

Issues arising from regional economic modelling: 2007 Water Act and all that

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Presentation at CGEworkshop,
17 October 2022

Context

- 2007 Water Act aimed to restore environmental flows in the Murray-Darling Basin
- Formation of Murray Darling Basin Authority
- Two main instruments:
 - (1) buyback of water rights from irrigators – liked by economists, dropped by Abbott 2013
 - (2) infrastructure upgrades
- Any hope of sensible policy destroyed by Nationals but they had plenty of company
- 2300 GL of water purchased so far: scientists recommended 3500 GL to 7500 GL for environmental flows – revised target 2750 GL

River People's Forum

September 2

- Swan Hill community members want to see water returned to flood plains
- Little water since the mid 1990s despite several wet years amid severe drought – dying trees and disappearing bird life



Sustainable Living in the Mallee - SLIM

12 September · 🌐

On September 2nd 2022 the [#riverpeoplesforumswanhill](#) was held on the banks of the Marraboor River, at its junction with the Murray River. People attended from all over the Murray Darling Basin and as the river levels rose so did voices demanding Respect for Rivers and Integrity in Water Management. People calling for more transparency, less nonsense, less rorting and a fairer deal for mid Murray floodplains. More outcomes from the day will be

Disallowed for a fourth time

By [Contributed](#)
Oct 9, 2022



Independent Member for Murray Helen Dalton.

In what has surely got to be some sort of parliamentary record, the National Party's floodplain harvesting (FPH) regulation has been disallowed for the fourth time by the NSW Upper House.

Independent Member for Murray Helen Dalton is unsure what it will take for the National Party to realise the impacts this detrimental regulation has on southern basin communities, First Nations people, environment and river health.

Professor Jamie Pittock, Fenner School of Environment and Society at The Australian National University. Member of the Wentworth Group of Concerned Scientists.

Dr. Matt Colloff, Fenner School of Environment and Society, Australian National University. His position at CSIRO became untenable when he led a project which showed in an easy-to-follow format that 2800 GL of environment flows were inadequate – the MDBA threatened not to pay CSIRO.

Dr. Bruce Lindsay, Environmental Justice Australia

Maryanne Slattery, Slattery&Johnson Water Consultancy. Her research exposing the maladministration of the Murray-Darling Basin Plan, including the Watergate scandal, large scale water theft and the demise of the Darling River in particular, called into question the mismanagement of the Murray-Darling Basin well before the unprecedented Menindee fish kill of January 2019.

Bill Johnson is a Director of Slattery and Johnson.

Greg Ogle has lived around Tooleybuc and the Koraleigh Lakes for over 60 years and now owns a property on Lake Poomah.

Nicole McKay Councillor with Swan Hill Rural City Council and a midwife/healthcare professional.

John Pettigrew is a retired Goulburn Valley fruit grower.

Graeme Nalder is a farmer in junction of Niemur and Wakool River and also a tourism operator for 20 years (cabins, boat cruises and museum)







SA3 regions of MDB:

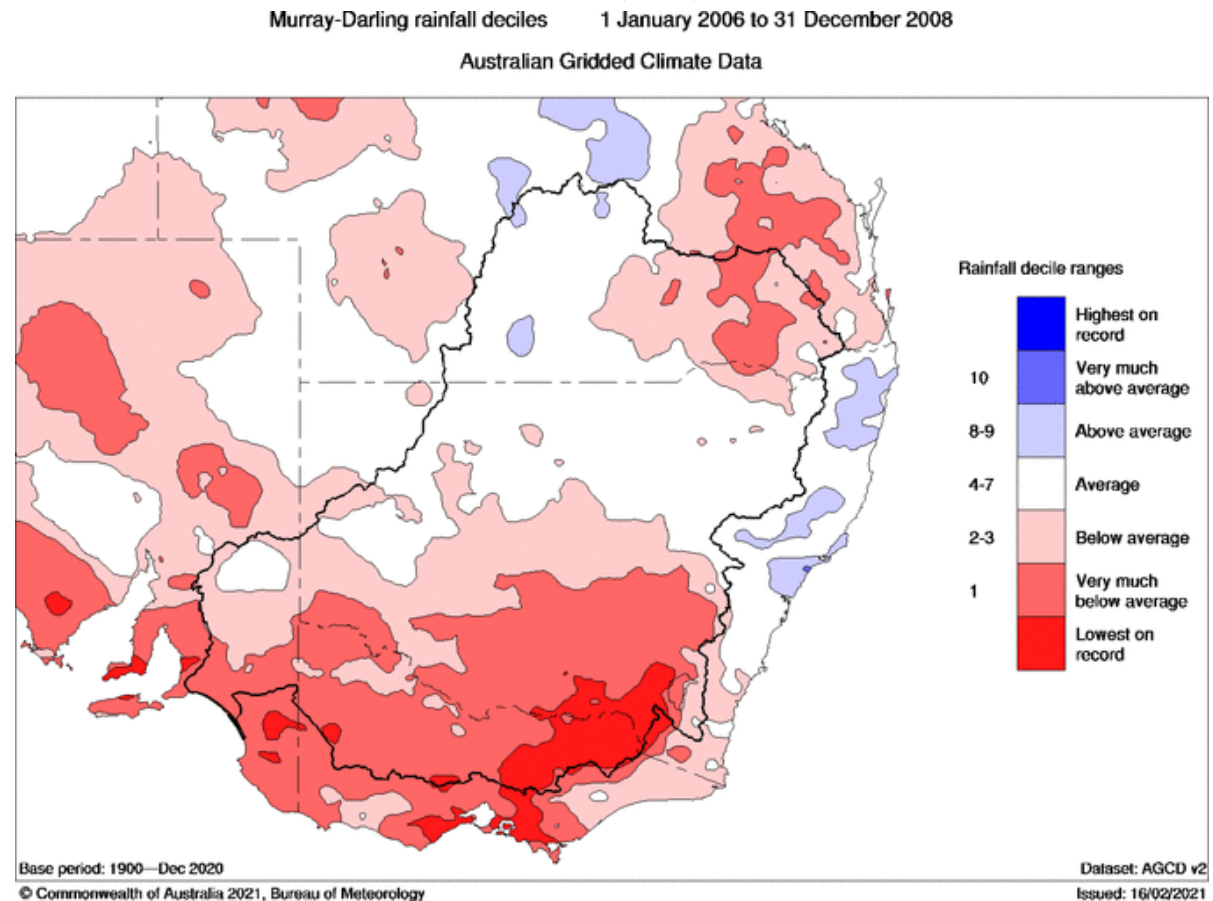
introduced the idea of
input-output tables,
national accounts,
census data &
farm output data
to get a picture of
local economic
activity

