

Singleton Horticulture Project submission

February 2023



60 Leicester Street,
Carlton Vic. 3053
0422 974 857
admin@dea.org.au
www.dea.org.au

DEA Scientific Committee:

Prof Colin Butler
Prof David de Kretser AC
Prof Robyn McDermott
Prof Emeritus Sir Gustav Nossal AC
Prof Fiona Stanley AC

Prof Stephen Boyden AM
Prof Peter Doherty AC
Prof Stephen Leeder AO
Prof Lidia Morawska
Prof Hugh Possingham
Dr Rosemary Stanton OAM

Prof Emeritus Chris Burrell AO
Prof Michael Kidd AM
Prof Ian Lowe AO
Prof Peter Newman AO
Prof Lawrie Powell AC
Dr Norman Swan

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-government organisation of medical doctors in all Australian states and territories.

DEA's work is based on the premise that humans need a future with clean air and water, healthy soils capable of producing nutritious food, a stable climate, and a complex, diverse and interconnected humanity whose needs are met in a sustainable way. We are therefore interested in environmental protection and restoration to promote human health and social stability.

DEA's work is supported by a distinguished Advisory Committee of scientific experts whose knowledge of medical and public health issues is fully contemporary. Our members work across all specialties in community, hospital, and private practices.

Doctors for the Environment welcomes the opportunity to make a submission to the Northern Territory Environmental Protection Authority (NTEPA) regarding the proposal from Fortune Agribusiness Funds Management for a horticultural development at Singleton Station.

1 Introduction

Doctors for the Environment Australia (DEA) has fundamental concerns about the Fortune Agribusiness Funds Management proposal. We note that the proposal will produce fresh fruit and vegetables, however, these will not be available to the local people, except if they are offered an additional plot.¹ In addition, the water extraction required for the project threatens the local food on which local Aboriginal people depend for nutrition, spiritual nourishment and trading.² This project is unprecedented in scale, and will be one of the largest fruit and vegetable projects in Australia.¹

DEA is concerned about the significant negative impact of the project on the health of Territorians. There is a low level of confidence in predicting the potential impacts of the project because so much is unknown, as little research has been done. Because the project's impacts are poorly understood and may be completely unanticipated (particularly with projected changes in the climate), there is a low level of confidence in Fortune's proposed measures to avoid, mitigate or manage them.

DEA as a civil society organisation is also concerned at the lack of community engagement in relation to the Project. Community engagement that leads to participation and empowerment can contribute to health and wellbeing. However, our organisation discovered this proposal through personal networks, rather than through any community engagement which Fortune Agribusiness claims to have undertaken.

As an organisation of medical practitioners, we recognise the importance of health equity, and this leads to our concern about the limited capacity provided for Aboriginal people to contribute to the proposal. It is Aboriginal people who will be most directly impacted by this development as most of the population of the region is Aboriginal.³ While we have not attended presentations by Fortune Agribusiness for local Aboriginal people, we see no resources in the languages of the region on the project's website or in the project proposal. In addition, there are no documents in formats that are easy to understand, such as videos and pictorial explanations. We note that no contact is identified on the website, and the only contact address is in Southbank, Victoria.

2 Capacity of community and individuals to assess and respond to project and its significant impacts

We have reviewed the 198-page project proposal and 25 appendices totalling about 1400 pages. The proposal highlights information deficits and lack of knowledge in many areas. This is of particular concern in

relation to the impacts of the water extraction with incomplete understanding of the overall volume of water in the aquifer and the presence of known, or yet unknown, groundwater dependent species.²

Community members, both Aboriginal and non-Aboriginal have had limited capacity to assess and respond to such a novel project of this scale and with this volume of documentation. While the consultation was not brief, it extended over the summer holiday period. This is a period of traditional lore when Aboriginal people may be unavailable⁴ and many non-Aboriginal people are often also on holiday over the November to February period when the proposal has been open for review.

