

Some extra notes:

#wildlife apocalypse

- Since the Whitlam Government declared most of the Great Barrier Reef area a Marine Park in 1975, there has been a raft of laws enacted to protect and preserve the Great Barrier Reef. In that time, coral cover has declined by over 50% and with a trajectory headed to only 5% coral cover by 2022.¹
- State and Commonwealth policies have failed to substantially improve GBR water quality² or abate greenhouse gas emissions,³ and since the election of state and federal LNP governments, evidence-based science has been discarded⁴ in favour of vernacular regional and rural simplicity and populism.
- Strangely unconsidered by most environmentalists is the livestock's hoofprint on water quality in the GBR, and livestock as a driver of climate change. This fact was not lost on president of the Minerals Council of Australia, Michael Roche, who wondered why environmentalists do not 'pick on' the farm-based pollution that is the cause of most of the poor water quality in the Great Barrier Reef lagoon.⁵
 - Australian Conservation Foundation - Millionaire graziers Purves and/or Wotton,
 - WWF - Millionaire graziers Purves and/or Wotton,
 - Climate Institute - Millionaire graziers Purves and/or Wotton,
 - Australia Institute - Millionaire graziers Purves and/or Wotton,
 - Australian Youth Climate Change - Millionaire graziers Purves and/or Wotton, pres and founder from grazing family
 - GetUp - founding member partner (Arna Rose) is from large grazing family
 - Greens - leader is grazier, members in federal committee graziers
 - Tim Flannery (also MLA)

Water Quality Decline in GBR

- Over the past few decades since protecting legislation has been enacted, growth has continued in industries detrimental to Reef health. Eighty percent of land adjacent to the GBR supports agricultural production, primarily beef cattle grazing and intensive cropping agriculture⁶, and it is these agricultural pursuits that have caused the steep decline in water quality in the GBR, and concomitant declines in coral cover and sea-grass meadows.⁷ The major drivers of water quality decline are catchment sediment loads delivered to the GBR lagoon, nitrogen and phosphorus increased nutrients and inhibiting herbicides and pesticides.⁸
- Sediment plumes smother corals and seagrasses, while high nitrogen and phosphorous loads are connected to high survival rates of plankton-eating Crown of Thorns starfish (COTS) larvae. Nutrient

¹ Glenn De'ath, Katharina E. Fabricius, Hugh Sweatman, and Marji Puotinen, 'The 27-year decline of coral cover on the Great Barrier Reef and its causes' (2012) 109 *Proceedings of the National Academy of Science* 17734.

² Australian Broadcasting Corporation, 'Battle for the Reef', *Four Corners*, 18 August 2014 (Marian Wilkinson). 18 August 2014 (Marian Wilkinson and Alf Russell).

³ Peter Hannan, 'Emissions from energy generation jump most in eight years after carbon price axed', *Sydney Morning Herald*, 3 September 2014.

⁴ Giles Parkinson, 'IPCC puts more heat on Abbott's anti-science climate policies' *Crikey*, 14 April 2014, <http://www.crikey.com.au/2014/04/14/ipcc-puts-more-heat-on-abbotts-anti-science-climate-policies/>.

⁵ Tony Raggatt, 'Townsville Port to be the next target of climate change activists says Queensland Resources Council', *Townsville Bulletin*, 11 March 2014, <http://www.townsvillebulletin.com.au/business/townsville-port-to-be-the-next-target-of-climate-change-activists-says-queensland-resources-council/story-fnjfzyqo-1226851074609>

⁶ Maree Gilbert, *Population and major land use in the Great Barrier Reef catchment area: spatial and temporal trends* (2001), Great Barrier Reef Marine Park Authority, Townsville.

⁷ See for example De'ath (2012) above n 6; Jon Brodie, Jane Waterhouse, Britta Schaffelke et al, (2013) *2013 Scientific Consensus*; Queensland Government, 'Reef Water Quality Protection Plan 2013' (2013) Reef Water Quality Protection Plan Secretariat, Great Barrier Reef Marine Park Authority (2014) above n 7.

