South Australia's new Biodiversity Act Discussion Paper

Submission from

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About Health and Survival in SA

About the Author

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Biodiversity Act discussion paper

I commend the Department's work in preparing this paper and I hope it will be accepted that my criticisms are intended to be constructive.

I have concerns about the format of the discussion paper in listing 10 Topics for "have your say" because it could suggest that the Department has already decided what is important whereas many would believe there are additionally important topics. I have included some in my introductory sections.

We are facing an issue which will determine the future of SA, perhaps within a few decades if global heating continues on a higher trajectory. Essentially it is a survival issue involving the interaction of the three crucial life support systems, a stable climate, water availability and healthy ecosystems composed of countless species, biodiversity. We must regard human health and the environment as indivisible.

Our present situation is one of great disadvantage.

Currently all these life support systems are deteriorating in the driest state in the driest continent. In addition there are other overwhelming factors even more difficult to address. I will use the pertinent words of others in two articles which I hope the Committee will read in their entirety.

Firstly "From Underestimating the Challenges of Avoiding a Ghastly Future" (lead author Corey Bradshaw plus 16 co-authors-)

"We report three major and confronting environmental issues that have received little attention and require urgent action.

First, we review the evidence that future environmental conditions will be far more dangerous than currently believed. The scale of the threats to the biosphere and all its life-forms—including humanity—is in fact so great that it is difficult to grasp for even well-informed experts.

Second, we ask what political or economic system, or leadership, is prepared to handle the predicted disasters, or even capable of such action.

Third, this dire situation places an extraordinary responsibility on scientists to speak out candidly and accurately when engaging with government, business, and the public. We especially draw attention to the lack of appreciation of the enormous challenges to creating a

sustainable future. The added stresses to human health, wealth, and well-being will perversely diminish our political capacity to mitigate the erosion of ecosystem services on which society depends. The science underlying these issues is strong, but awareness is weak. Without fully appreciating and broadcasting the scale of the problems and the enormity of the solutions required, society will fail to achieve even modest sustainability goals".
https://www.frontiersin.org/articles/10.3389/fcosc.2020.615419/full

Secondly from a paper this year in the British Medical Journal by Prof Liz Grant from Edinburgh University epitomises the problem;-

We have to navigate "two great global systems: 1) the planet's natural climate system which supports all life, but which is being destroyed by human actions, and in turn is destroying the ecosystems on which all life depends; and 2) a human made global finance system which also purports to support all life and livelihoods, but which is destroying much of the world's natural systems and as a consequence also destroying humanity".

"These two systems are entwined in complex interdependent and interconnected ways. The systems, or rather those who are trying to protect and enhance them, are at such odds with each other that finding meaningful pathways to connect through the noise has proved almost impossible. Of the USD $100 trillion plus of finances circling the world on a daily basis only a small proportion is dedicated to green financing"
https://www.bmj.com/content/384/bmj.q97

It would be wise to use the concept of a natural health service and life support into the advocacy for it brings enlightenment to many individuals, some governments and many economists who still regard the environment as a fringe issue

Let us now focus on the three crucial life support systems in SA, climate, water availability and healthy ecosystems composed of countless species which we call biodiversity. In summary;-

Climate change will cause global heating to continue

There is no indication that the progression of world global heating will be curtailed by current measures—because of fossil fuel usage and the current economy. Australia cannot influence this apart from advocating and delivering an effective policy – as only one nation amongst a bevy of nations who also transgress.

Temperature suitable for human survival is already exceeded in parts of N and W Australia. Some parts of SA will be become unliveable in the next few decades, and the same applies to their biodiversity and ecological services; regions will undergo desertification. Many species will die sooner for they will lack the ability to adapt.

Our urgent missive must be to urgently increase protection and support for existing vegetation and farming land ecosystems because this can be done by us and doesn't depend on other international action.

The future water supply for SA is precarious.

Obviously climate change impacts of increased evaporation and reduced precipitation means that a greater proportion of the total available water must be used to support all species and ecological services.

There is scientific concern that the River Murray is dying and requires emergency measures to have any chance or resuscitation. Current inept management must be replaced. The concept and need for environmental water is not accepted by the Eastern states.