3 Land clearing

Over 4000 ha of land will be cleared for the project - around the size of 2000 Melbourne Cricket Grounds. Land clearing contributes to biodiversity loss through destruction of vegetation, fragmentation of habitats, impact on pollinator species and degradation of water sources and is of international concern.⁵ Australia is one of few nations continuing large scale tree-clearing, mostly for agriculture, mining and infrastructure.⁶ Climate change is also contributing to loss of native vegetation through drought and bushfire. The interaction between land clearing and climate change can contribute to a positive feedback loop whereby previously undeveloped areas that had stored carbon are converted to sources of carbon dioxide, accelerating climate change. Emissions resulting from land clearing through loss of carbon storage are the source of almost 95% of the total carbon emissions from this project (344,907 of 365,069 tCO₂e).⁷ We also note the impact of land clearing on sentient wildlife which can suffer and die painful deaths.⁸

From DEA perspective the land clearing associated with this project will adversely affect human health through:

- its contribution to climate change, now established as the greatest threatening process to current and future human health
- disruption to the water cycle, affecting water supply and quality, in addition to the proposed extraction of water
- air pollution – although the population density around the project is low, we are concerned at the increase in dust that may result
- biodiversity loss, through replacement of native vegetation with intensively cultivated monocultures
- lost improvements for health and wellbeing through being in vegetated places
- loss of opportunities for nature-based education, inspiration and future livelihoods.⁹ The impacts of land clearing cannot be reversed even at the conclusion of the project.

The proponent notes repeatedly that the land to be cleared is not forest but sandplain. However, as noted in the Brigalow Declaration of 420 scientists (our italics): 'The large scale destruction and removal of native woodlands, forests, wetlands and *grasslands* remains the biggest single threat to biodiversity in Australia, rivalled only by the impact of introduced species'.¹⁰ Land clearing leads inevitably to loss of wildlife and is among the greatest threats to Australia's threatened species. 'Evidence for the large and irreversible negative impact of vegetation clearance on Australia's biodiversity is unquestionable'.¹¹ Clearing of sparse woody vegetation, such as at Singleton, is occurring at 10 times the rate of forest clearing. 'The ongoing, cumulative impact of native vegetation loss on natural capital values is substantial. It can be many decades before areas of sustained native vegetation regrowth or managed restoration provide good-quality wildlife habitat.'¹²

4 Water extraction

DEA is alarmed at the plan and prior approval for the extraction of 40 gigalitres of water annually. We note the modelling described in Appendix R page 13 anticipates lowering of the water table by 50 m, which would not be tolerated even by relatively deep-rooted vegetation which has roots 10-15m underground. This water extraction is therefore in breach of Territory guidelines.¹³

According to media reports, over the course of the licence approval has been given for extraction of more than 1 trillion litres of water. This water licence was one of the largest given by any government in Australia; by comparison the largest groundwater licence in New South Wales is 15,000 megalitres. The proponent will pay no costs to the NT Government for the water because, unlike its interstate counterparts, the NT does not charge for large-scale commercial water use. This puts the NT at a loss of up to \$300 million annually compared to if the water was extracted in another jurisdiction. This water license approval is currently before the NT Supreme Court as Aboriginal and environment groups believe the proposal does not comply with the Water Act.¹⁴

DEA's particular concerns relate to the negative health impacts of loss of water for Aboriginal communities. Water is vital for the wellbeing of nearby Aboriginal communities for cultural and spiritual wellbeing.² Beyond the specific loss of water for this project, we are also concerned at the general loss of water sovereignty related to water rights for Aboriginal communities. Under the proposal, interstate and international interests will effectively export Aboriginal people's water which has been embedded in the production of horticultural produce. This will undermine the communities' exercise of self-determination, and capacity to care for Country.¹⁵

5 Impacts on Groundwater Dependent Ecosystems

While details of groundwater dependent ecosystems are beyond DEA's expertise, we note the major concerns of environmental, legal and Aboriginal organisations. Ecosystems are already under major stress from climate change and invasive species, and the enormous extraction of water in a semi-arid environment for this project will further threaten these at-risk ecosystems, compounding the loss due to clearing.

Well-known trees of the region include desert bloodwoods, ghost gums, bats wing coral trees, coolabah trees, fig trees, river red gums and bush orange, all of which may be impacted by the project. Drawing down the water table will impact soaks and creeks which are important for Aboriginal physical, spiritual and cultural survival. Reducing groundwater depths will also remove connections between underground aquifers, further stressing vegetation and desiccating organic matter.