⁸ Jon Brodie, Jane Waterhouse, Britta Schaffelke et al, (2013) *2013 Scientific Consensus*; Queensland Government, 'Reef Water Quality Protection Plan 2013' (2013)

Disincentive - it is difficult to get a man to understand something when his salary depends on him not understanding it

rich waters, particularly following large flooding events, cause high concentration of phytoplankton growth, which allows high numbers of COTS larvae to survive. COTS outbreaks have increased from a likely every one in 50 – 80 year events pre-agriculture, to the currently observed frequency of every fifteen years.⁹

- Macro algae flourish in nutrient rich waters, and smother corals. Herbicides and pesticides have been used to suppress weeds and pests in both the sugar, cropping and pastoral industries. These inhibit seagrass production and impact corals. The cumulative effect of herbicide, fertilizer and sediment run-off magnifies the individual effects of catchment run-off, and the synergistic effects of climate change and poor water quality are much worse than the two threats taken in isolation.¹⁰
- The Queensland beef industry has increased from about 7 million head of cattle in 1970¹¹ to 11.7 million cattle in 2009, or 67% over this time.¹²
- Thirty-five per cent (4.09 million) of these cattle are from the regions adjacent to the GBR. Queensland is the largest producer and exporter of beef in Australia, and the number of dedicated beef cattle properties in Queensland increased 71% from 6997 to 11998 between 1990 and 1995.¹³ Cattle grazing is the driving force of landclearing in Queensland, which causes erosion and sedimentation. The Fitzroy and Burdekin basins contribute 70% of all suspended solids in the GBR, and 75% of these are due to cattle grazing.¹⁴ Cattle grazing contributes more to nitrogen and phosphorous loads than sugarcane farming. Nitrogen and phosphorous loads have increased by factors of 5.7 and 8.9 respectively since European settlement, and of this, 74% is released by soil erosion mostly due to cattle grazing and land clearing for cattle grazing.¹⁵

Beef Cattle Grazing

- The Queensland beef industry has increased from about 7 million head of cattle in 1970¹⁶ to 11.7 million cattle in 2009, or 67% over this time.¹⁷ Thirty-five per cent (4.09 million) of these cattle are from the regions adjacent to the GBR.
- Cattle grazing is the driving force of landclearing in Queensland, which causes erosion and sedimentation. The Fitzroy and Burdekin basins contribute 70% of all suspended solids in the GBR, and 75% of these are due to cattle grazing.¹⁸
- Cattle grazing contributes more to nitrogen and phosphorous loads than sugarcane farming. Nitrogen and phosphorous loads have increased by factors of 5.7 and 8.9 respectively since European settlement, and of this, 74% is released by soil erosion mostly due to cattle grazing and land clearing for cattle grazing.¹⁹ Only 15.7% of nitrogen in the reef is due to dissolved inorganic nitrogen from cane and other horticultural fields. The Fitzroy and Burdekin catchments deliver 55% of total phosphorous load into

⁹ De'ath et al, above n 6; Jon Brodie, Katharina Fabricius, Glenn De'ath and Ken Okalji 'Are increased nutrient inputs responsible for more outbreaks of crown-of-thorns starfish? An appraisal of the evidence' (2005) 51 *Marine Pollution Bulletin* 266.

¹⁰ Great Barrier Reef Marine Park Authority *Outlook Report 2009* (2009)

¹¹ Clive McAlpine, Andes Etter, Phillip Fearnside et al, 'Increasing world consumption of beef as driver of regional and global change: call for policy action based on evidence from Queensland (Australia), Colombia and Brazil' (2009) 19 *Global Environment Change* 21.

¹² State of Queensland, 'The Queensland beef industry Current trends and future projections.' (2010) Department of Employment, Economic Development and Innovation.