The Great Artesian Basin which should be managed as a reserve of water is being compromised from overuse and possible contamination. The reserve in the SA part of the basin is diminishing. There is inadequate scientific data on water renewal.

Native vegetation essential for ecosystem services is denuded

This has been denuded in previous decades and this continues under an inadequate and outdated Native Vegetation Act.

We chop down fewer trees than other states because we don't have them to chop down. Applications for clearance are nearly always approved.

Australia's biodiversity continues to decline as evident in the Australian state of the environment report and international experts have produced evidence on the decline in Australia, and in SA ---Corey Bradshaw in this 2019 paper https://coreybradshaw.files.wordpress.com/2019/09/bradshaw-2019-rethinking-ecol.pdf and in this paper from Hugh Possingham TSX -

Australian Threatened Species Index 2023 where SA is probably the worst state

Taking these introductory points into account let us look at the Introduction and Points 1-10.

Introduction to the discussion paper

This in my view has some deficiencies. This paragraph at the beginning of the report is inappropriate.

"Biodiversity also underpins the world's economy. The World Economic Forum estimates that $44 trillion (over half of global GDP) is dependent on nature. In South Australia, biodiversity underpins tens of billions of dollars of our state's economy by supporting the continued success of our food, wine, tourism, and agricultural sectors"

It is unwise to mention the economy in the introduction, we are best to stay with ecological services, food production and their science. It is the current economy which is destroying our life supports- see sections in my introduction

The need for Biodiversity is explained to the Australia public and governments by using the Koala and the cockatoo without public or political understanding of ecological services. This is the fundamental problem referred to by Bradshaw (sections above)

Surely the introduction has to say that the current economy operates in a way that destroys ecological services. This in turn explains why the public is told Australia consumes natural resources at the rate of 4.5 Earths per year.

Today 29 February the Treasurer speaking from a conference in Brazil expressed his concern about declining economic growth. In a report for the UK government the distinguished economist Professor Dasgupta explained in 2021 that growth is a major factor in environmental degradation and GDP needs to be measured as good or bad. A summary of his view to remind the Committee is here https://johnmenadue.com/mr-morrison-the-g7-summit-and-the-report-biodiversity-natural-capital-and-the-economy/

Please remember the IPAT Equation: **I = P x A x T.** The equation maintains that impacts on ecosystems (I) are the product of the

population size (P), affluence (A), and technology (T) of the human population in question.

South Australia could be a leader in addressing this to aid our degrading environment or the new environmental legislation is likely to be ineffective.

The description of ecological services has to explain that these are life support systems. The fundamental problem is that Governments, commerce, media and much of humanity fail to understand the complexity of ecosystems, their increasing fragility and the impacts of their decimation.

Understanding soil is fundamental.

Soil, our ecological life support system for food production, consists of species of bacteria, fungi, viruses, nematodes, mites, worms and insects in fact two thirds of all species on the planet, to maintain its ecological structure and service. Pollinators, birds and animals are included in this ecological service to control pests and enhance productivity i.e. the biodiversity.

If listening systems are placed in the soil one can hear the constant cacophony of noise made be these creatures as they break down organic material to components which can be absorbed through the roots of growing plants.

Clearly soil needs to retain its health by receiving organic matter to break down to service the food needs of plants but in much farming today it is replaced by fertiliser to maintain and increase crop yields. The living soil deteriorates and is more easily blown or washed away by the increasing extreme storms of climate change.

https://theconversation.com/australias-soils-are-notoriously-poor-heres-how-scientists-are-working-to-improve-them-216640

Each of us possesses an ecological system in our intestines, the bacteria and enzymes in our small intestine- split apart ingested foods so the constituents can be absorbed into our body. The system is known as your microbiome. Much of my early research was done on this though it wasn't named the microbiome till later. Some patients with inflammatory bowel diseases resistant to conventional treatment can be treated successfully with a "poo-transplant"- the patient takes an oral dose of faecal material from healthy patient to modify their

disordered intestinal ecosystem. Similarly some soils lacking ecological life because of overcropping can only be restored by soil transplant when healthy soil is spread over dead soil.