Ground water creatures ('stygo fauna') have very recently been discovered, through assessments for fracking projects in NT.¹⁶ These may be present in the region and if so, then they are completely dependent on water that has been approved for extraction. Studies have not yet been undertaken in the Singleton region to find out whether they exist and what unique characteristics they may have.¹ With such limited knowledge of biodiversity of the region we risk losing much that could have contributed to improve human wellbeing.¹⁷

6 Introduction and spread of weeds

Lack of research into weeds, along with other aspects of the environment in the region, is a significant issue. Buffel grass is already present in low densities throughout the sandplain.¹ Despite not being a declared weed in NT as it has in neighbouring states, buffel grass is considered a major threat to ecosystems and Aboriginal community livelihoods.¹⁸ The risk that this project will contribute to the spread of buffel grass is a major concern.

7 Climate change

Climate change is the greatest threat to human health of the current century,¹⁹ a major focus of DEA. While the emphasis of the project's Greenhouse Gas Assessment is on Scope 1 and Scope 2 emissions, namely those resulting directly from the project itself, and those resulting indirectly from the project such as electricity use. However, given the urgency of climate change mitigation DEA believes Scope 3 emissions need to be considered, that is, those occurring in the wider economy as a result of the project. For example, emissions resulting from transport and consumption of the project's horticultural output need to be considered. The project is highly dependent on effective storage and rapid transport of fresh produce to distant Australian and international markets. However, as society transitions to a low carbon economy, communities are turning to local produce and self-reliance, which are the complete opposite of this project.²⁰ Likewise, the dependence on a fly-in fly-out workforce, and vulnerability to climate risk have not been adequately addressed.²¹ DEA's concern about land clearing, which is the main source of Scope 1 emissions, must also be addressed. Emissions resulting from land clearing through loss of carbon storage are the source of almost 95% of the total carbon emissions from this project (344,907 of 365, 094 tCO₂e).⁷ While increases in emissions from the project may be relatively small in comparison to other projects in Australia, all sectors need to reduce emissions as quickly as possible, making a proposal such as this inappropriate.

Bureau of Meteorology data for Ali Curung, the site nearest to the project shows temperature observations from 1989 to 2014. The maximum temperature exceeded 40°C at least one day every month from September through to March every year and reached a peak of 46.2° in 2014, the last year for which data are available.²² This is hotter than the climate reported in the proposal,²³ which used temperatures for the period 1986-2005. The higher temperatures from the Bureau of Meteorology would increase the temperature stress and drought and bushfire risk beyond what was considered by the proponents.

We also note that the risks of extreme heat discussed in the proposal were limited to those affecting humans, equipment and social licence. Risks of extreme heat on crop production appear to have not been considered, despite some proposed products such as mandarins being temperature sensitive.²⁴ The increasing temperatures and other extreme weather events occurring as a result of climate change need greater consideration in this proposal.

8 Employee numbers, road trauma and health care

This project anticipates employing up to 1350 workers during the peak production season, which is over three times the resident population of the nearby Aboriginal community of Ali Curung, 394 at the 2021 census.³ Such an inflow presents challenges to the region that are not addressed in the proposal.

NT roads are by far the most dangerous in Australia with death rates about three times those of other jurisdictions per person and per kilometre travelled, with no change in these rates over many years.²⁵ The remoteness of NT population is one contributor to the NT's high road toll and such an increase to resident population would place considerable risk on their limited emergency and health care resources. Ali Curung

Health clinic is staffed by one Aboriginal Health Worker and two nurses with medical support two days per week, and would not be able to manage anticipated acute or emergency care.²⁶

9 Tourism

The proposal states that in 2019, 106,000 people visited Barkly, spending an average of 2.4 nights in the region and an average spend per trip of \$1,284. This arithmetic is questionable as it implies that tourism income at this amount per person reached \$136 million.¹

The Iytwelepenty / Davenport Ranges National Park adjoins Singleton Station along half the Park's western boundary. Its key attraction is the remoteness and difficulty in accessing the region, and these would be completely undermined by the presence of 1350 employees at the project.²⁷ The proposal has made no account for loss of tourism revenue through the loss of amenity to this nearby attraction. The Iytwelepenty / Davenport Ranges National Park is jointly managed park by Traditional owners and NT Parks and Wildlife Commission, and is one of few opportunities for economic development for local Aboriginal people. Negative impacts of the nearby Singleton horticultural project would therefore undermine the livelihoods of some of the most vulnerable Australians.

