to be.
- EC trades set the price internationally. Currently looking at increasing the price
- If impact of climate change worsens carbon price will rise
- Moving to an ETS/CPRS may dramatically reduce carbon price in short term

Australian Government
Department of Climate Change and Energy Efficiency

CFI Mapping Tool

Manage your Carbon Estimation Areas (CEA)

Carbon Estimation Area (CEA) Summary Report

19/08/2012

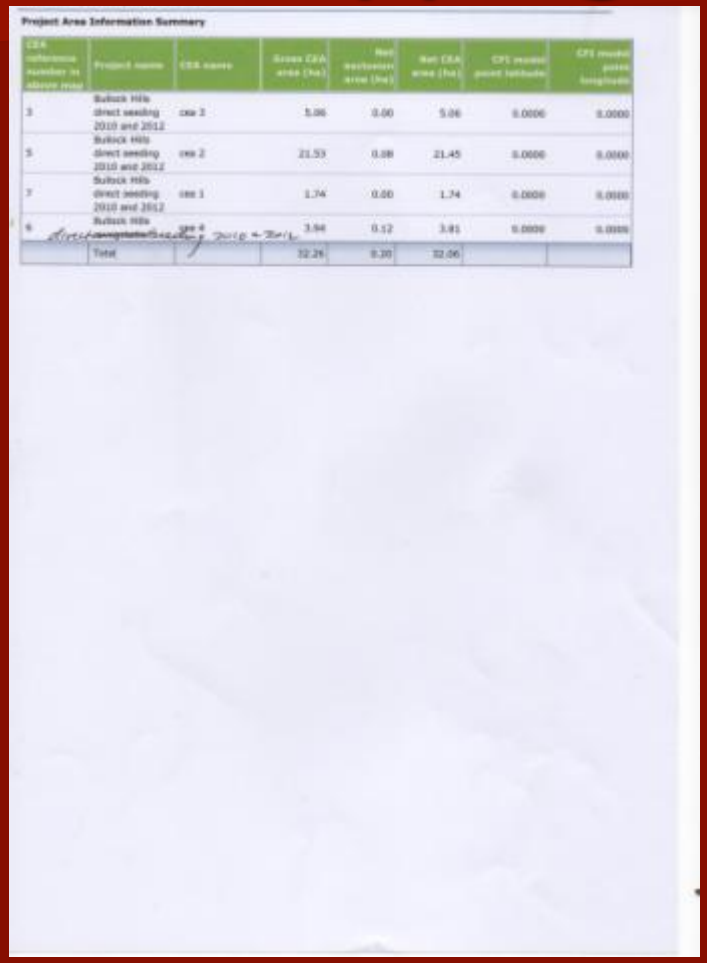
Legend: Carbon Estimation Area (CEA) Model point

Australian Government
Department of Climate Change and Energy Efficiency

CFI Mapping Tool

Manage your Carbon Estimation Areas (CEA)

Summary generated using online mapping tool



Project Area Information Summary

CEA reference number in above map	Project name	CEA name	Gross CEA area (ha)	Net exclusion area (ha)	Net CEA area (ha)	CFI model point latitude	CFI model point longitude
3	Bullock Hills direct seeding 2010 and 2012	cea 3	5.06	0.00	5.06	0.0000	0.0000
5	Bullock Hills direct seeding 2010 and 2012	cea 2	21.53	0.08	21.45	0.0000	0.0000
7	Bullock Hills direct seeding 2010 and 2012	cea 1	1.74	0.00	1.74	0.0000	0.0000
6	Bullock Hills	cea 4	3.94	0.12	3.81	0.0000	0.0000
	Total		32.26	0.20	32.06		

2010 Direct Seeding

2012 Direct Seeding

Treeplanting 2012

Human induced natural regeneration

Benefits of Planting

- Carbon sequestration
- Sheep shade and shelter
- Salinity amelioration
- Biodiversity improved
- Subdivision effect – grazing pressure
- Microclimate created
- Personal amenity
- Protecting waterways and water quality

Soil Carbon

- Difficult to measure
- May be lost with prolonged drought/heat/ fire
- Government and industry researching this area
- Improves soil condition and water carrying capacity

ETS VS Direct Action

- Both major parties support CFI and CER and a 5% reduction in 2000 emissions.
- ETS caps carbon use and targets large users who will need to buy credits from registered carbon offset providers.
- Direct action (no carbon cap) purchases carbon credits by tender and is paid by taxpayers, cherry picks large users and offers incentives to reduce carbon use, invests in new technology.