¹³ Ibid,

¹⁴ Brodie et al, above n 8.

¹⁵ Jon Brodie, Frederieke Kroon, Britta Schaffelke et al 'Terrestrial pollutant runoff to the Great Barrier Reef: An update of issues, priorities and management responses,' (2012) 65 *Marine Pollution Bulletin* 81.

¹⁶ Clive McAlpine, Andes Etter, Phillip Fearnside et al, 'Increasing world consumption of beef as driver of regional and global change: call for policy action based on evidence from Queensland (Australia), Colombia and Brazil' (2009) 19 *Global Environment Change* 21.

¹⁷ State of Queensland, 'The Queensland beef industry Current trends and future projections.' (2010) Department of Employment, Economic Development and Innovation.

¹⁸ Brodie et al, above n 8.

¹⁹ Brodie et al, above n 15.

the GBR. Over 90% of the phosphorous discharged is particulate phosphorous, which is derived mainly from the erosion connected to the cattle industry.²⁰

Land Clearing For Grazing

- Land clearing for cattle grazing and fodder cropping for cattle kept in feedlots has expanded as the beef industry has expanded, promoted by federal and state governments that are also responsible for protecting the GBR. Specialized and discrete government agencies operate exclusively rather than inclusively, and result in the perverse outcome where one arm of government promotes conservation and protection of the Reef whilst other arms promote industries that promulgate large scale poor water outcomes.
- Before land-clearing for the cattle industry and its interconnected feed grain industry became widespread, Brigalow ecological communities in Queensland was estimated to be 7.3 million ha. By 2003, only 8% of this vegetation type remained.²¹ From being a major bioregion, Brigalow is now listed as 'endangered' on the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth), the *Vegetation Management Act 1999* (Qld) and the *Environmental Protection Act 1994* (Qld).²²
- Land clearing in Queensland took on third world rates of between 300,000 and 700,000 ha per year in the 1990s and early 2000s,²³ and this was predominantly to facilitate cattle grazing.²⁴ Australian Institute of Marine Science researchers studying the longest dataset on water quality for the GBR (1989-2010) found that the GBR lagoon water quality declined significantly during the late 1990s and early 2000s, which coincided with very high rates of vegetation clearing on adjacent land and three major flood events.²⁵ When the Queensland government sought to reduce rates of land clearing in the late 1990s, the government gave a window of opportunity for graziers to 'panic clear' before they passed the *Vegetation Management Act 1999* (Qld). A further period ensued before the provisions came into force, and in the years 1997 until 2000, landclearing rates went from 400,000 ha per year to 800,000 ha per year.²⁶ Lindemayer and Burgman put land clearing into perspective by equating the clearing of 550,000 hectares per year to clearing the equivalent of 10 suburban house blocks per minute for every minute of the year.²⁷
- Following its sweep into office in 2012, the Newman LNP government rapidly enacted laws to reverse the environmental protections of the previous Labor government. The Minister for Natural Resources and Mines almost immediately announced that investigation and enforcement of land clearing in breach of the *VMA* would cease pending a review of the Act.²⁸ Despite the wealth of scientific consensus demonstrating broadacre agriculture and clearing for broadacre agriculture being the primary cause of declining water quality in the GBR, the Newman government passed the *Vegetation Management Framework Amendment Act 2013* ('*VMFA 2013*') on 21 May 2013. The *VMFA 2013*

²⁰ Ibid.

²¹ D. W. Butler, 'Recovery plan for the "Brigalow (*Acacia harpophylla* dominant and co dominant" endangered ecological community' (draft of 1 May 2007). Report to the Department of the Environment and Water Resources, Canberra. Queensland National Parks and Wildlife Service, Brisbane. The estimate of 8% is likely to be an overestimate of the true extent.

²² Australian Government, *EPBC Act List of Threatened Ecological Communities*, <http://www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl>.