Crook times in the basin (1)

The millennium drought

Runoff in the headwaters was far below average for three years – and this was in the later years of the dry decade

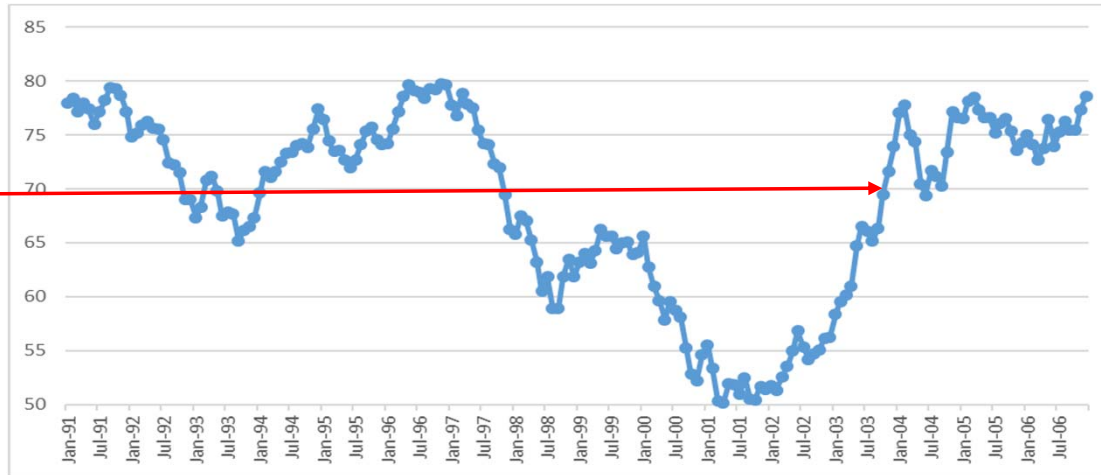
Diminished water allocations meant a potential crisis for irrigators



Water analysts around the world marvelled at how the MDB coped via water trading

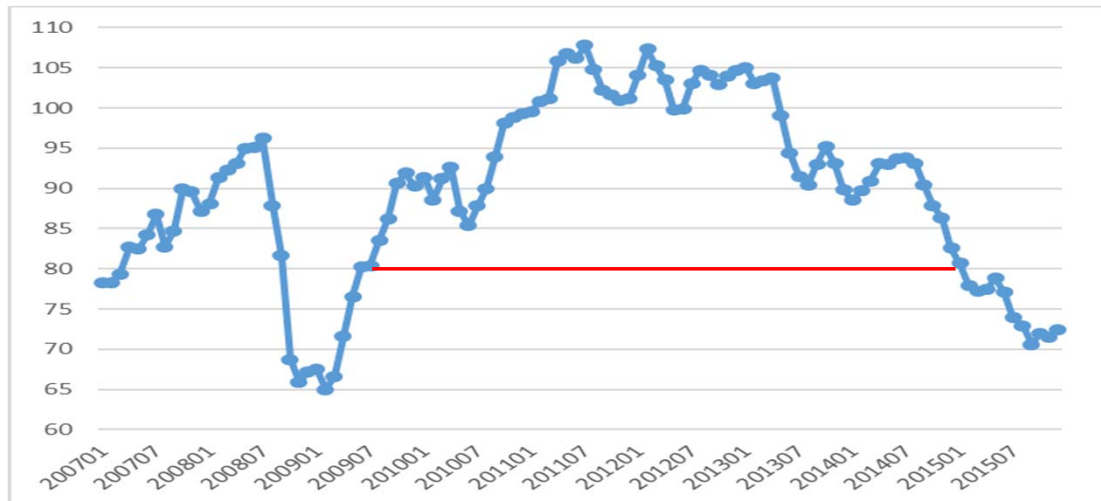
Crook times in the basin (2)