10 Lack of interim review or evaluation

The proponents recognise the lack of previous development in the region but do not appear to account for this in the scale and speed of their proposal, which once underway would be able to proceed without on-going review and evaluation. We note the impact of industrial development on Aboriginal communities elsewhere that has led to negative health outcomes that are not explained by biomedical factors. Such effects likely result from the stress and exposure to development, which have not been adequately accounted for in this proposal.²⁸

11 Conclusion

While we await the finding of the Supreme Court into the legality of the water licence, we have here outlined a range of other critical environmental, social and health issues that EPA needs to consider. A smaller pilot project could be considered to enable a better understanding of possible positive and negative impacts, since much of the information provided by the proponent is based on desktop studies. DEA therefore believes this proposal should undergo the most rigorous level of assessment by EPA.

References

- [1] GHD, "Environmental Protection Act 2019: Singleton Horticulture Project," Nov 2022. [Online]. Available: [https://ntepa.nt.gov.au/consultation/singleton-horticulture-project#Statutory-notice-\(23-November-2022\)](https://ntepa.nt.gov.au/consultation/singleton-horticulture-project#Statutory-notice-(23-November-2022)). [Accessed 05 Feb 2023].
- [2] Donaldson SD, "Singleton Water Licence Aboriginal Cultural Values Assessment: Public Report to the Central Land Council," Central Land Council, Alice Springs, 2021.
- [3] Australian Bureau of Statistics, "Ali Curung 2021 Census," 2022. [Online]. Available: <https://www.abs.gov.au/census/find-census-data/quickstats/2016/SSC70004>. [Accessed 05 Feb 2023].
- [4] Sheiner P, Forrest K, "Aboriginal Traditional Lore," 2018. [Online]. Available: <https://austlii.community/foswiki/WALawHbk/AboriginalTraditionalLore>. [Accessed 05 Feb 2023].

- [5] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, "Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services," May 2019. [Online]. Available: https://ipbes.net/sites/default/files/ipbes_7_10_add.1_en_1.pdf. [Accessed 05 Feb 2023].
- [6] WWF Australia, "Land-clearing in Australia," May 2017. [Online]. Available: <https://www.wwf.org.au/ArticleDocuments/355/pub-fact-sheet-tree-clearing-in-australia-23may17.pdf.aspx>. [Accessed 05 Feb 2023].
- [7] GDM, "Appendix U - GHG assessment," 2022. [Online]. Available: https://ntepa.nt.gov.au/__data/assets/pdf_file/0003/1167123/appendix-u-singleton-horticulture-project-ghg-assessment.pdf. [Accessed 06 Feb 2023].
- [8] Finn JC, Stephens NS, "Land clearing is a significant issue of animal welfare," *Wildlife Research*, vol. 44, no. 5, pp. 377-391, 2017.
- [9] Doctors for the Environment Australia, "How Land Clearing Harms our Health: Fact sheet," 2019. [Online]. Available: <https://dea.org.au/wp-content/uploads/2021/01/Land-clearing-fact-sheet-Final-01-19.pdf>. [Accessed 05 Feb 2023].
- [10] Possingham H, "The Brigalow Declaration," 2003. [Online]. Available: <https://martinemaroon.files.wordpress.com/2016/05/2003-brigalow-declaration.pdf>. [Accessed 05 Feb 2023].
- [11] Nelder V, Laidlaw M, McDonald K, Mathieson M, Melzer R, Seaton F, McDonald W, Hobson R, Limpus C, "Scientific review of the impacts of land clearing on threatened species in Queensland," 2017. [Online]. Available: https://www.qld.gov.au/__data/assets/pdf_file/0024/209517/land-clearing-impacts-threatened-species.pdf. [Accessed 05 Feb 2023].
- [12] Cresswell I, Janke T, Johnston EL, "State of the Environment Report," Australian Government Department of Agriculture, Water and the Environment, 2021. [Online]. Available: <https://soe.dcceew.gov.au/overview/pressures/people>. [Accessed Feb 2023].
- [13] NT Government, "Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District," Department of Environment and Natural Resources Water Resources Division, Darwin, 2020.
- [14] Jonscher S, "Traditional owners prepare for court challenge to NT's largest water licence on Singleton Station," 2022. [Online]. Available: <https://www.abc.net.au/news/2022-09-04/singleton-station-traditional-owners-water-licence/101351964>. [Accessed 5 Feb 2023].
- [15] O'Donnell E, Godden L, O'Brien K, Mooney W, Chester L, Rigney G, "Returning Water Rights to Aboriginal People," 2021. [Online]. Available: <https://pursuit.unimelb.edu.au/articles/returning-water-rights-to-aboriginal-people>. [Accessed 05 Feb 2023].
- [16] Davis J, Nielson D, Rees G, Oberprieler S, "Blind shrimps, translucent snails: the 11 mysterious new species we found in potential fracking sites," 2021. [Online]. Available: <https://blog.csiro.au/discovery-of-mysterious-stygofauna-species/>. [Accessed 05 Feb 2023].
- [17] Chivian E, Bernstein A, "How our health depends on biodiversity," 2010. [Online]. Available: https://www.bu.edu/sph/files/2012/12/Chivian_and_Bernstein_2010_How_our_Health_Depends_on_Biodiversity.pdf. [Accessed 05 Feb 2023].