All living animals have their own unique ecological system servicing their needs –in fact the living animal world can be seen as a series of overlapping ecological services.

The healthy natural world and healthy humans depend on healthy ecological services for both health and survival and this recognition must replace the primacy of economic thinking. Ecological systems operate like circular economies and are therefore sustainable but as yet we don't have circular economies, humans each have their own ecological service but that's as far as they fit into the natural balance of the world!

As the visionary economist Herman Daly said, the economy is a wholly owned subsidiary of the environment – not the reverse.

In conclusion the introduction to the discussion paper must "sell" the nature of ecological services and biodiversity better.

Overall I remain unconvinced that without a change in attitudes and government operations, a Biodiversity Act will be any more effective than the NVA and associated laws

Topic 1 – Biodiversity and South Australia's First Nations people

This explains the need to endorse and utilise Aboriginal environmental methods but does not show confidence by using them, for example cultural burning which is now scientifically secure, safer and does not distort the balance of species in native wood land.

The following should be strongly supported
"It is proposed that a new Act will seek to uphold the rights of First Nations peoples by aligning with other Australian jurisdictions and key international commitments (e.g. the United Nations Declaration on the Rights of Indigenous Peoples) and protocols….."

South Australia does not appear to have implemented UNDRIP. This submission to the Federal Parliament describes some SA actions within the principles of UNDRIP as unacceptable.

https://static1.squarespace.com/static/6035c9d62d099d4f3b8d7db4/t/62dde0108a53df4b0f493bef/1658707985736/Submission+89.pdf
Please give consideration to clarifying Topic 1.

Topic 2 Avoiding Impacts

I think this is very naive; I have worked making submissions for many decades on inappropriate development to know if the mitigation hierarchy document was respected by the oil and gas industry whereas the impression is they would use it to flare the gas from the latest well. Offsetting successes are a dying species.

What is the evidence that this system has had any impact to alleviate our dying environment?

Topic 3 – Transparent decision-making

Yes ESD has to be pursued with but we must be aware that many different interpretations have been used in the scholarly literature and many of these interpretations are used to cloud the issue and misuse it. Similarly "development" may be used in general terms or specific ones and if the latter it needs analysed as to measurable environmental outcomes. The government needs its definition
Over seen by environmental lawyers!

Topic 4 – Threats to biodiversity

It is essential that my comments on Topic 4 are read in conjunction with those on the introductory sections where insecurity of water supply was discussed. In SA's warming and drying climate, biodiversity and ecological services will require a greater share of the available water. Prudent management would be to regard SA's section of the Great Artesian Basin to have priority for life, human and biodiversity and avoidance of pollution and not as a soft take for mining. The reserve of water is diminishing and we do not have adequate data on replenishment.

For example the reduced flow into Mounds Springs should receive attention in these discussions on the survival of SA. Under the EPBC

Act the Springs have threatened species referred to in "The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin" https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=26 and are threatened by diminishing flow and by possible pollution from gas mining under existing national policies.

The Springs are a refuge for species of plants (refugia) which have survived extreme climatic changes for centuries- they have needed to adapt as they could not spread because of their isolation from alternative water resources. Currently science recognises that they are likely to carry genetic secrets of how other plants, for example food crops, will need to adapt to survive in rapidly warming climates and their importance cannot be overemphasised

The recent announcement of the NWS desalination project https://www.abc.net.au/news/2024-02-22/sa-government-commits-100-million-desal-study/103498852 may at first sight offer some comfort in alleviating the volume of water taken by the BHP mining operation which sits adjacent to the GAB. But comfort will be short lived (1) if the desalination project allows BHP mining to continue for longer than currently planned rather than address other vital long term needs e.g. biodiversity (2) unless biodiversity is given priority over further water consuming mining and some pastoral developments.