The Aus dollar was below
US\$0.70 until late in 2003

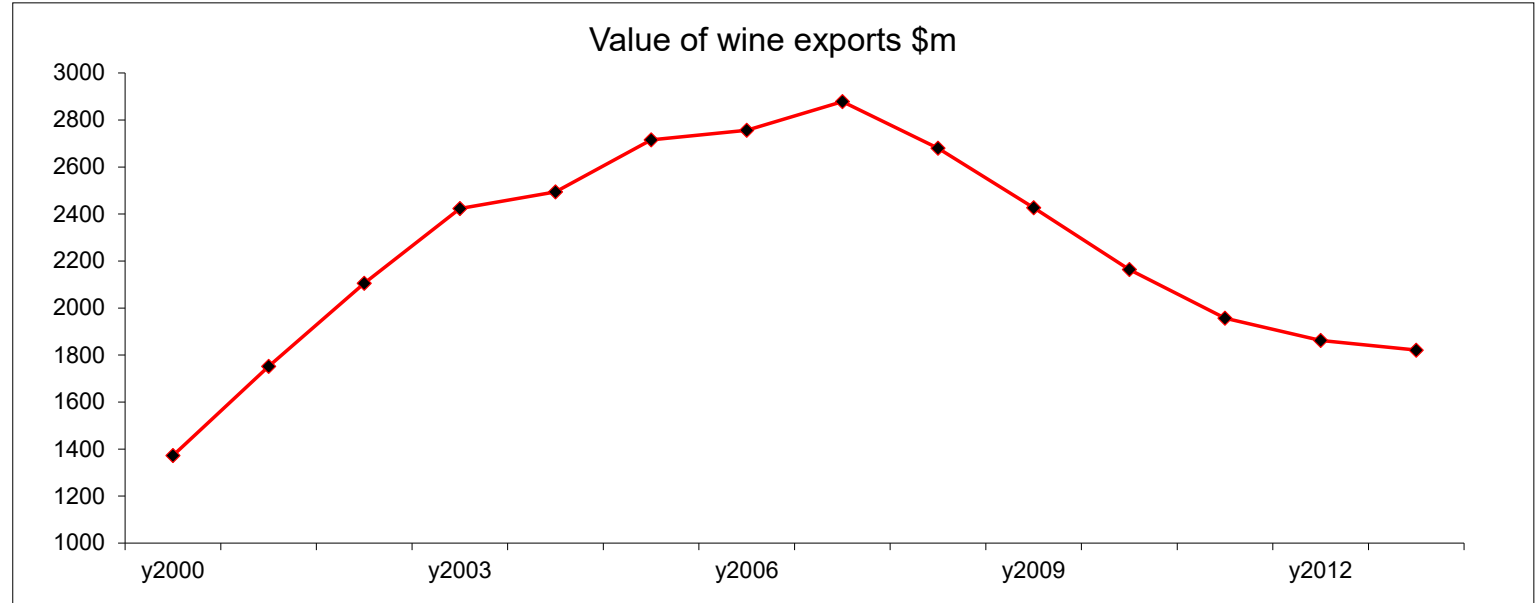
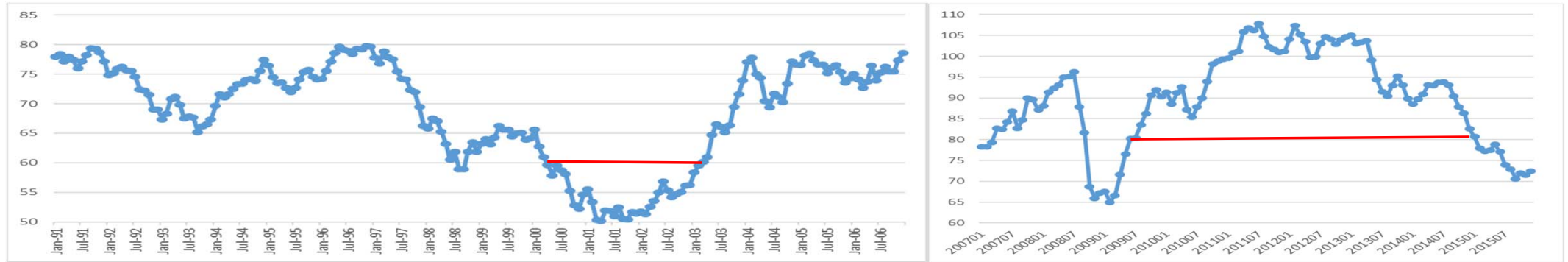