- [18] Bowman T, "Buffel grass management in Indigenous communities," 21st Australasian Weeds Conference; Sydney, 2018.
- [19] Lancet, "The Lancet Countdown on health and climate change," 2023. [Online]. Available: <https://www.thelancet.com/countdown-health-climate>. [Accessed 02 Feb 2023].
- [20] Schreuder W, Horlings L, "Transforming places together: transformative community strategies responding to climate change and sustainability challenges," *Climate Action*, vol. 1, p. 24, 2022.
- [21] Overton J, "Issue Brief | The Growth in Greenhouse Gas Emissions from Commercial Aviation (2019, revised 2022)," June 2022. [Online]. Available: <https://www.eesi.org/papers/view/fact-sheet-the-growth-in-greenhouse-gas-emissions-from-commercial-aviation>. [Accessed 07 02 2023].
- [22] Bureau of Meteorology, "Climate Data Online," Available: <http://www.bom.gov.au/climate/data/?ref=fr>; Melbourne, 2023. [Accessed 02 Feb 2023].
- [23] GDM, "Climate Change Risk Assessment Singleton Horticulture Project," 2022. [Online]. Available: [https://ntepa.nt.gov.au/consultation/singleton-horticulture-project#Statutory-notice-\(23-November-2022\)](https://ntepa.nt.gov.au/consultation/singleton-horticulture-project#Statutory-notice-(23-November-2022)). [Accessed 05 Feb 2023].
- [24] Hardy S, Barkley P, Treeby M, Smith M, Sanderson G, "Australian mandarin production manual," NSW Department of Primary Industries, 2017. [Online]. Available: https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/820624/Australian-mandarin-production-manual.pdf. [Accessed 05 Feb 2023].
- [25] Department of Infrastructure, Transport, Regional Development, Communications, "Road Trauma in Australia," 2022. [Online]. Available: https://www.bitre.gov.au/publications/ongoing/road_deaths_australia_annual_summaries. [Accessed 05 Feb 2023].
- [26] Health Direct, "Ali Curung Primary Health Centre," [Online]. Available: <https://www.healthdirect.gov.au/australian-health-services/20053454/ali-curung-primary-health-centre/services/ali-curung-0872-159-jangala-street>. [Accessed 05 Feb 2023].
- [27] NT Parks and Wildlife Service, "Iytwelepenty / Davenport Ranges National Park," 2023. [Online]. Available: <https://nt.gov.au/parks/find-a-park/iytwelepenty-davenport-ranges-national-park>. [Accessed 05 Feb 2023].
- [28] Schultz R, "Investigating the health impacts of the Ranger uranium mine on Aboriginal people," *Medical Journal of Australia*, vol. 215, pp. 157-159, 2021.