Direct Action

- Carbon offsets purchasing fund will increase from $250 million in year 1.
- Reverse auction ie buy cheapest carbon offsets first until available pool funds exhausted.
- Heavy reliance on soil carbon sequestration to achieve targets but no methodology in pipeline or approved.

Websites

- http://www.climatechange.gov.au/reducing-carbon/carbon-farming-initiative/cfi-e-news
- www.climatechange.gov.au/cfi Federal Government
- www.carbonoffsetguide.com.au lists all traders
- www.climatechange.vic.gov.au Victorian Government
- www.maf.govt.nz/climatechange/ NZ's emissions trading scheme
- www.greenhouse.unimelb.edu.au/ click on "calculators" for a carbon toolkit for beef producers
- www.farminstitute.org.au an online gross margins and carbon calculator for various enterprise mixes is now available – click on green box RHS of front page
- www.cleanenergyregulator.gov.au
- www.cleanenergyfuture.gov.au

Some Carbon Traders

- Carbon Neutral (SA,WA,Vic)
- Beyond Neutral
- Greenfleet (Most States)
- Climate Postive (Australia)
- CO2 Australia (NSW, Vic, WA)
- Treesmart (Australia)
- Australian Carbon Traders
- Greenhouse Balanced (Australia)
- Westpac
- Tree Crop Technologies Pty Ltd

Burning paddock prior to seeding 2012

Why Carbon Smart

- Voluntary carbon market – transition to CPRS
- Only scheme for landholders to opt in with plantations established prior to 2008
- Plantations can be biodiverse
- Can trade in Voluntary and Government markets (choose highest price)
- If price low ($10/tonne) – permits can be banked till price lifts
- Backed by Landcare Australia - reputable
- Contract transferable if property sold
- 10 year contract with option to renew

CarbonSmart Process

- Landholder expression of interest
- Eligibility test
- Preliminary offer
- Title search
- Site assessment:maps, site history, size, location, habitat hectares, species, gps
- Forest rights agreement
- Title registration
- Carbon rights transferred to CarbonSmart
- Annual payments

Landholder management requirements

- Notify Carbon Smart of mining exploration
- Prevent removal of timber (fallen timber for landholder firewood ok)
- Control pest plants and animals
- Prevent overgrazing by domestic or native animals
- Maintain fences and gates, tracks
- Reduce fire hazards

Some Contract Details

- Annual payments
- Forest Property Agreement registered on title to ensure permanence and adequate maintenance
- Each site assessed for quality and carbon potential
- Across Australia CarbonSmart sites fix on average 5 tonnes /ha/year CO_2e
- Our sites on 121 ha are estimated to fix 500 tonnes per year, at $12/tonne to landholder yields $6000/annum

Advantages of a CarbonSmart Contract

- Diversifies farm income
- Guarantees protection of plantings – 100 years – equivalent to a covenant?
- Finances further plantings - Stock shelter, biodiversity, erosion and salinity control benefits
- Plantings improve farm value – visual amenity
- Covers catastrophic loss (pooling and 10% reserve)
- Encourages biodiverse planting – resilience
- Advice on management and reveg if needed
- Landholder stills owns Forestry timber rights

Disadvantages

- Low return per ha compared with traditional uses?
- Lower carbon fixing rate with a biodiverse planting compared with forest planting
- Landuse is fixed for planted sites
- Legally binding
- 100 year period
- Are their better deals?
- Impact on land value?
- Carbon price uncertainty until CPRS in place

Carbon Accounting

- Farm Institute has an online gross margin and carbon accounting tool for various enterprises
- 2500 Ewes, 1800 Merino Lambs, 500 wethers and 500 xbd lambs, 150 ha oats
- For our farm it estimated 720 tonnes CO2 equivalent (including 31 tonnes of methane)
- Of this total 662 tonnes was from the sheep
- 0.22 tonne/head or 0.11/dse
- Value at $20/tonne was $14 413
- Melbourne Uni accounting tool gave similar results