The rains return and the mining boom rages

1. The rains return and the mining
boom starts: from mid-way
through 2009 until the of 2014,
the dollar was above US\$0.80



Crook times in the basin (2b)



Wine export value
AUS \$m fell with
soaring dollar

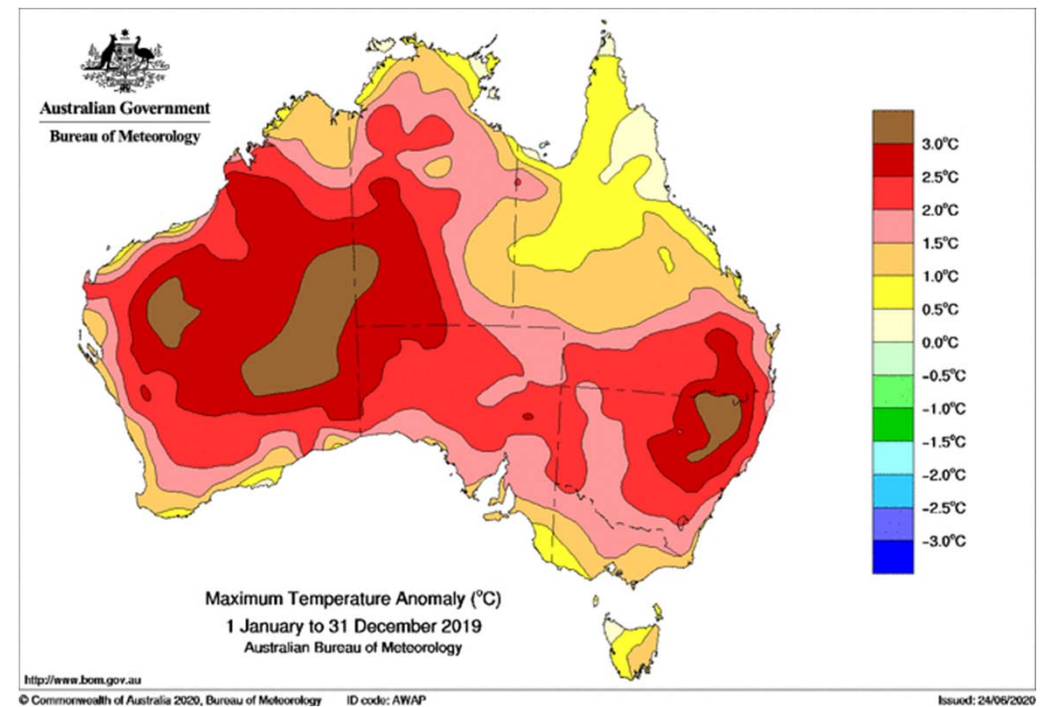
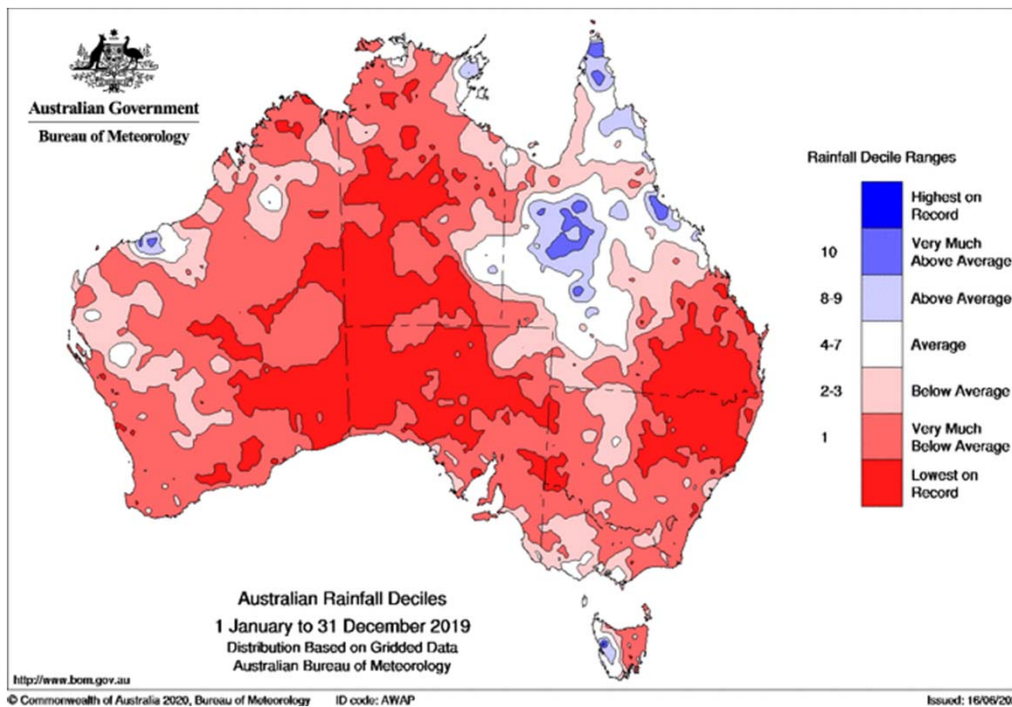
Crook times in the basin (3)