²³ David Lindenmayer and Mark Burgman, *Practical Conservation Biology* (CSIRO Publications 2005), p 230.

²⁴ Clive McAlpine, Andes Etter, Phillip Fearnside et al, 'Increasing world consumption of beef as driver of regional and global change: call for policy action based on evidence from Queensland (Australia), Colombia and Brazil' (2009) 19 *Global Environment Change* 21.

²⁵ Britta Schaffelke, John Carleton, Miles Furnas, Murray Logan, 'Water quality variability in the inshore Great Barrier Reef lagoon,' (Paper presented at the 12th International Coral Reef Symposium, Cairns, 9-13 July 2012).

²⁶ McAlpine et al, above n 24

²⁷ Lindemayer and Burgman, above n 23

²⁸ Queensland Government, Minister for Natural Resources and Mines, The Hon. Andrew Cripps, 'Minister Orders Review of Vegetation Clearing Processes' (Media Statement, 19 April 2012).

made substantial changes to the VMA, including controversial measures as self-assessable vegetation clearing codes without need for permits; removal of the Courts' guide for imposing penalties on vegetation clearing offences; the reversal of onus of proof so that all elements of illegal clearing must be proved beyond reasonable doubt by the prosecution; and provision of the defence of 'honest mistake' to illegal clearing.²⁹

- Further, clearing of remnant vegetation and high conservation value regrowth is now permitted if that clearing is for fodder crops³⁰ or for high value agriculture.³¹ The sole consideration was that the land had high agricultural value, with consideration to environmental conditions absent. If landholders do illegally clear, they are no longer compelled to produce documentary evidence or information to investigators and even though failure to produce a such evidence is an offence,³² because the amendments provide for an individual to refuse to comply if doing so might incriminate the individual or expose that person to a penalty.³³

Diminution Of The Water Act

- In complete disregard to sedimentation plumes smothering inshore reefs and sea grass beds of the GBR, the Queensland government amended the *Water Act 2000* (Qld) with the *Land, Water and Other Legislation Amendment Act 2013* (Qld), removing requirements of landholders to obtain riverine protection permits to destroy vegetation in a watercourse or spring.³⁴ In the year 2013-2014, Queensland once again became a landclearing hotspot, with over 275,000 ha cleared, tripling the landclearing rate from 2010.³⁵
- The Queensland Department of Science, Information Technology and Innovation's monitoring has found 95% of cleared land is used for grazing.³⁶ Very clearly, the lack of adequate regulation and worse, laissez-faire agricultural policies are conclusive evidence of government failure and governance failure at all levels with respect to the GBR.
- In an article about coal and dredging for coal ships, internationally renowned coral expert Professor Terry Hughes stated that the 'main danger for corals is sediment run-off from land'. Hughes noted that 'we can try to improve the amount of sediment that's coming out of rivers and the Government is now spending hundreds of millions of dollars doing that - and it is working to a small extent.'³⁷

²⁹ Environmental Defenders Office, 'What's Happening in Queensland?'

<http://www.edoqld.org.au/news/queensland-law-reform-and-recent-legislative-changes/>

³⁰ *Vegetation Management Framework Amendment Act 2013* (Qld), s 15(8).

³¹ *Vegetation Management Framework Amendment Act 2013* (Qld), s s22DAB, 22DAC.

³² *Vegetation Management Act 1999* (Qld), ss 51(3), 53(1), 54(1).

³³ *Vegetation Management Act 1999* (Qld), s 51(4), 53(2), 54(2).

³⁴ *Land, Water and Other Legislation Amendment Act 2013* (Qld), s 294.

³⁵ Marine Marron, Bill Lawrence, Bob Pressy et al, 'Land clearing in Queensland triples after policy ping pong', *The Conversation*, 18 March 2015.

³⁶ Queensland Audit Office, *Managing Water Quality in Great Barrier Reef Catchments*, Report 20: 2014-15, p. 38.

³⁷ Wilkinson, above n 10.