The NWS Project has not yet been aligned to protect the MNES EPBC Act Listed Mound Springs. These happenings suggest that the SA Minister is likely to be put into the same unfortunate position as the federal minister in the case of gas exploration in WA https://www.thesaturdaypaper.com.au/news/politics/2024/02/24/pliberseksidelined-over-gas-project-approvals#mtr

Clearly the NWS project could not be announced when the Biodiversity discussion paper was written but it must be addressed in the Act. The fundamental problem is that the Premier's statements are from a bygone era when climate change and ecological services were but a thought bubble on the horizon. He is reported to have said;-

"We have spent a lot of money on hospitals, we have spent a lot of money on roads, but never before have we contemplated a piece of infrastructure that is exclusively for the economic benefit of our state,"

https://www.abc.net.au/news/2024-02-22/sa-government-commits-100-million-desal-study/103498852

This is contestable, even the words economic benefit to the state, perhaps true if you want to live in a Saudi

The Premier said it would also help position South Australia to capitalise on the green transition.

The green transition of presumably renewable energy is certainly necessary but neutered by the federal Government's export of LNG and Scope 3 emissions.

Unfortunately the government is light years away from an understanding of the necessary new normal epitomised by ecological economist Herman Daly saying "the economy is a wholly owned subsidiary of the environment – not the reverse"

In conclusion, to be of relevance a Biodiversity Act will surely require require discussions to have occurred and conclusions detailed before the Premier's major development announcements.

The problem with earth shaking announcements is the difficulty of backing down when bad environmental impacts are discovered.

Indeed the issue is even wider. Where should necessary copper mining occur in Australia to cause the least damage to ecosystem services?

Many scientists now believe that Australian governments in their ignorance are leading us into environmental collapse. The fundamental problem as stated above is the IPAT Equation: **I = P x A x T.** The equation maintains that impacts on ecosystems (I) are the product of the population size (P), affluence (A), and technology (T) of the human population in question.

The needs of native vegetation

The discussion paper notes that much of South Australia's agricultural zone was cleared of native vegetation following colonisation, and most of what is left predominantly exists in small, isolated patches, subject to disturbance and degradation. Even today, the loss of habitat and fragmentation continues due to the clearing of native vegetation, intensifying land use, urbanisation, a growing population and associated infrastructure development. Population remains one of the largest drivers of biodiversity loss in South Australia

All this and the threats listed in the Topic 4 discussion paper have been known for some time but there is little action under the current

Native vegetation Act 1991 re land clearing etc, little action on ferals even in areas directly controlled by government e.g. in Parks, where fox clearance stopped --see also Topic 8 where the problem is discussed under Heritage Areas.

There has to be a recognition that native vegetation and our agricultural land fall into the same survival basket, of insecure water and ecological services which I detail in the introductory sections of this submission and in this article in Pearls and Irritations https://johnmenadue.com/our-life-support-systems-of-climate-water-and-ecological-services-are-in-collective-crisis/

Population expansion is a significant cause of biodiversity and ecosystem loss.

https://theconversation.com/population-cant-be-ignored-it-has-to-be-part-of-the-policy-solution-to-our-worlds-problems-219812

Why is this not mentioned in his section as a threat? Virtually every international expert on biodiversity lists population as a major threat- including Bradshaw. Plans to increase population should be discussed with the Department of the environment and this should be evident in statements and outcomes.

Why does South Australia not have population policy when it is under such threat? Presumably because to wants to increase its population for economic reasons and is prepared to disregard the environmental impacts.

Why is there no coverage in the discussion paper of the harm to our biodiversity- a life support system, by our economy which is not life support system when there are alternative forms of economy?

Topic 5 – Assessing the risk of extinction

Agreed, a scientific Committee must be formed and legislated as soon as possible.

Topic 6 – Biodiversity planning and reporting

As a preliminary to my proposals below let me point out that in the 2021 review of the native Vegetation Act TOR 3 was "To investigate into the level of awareness, education and engagement of the

community on the Native Vegetation Act (NVA) On Page 12 of the report "education", the NVA committee passed the buck to future committees.

The first problem with topic 6 is the omission of ecological services in the title and the discourse for it is this that needs explanation through education.

Currently the European Community is far ahead of the rest of the Western world in taking action on the ecological life support system that provides food. Unfortunately they have not educated the farmers who are in revolt at measures to arrest the deterioration in their soils, measures such as reduction in use of fertiliser which damages soil ecosystems and pollutes waterways. Crop yields and incomes will fall and the income from it.