The dairy crisis – several sources

- No comment on internal industry decisions in Australia
- Malaysian Airlines flight 17 shot down in Ukraine:
Australian dairy products were caught in the cross-fire of trade sanctions

Crook times in the basin (4)

2019: not quite so extreme in southern MDB



Crook times in the basin (5)

Just when the wine sector has neared \$3bn of exports again

- Prohibitive tariff imposed by China on bottled wine from Australia
- It wiped out a market that shot up to \$1.1bn
- Since then, about \$300m of additional sales to other export destinations

Inference from the crook times

- When times are difficult, false attribution is easy – but it is also false

Inference from crook times (2)

- Some have made a career railing against the iniquities of water buybacks
- Never mind that sellers were compensated at market prices
- You could calculate “lost” income: this is **misleading** given that farmers can use proceeds to invest, etc. – or spend
- By being in the market for water, the Commonwealth raised the asset value of water holdings – and only CGE shows this properly
- I (with help from colleagues) devised a CGE model that included water trading and appropriate farm factor movements to reflect changes in water scarcity over time
- Flexibility diminishes income losses

Folk analytics

- Not only have consultants, lobbyists and politicians peddled nonsense concerning buybacks
- A group of compromised academics (CA-18) joined the chorus dignifying **MDBA squander** on MDB infrastructure upgrades in a letter to The Australia 3 years ago
- Governments have received very poor advice

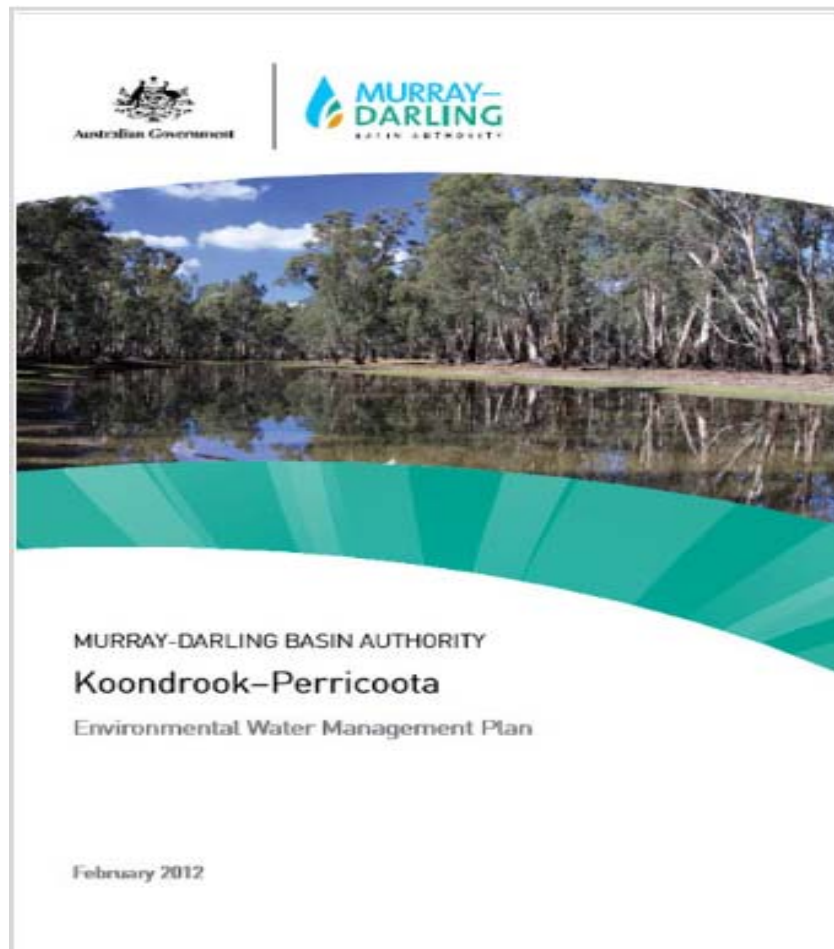
Economic & environmental ruin: \$120m

Credit: Prof Jamie Pittock ANU
Barber's Creek
regulator, part of the
Koondrook – Pericoota
environmental works
and measures project
under The Living
Murray and now
SDLAM projects.