CarbonSmart

- Has a landholder web page with questions and answers
- 10 year agreement renewable
- Pools carbon reducing costs and risks
- Carbon rights registered to pool manager
- PAYG Pay as you Grow Scheme
- PAYS Pay as you Sow Scheme (being developed)
- Fire recovery fund to assist with revegetation

Greenfleet

- Approved abatement provider under Greenhouse Initiative
- Establishes the plantation
- 10 metre minimum width (prefers wider)
- 10 ha
- >400 mm annual rainfall
- Shares carbon after an initial amount of carbon sequestered

Captains Creek - 1971

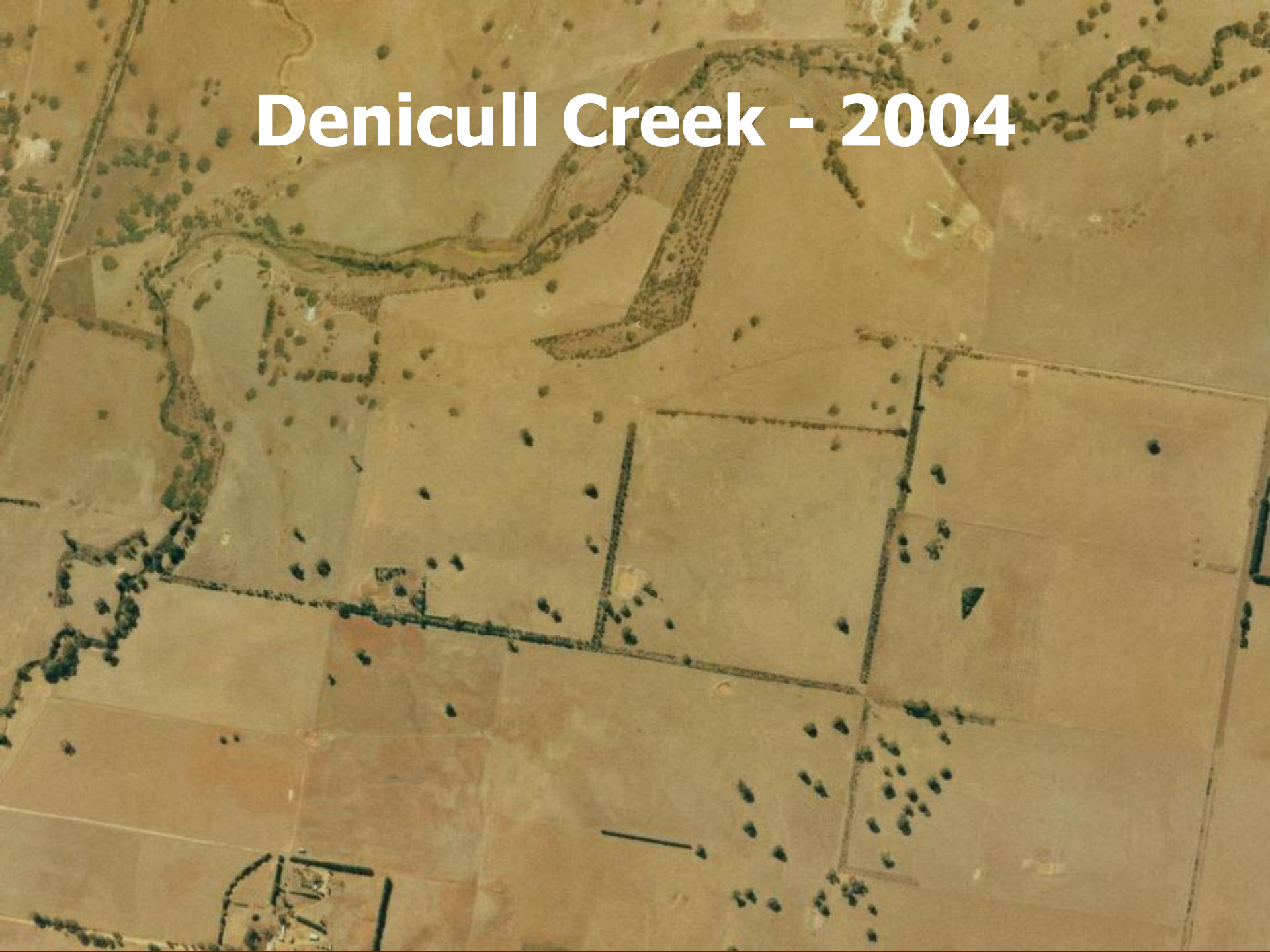
Captains Creek - 2004

Captains Creek 2010

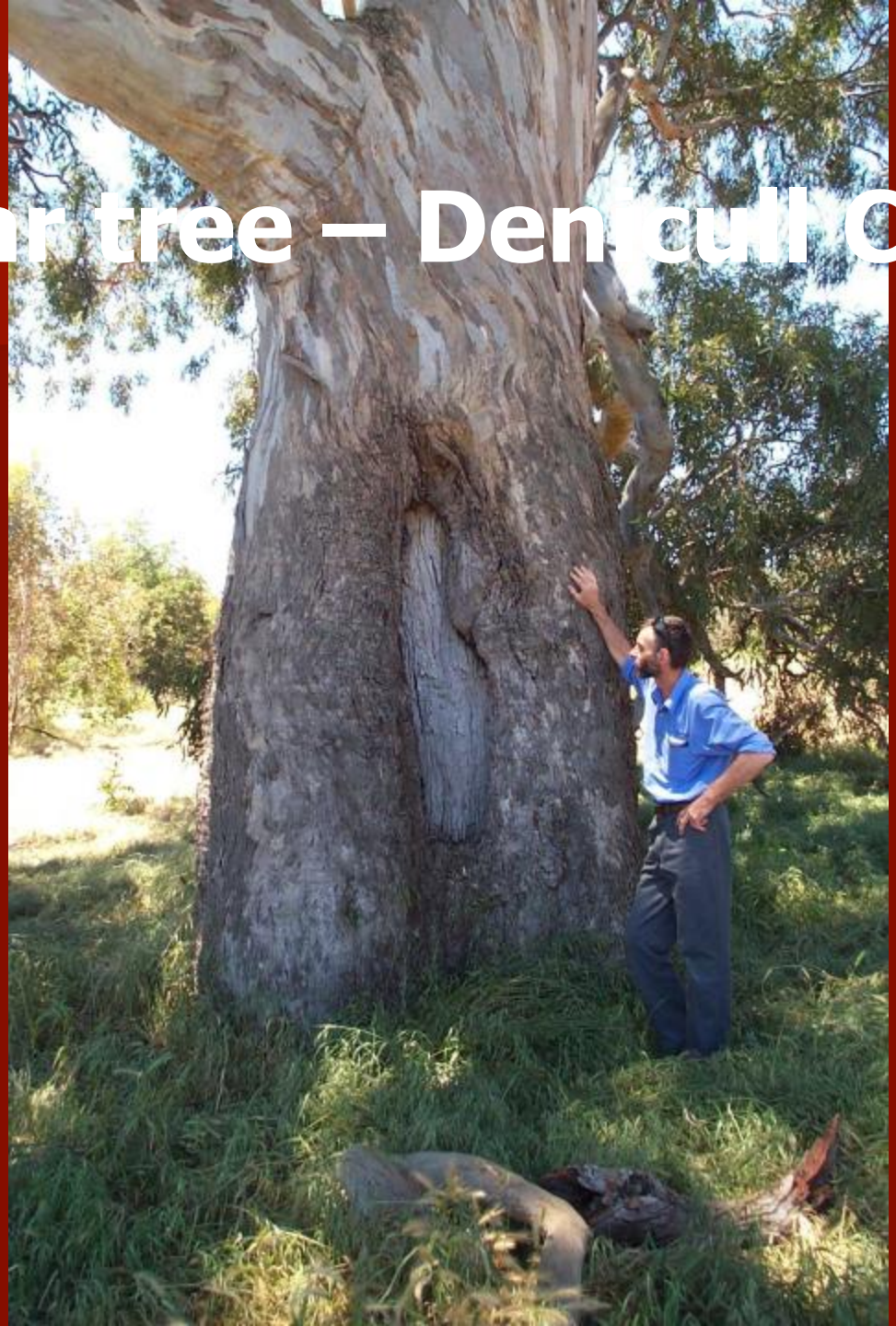
Denicull Creek - 1971

Sheep shelter Captains Creek

Captain's Creek


Denicull Creek - 2004

Scar tree – Denicull Creek



Bush Broker site Denicull Creek