Measures must commence in South Australia to vegetate land and sections of farms and to finance it. To deliver this we need and effective educational program with massive financing. In total these survival measures are likely to be comparable to the billions needed for the Northern Water project.

Who will educate? the government did little after the native vegetation review. The local newspaper will be a hindrance rather than a help.

My Alma Mater Edinburgh University ranks first in the UK for action on sustainability issues. It has numerous programs and I help by being on the climate 75 list- https://www.ed.ac.uk/c/climate-75 - 75 graduates of Edinburgh from around the world, leaders in their sphere who help University sustainability initiatives. Relevant to SA is the Edinburgh University revegetation program in regional Scotland --in the Ochil hills https://www.ed.ac.uk/sustainability/programmes-and-projects/climate-strategy/carbon-sequestration/drumbrae

The program sequests carbon, and is designed to maximize the co-benefits for biodiversity and local communities whilst generating research, teaching and learning opportunities. As part of this work, the University has recently purchased its first of several sites. "Drumbrae is a newly acquired site of around 431 hectares that will be managed by the University's Forests and Peatland Team to create woodland and improve open habitat".

We have three Universities in SA to take a role of partnership with government to deliver this ecological need- scientifically based action

on open treeless farms to reduce temperature and wind effect and increase biodiversity and protect ecosystems- with an educational role involving local communities. Big financial outlays will be needed.

Of relevance the government will need to encourage the inward looking gaze of the universities evident in the recent university review. https://johnmenadue.com/universities-and-the-future-of-humanity/ Several medical academics pressed for the universities to develop a role in addressing the future sustainability issues, The Report ignored them
https://www.education.gov.au/australian-universities-accord/consultations/consultation-accord-interim-report/submission/16861

Topic 7 – The benefits of information

Needed without question

Topic 8 – Achieving 30 by 30 Reservations

The success of this initiative in SA depends entirely on the state's ability to manage it. The omens are not good if we evaluate the current management of parks. The Shearman family has a Native Vegetation Heritage Agreement (NVHA) established under the Native Vegetation Act 1991

The Area (5-hectare Section 1162), under care for 33 years, comprises stringy bark (eucalyptus oblique) forest with endangered plant and animal species in a steep V-shaped valley, east to west, draining to the plains.

It has taken hundreds of hours of personal work to keep the area biologically intact dealing with the weeds accessing from the surrounding Cleland Conservation Park now a national park and even so bandicoot clearance by foxes has stopped soil turnover so necessary for healthy ecosystems see page 7 onward of
https://static1.squarespace.com/static/6035c9d62d099d4f3b8d7db4/t/614999f75b52125767273421/1632213497525/065+Doctors+for+the+Environment+Australia.pdf

It is essential to define how government will deliver 30 x 30 management and its cost

Topic 9 – Biodiversity – a shared responsibility

I suggest this is removed as a main topic; in fact the government itself negates it by continuing duck hunting, a species which likely has specific and uninvestigated roles in the ecological community,

I suggest shared responsibility be included as a small section in Topic 6

Topic 10 – Consequences of doing the wrong thing

Surely government has no option but to continue with command and control until the community is educated, indeed many pay a pittance of a fine to obtain a view when a tree is cut down. For many companies fines are but petty cash. Whopping fines educate and get into the media.

Some additional concerns

"Have your say"

The Productivity Commission system of consultation is worthy of consideration. Submissions are published on their web site which encourages experts to spend time writing a submission, they do so because many submissions lead to discussion between submitters and can lead to further feed back when submitters are invited to speak to the Commission. I fear SA is missing out.

Action must have priority

I expect all Ministers except Minister Close will disagree that this ecological problem must be a priority in governance. There are probably two or three decades before environmental and ecological collapse and despite this there is plenty of intent but little action

Minister Close has the most important job in the government and yet has so many other responsibilities I suggest she has two Assistant Minsters to help state wide with a helpful scientific management group including agricultural science and with a team of University educators

David Shearman 29.2 2024