Apparently, another
\$32m is required to
make it work



Challenge for the MDBA



- Find a single First Nations elder who does not regard the costly regulators that have been constructed as part of the infrastructure upgrades as anything other than a violation
- The MDBA has failed in its consultation process

My comment on the way forward

- Management of environmental water requires MDB community involvement
- Avoid top-down management: communities need a sense of ownership to make it work well

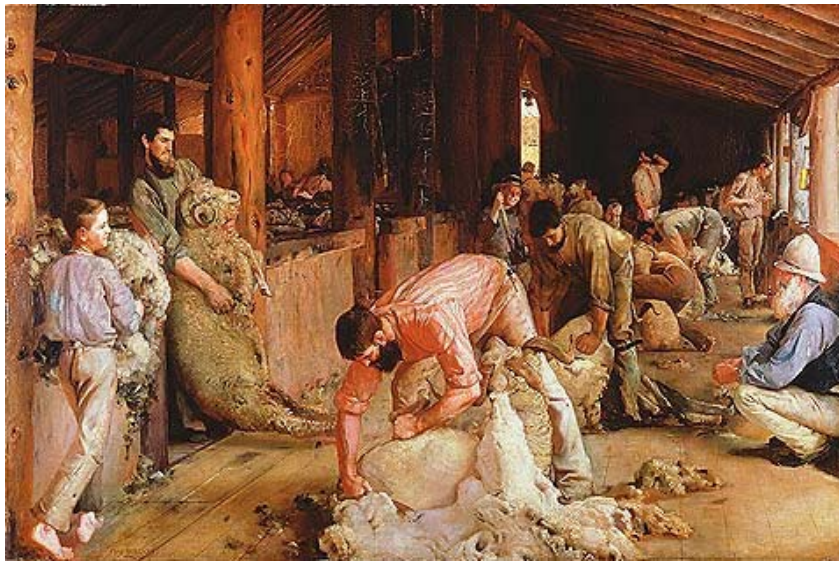
Reminder

- I asked the group of farmers and locals:
Who knows a farmer's interests best? Lobbyists, politicians or the farmers themselves?
- Implication for ceasing buybacks

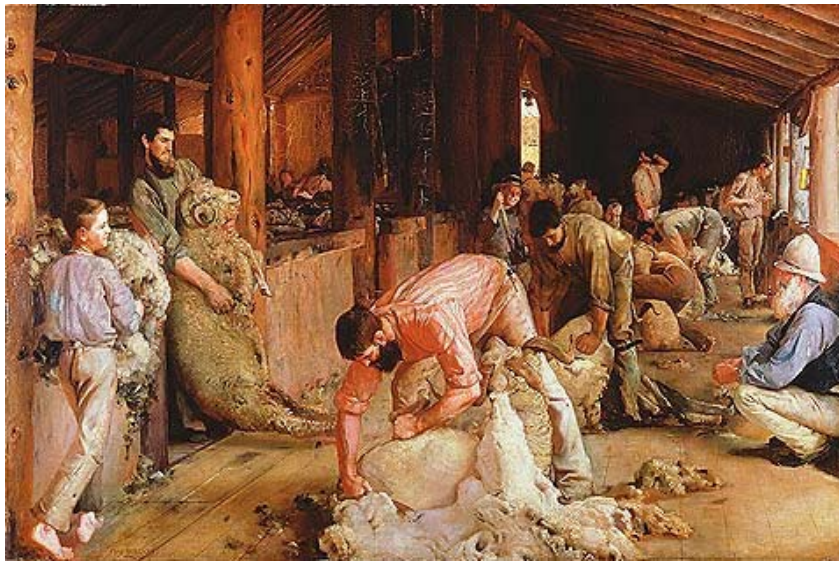
Economic change over time

- In the early 1950s, farming's share of GDP in Australia neared 25%
- Over the entire basin, farming's share of GDP is around 23%: it was less when the dollar was stronger
- The prosperity of communities will depend increasingly on access to essential services
- Maybe online services will have a growing role

From ovine to human ...



From ovine to human ...



Value-added activity in
hairdressing and beauty
salons is now similar that
of sheep/wool



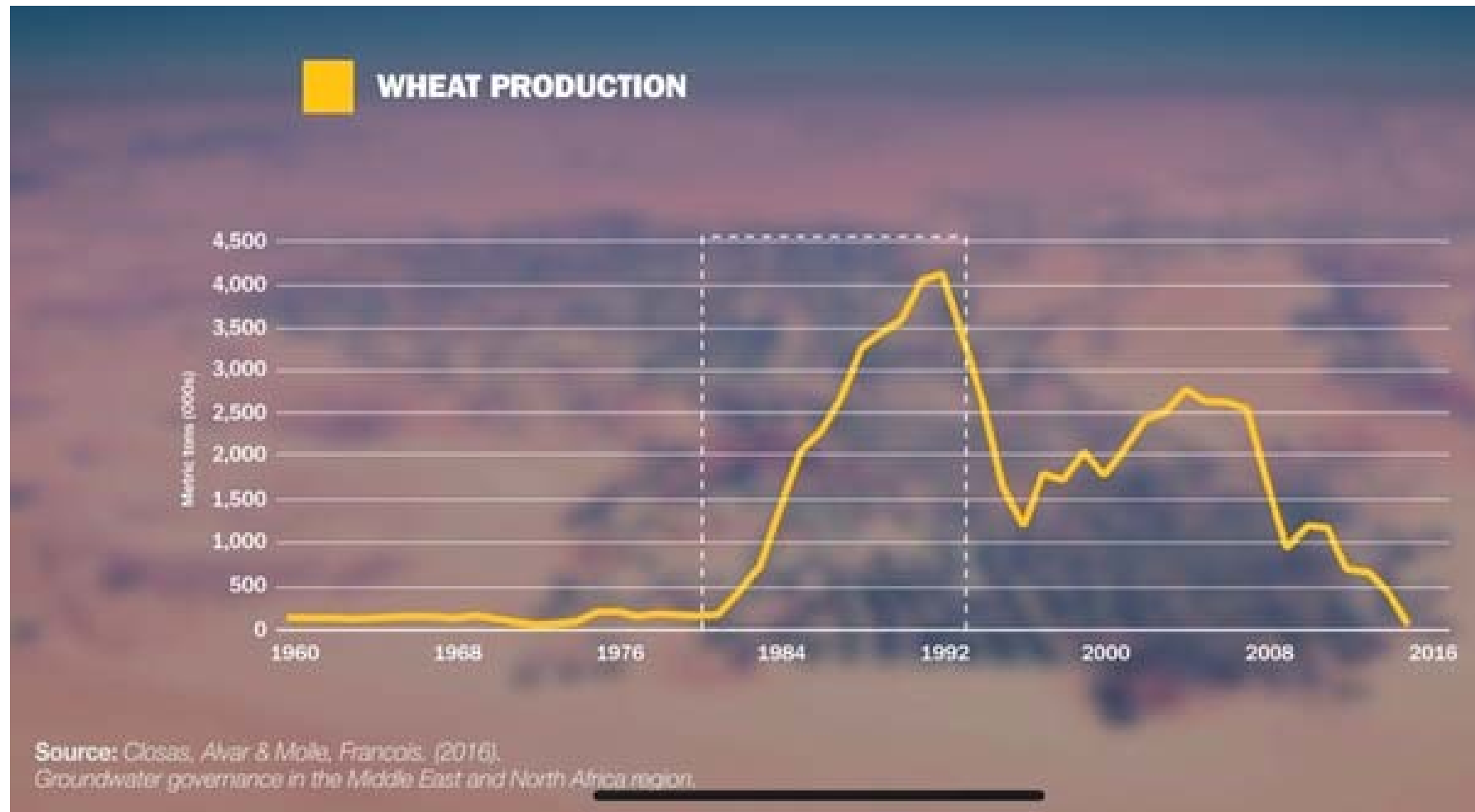
Economic change over time

- Wise spending of public funding implies providing services required by entire community
- All of Australia is facing skills shortages – and a **GP crisis** in future decades
- We all need care, physical and mental

Global issues

- Saudi Arabia
- Californian drought
- Groundwater crisis across North America, South Asia and China

Saudi Arabia's 30 year misadventure



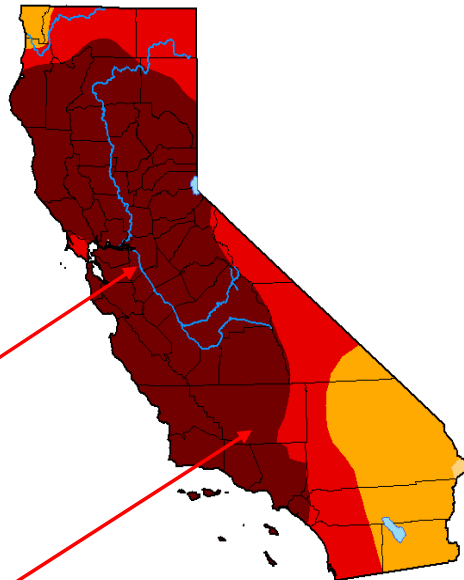
Prolonged drought in California

13 August 2013

U.S. Drought Monitor
California



U.S. Drought Monitor
California



San Joaquin County

Kern County

August 12, 2014

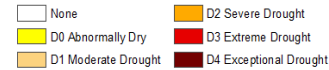
(Released Thursday, Aug. 14, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	99.80	81.92	58.41
Last Week 08-07-2014	0.00	100.00	100.00	99.80	81.92	58.41
3 Months Ago 05-15-2014	0.00	100.00	100.00	100.00	76.68	24.77
Start of Calendar Year 01-01-2014	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 10-01-2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 08-15-2013	0.00	100.00	98.23	93.86	11.36	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

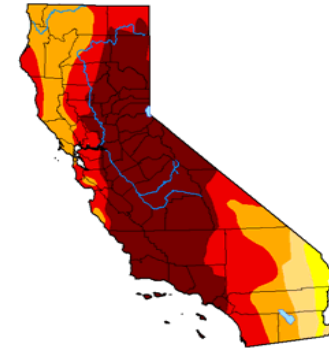
Author:

Richard Tinker
CPC/NOAA/NWS/NCEP

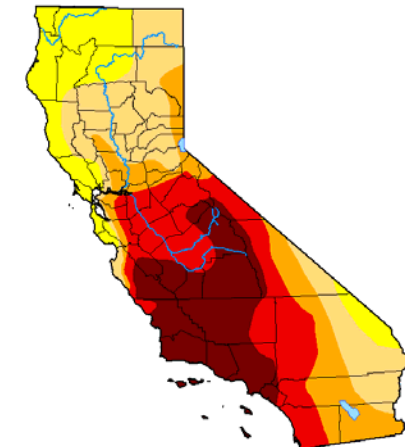


droughtmonitor.unl.edu

11 August 2015

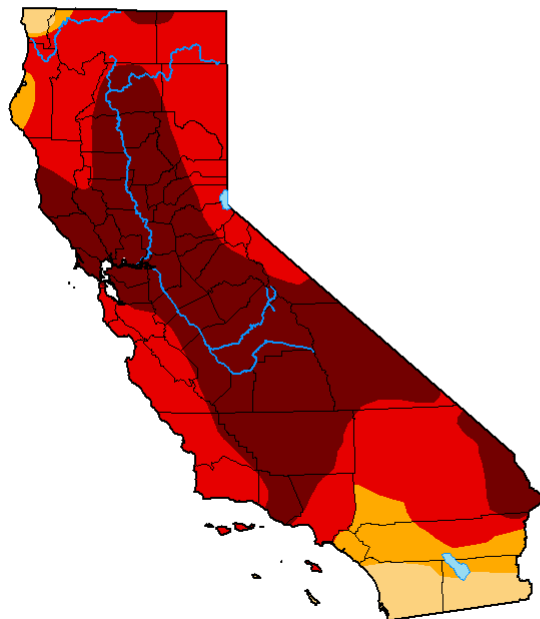


9 August 2016



Now

U.S. Drought Monitor USDA California Climate Hub



August 10, 2021

(Released Thursday, Aug. 12, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	95.07	88.37	47.10
Last Week 08-03-2021	0.00	100.00	100.00	95.07	88.37	46.45
3 Months Ago 05-11-2021	0.00	100.00	100.00	94.31	73.33	13.53
Start of Calendar Year 12-29-2020	0.00	100.00	95.17	74.34	33.75	1.19
Start of Water Year 09-29-2020	15.35	84.65	67.65	35.62	12.74	0.00
One Year Ago 08-11-2020	33.74	66.26	50.39	21.72	3.04	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

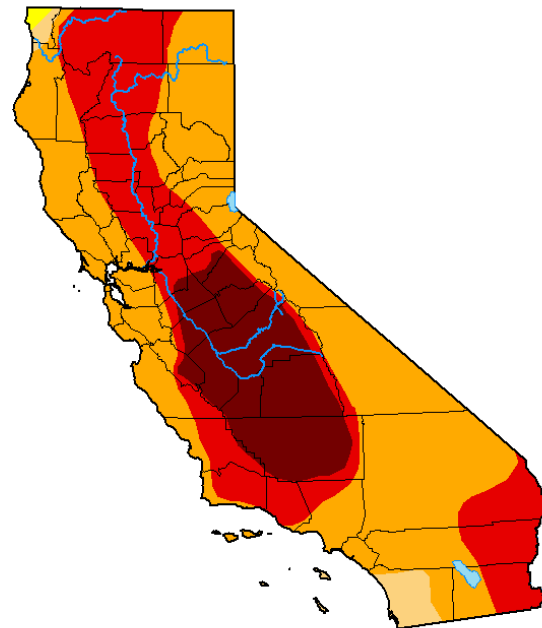
Author:

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CPC/NOAA/NWS/NCEP



droughtmonitor.unl.edu

U.S. Drought Monitor California



August 9, 2022

(Released Thursday, Aug. 11, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.77	97.52	45.81	16.53
Last Week 08-02-2022	0.00	100.00	99.78	97.47	59.81	12.12
3 Months Ago 05-10-2022	0.00	100.00	99.86	95.14	59.81	0.00
Start of Calendar Year 01-04-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year 09-26-2021	0.00	100.00	100.00	93.93	87.88	45.66
One Year Ago 08-10-2021	0.00	100.00	100.00	95.07	88.37	47.10

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

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droughtmonitor.unl.edu

Irrigation sustainability is a global issue

Groundwater & Land Subsidence in California

In an average year, groundwater provides about **40%** of California's water supply.

In the current drought, groundwater may account for **65%** or more of the state's groundwater supply.

Subsidence in Santa Clara Valley has required various infrastructure construction & repairs, totaling more than **\$756 million**



Subsidence from groundwater pumping in the San Joaquin Valley has been called the **greatest human alteration of the Earth's surface.**

Today, land subsidence is occurring at almost **1 ft/yr**

By 1970, subsidence of more than 1 foot had affected more than half of the San Joaquin Valley – in some areas as much as **28 feet**

Facts from <http://californiawaterfoundation.org/uploads/1398291778-SubsidenceSummaryReport-FINAL.pdf>

Sustainable Conservation
<http://www.suscon.org>