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To the Committee Secretary
Senate Standing Committees on
Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600
By email: ec.sen@aph.gov.au

21 August 2025

Dear Environment and Communications Reference Committee,

RE: Submission to the Inquiry into Algal Bloom in South Australia

The Conservation Council of South Australia (Conservation SA) welcomes the opportunity to contribute to the Committee's inquiry into algal blooms in South Australia.

Conservation SA is an independent, non-profit, and strictly non-party political organisation representing more than 50 of South Australia's environment and conservation groups and their 90,000 members. We provide this submission to highlight the drivers, risks, and urgent need for action in relation to this unprecedented environmental challenge facing our coastlines and marine ecosystems.

The current algal bloom is not an isolated or random event. It is a direct manifestation of the climate crisis - driven primarily by the extraction and combustion of fossil fuels - coal oil and gas – and compounded by legacy land and water management issues. Fossil fuels are supercharging climate change, which in turn is intensifying the floods, upwellings and marine heatwaves that fuel blooms of this magnitude.

If we continue our present trajectory, events of this magnitude will become more frequent, longer lasting, and increasingly devastating. The window of opportunity to act is narrowing. Decisive, science-led, and collaborative action is needed now.

Terms Of Reference:

a. contributing environmental, land management or water quality factors;

The South Australian Government has identified three major contributors to the current bloom[1]:

- Elevated nutrient loads from the 2022–23 River Murray floods
- Cold-water upwelling during summer 2023–24
- A marine heatwave with sea surface temperatures 2.5°C above average

Each of these factors can be directly or indirectly linked to the influence of the human-driven climate crisis.

- **River Murray floods (2022–23):** The State Government's *River Murray 2022–23 Flood Review* confirms that this event was "unprecedented," the largest since 1956 and the third-highest on record. Alluvium's review concluded that "repeated episodes of heavy rainfall and widespread flooding" were driven by multiple climate drivers[2]. This demonstrates how extreme hydrological events, amplified by a warming climate, are increasing nutrient loads to marine environments.

- **Cold-water upwelling:** Research at James Cook University has shown that stronger ocean currents and altered wind patterns, consistent with climate change, are increasing both the frequency and intensity of upwelling along Australia's coast[3]. These changes shift nutrient dynamics and fuel large-scale blooms.

- **Marine heatwaves:** It is well-established that marine heatwaves are a consequence of changing climatic patterns. As Dr. Coleman, lead scientist on NSW's *Marine Estate Management Strategy Climate Change Project*, has stated: "the frequency and severity of marine heatwaves is increasing due to climate change." [4] These events compound stress on marine ecosystems, driving algal growth and biodiversity loss.

In combination, these factors illustrate that the bloom is not an isolated event, but part of a broader climate-driven trajectory.

If South Australia is serious about addressing the root cause of the algal bloom – **climate change** – it must rapidly reckon with its unhealthy relationship with gas.

Gas is an irresponsible and high-risk fossil fuel. Its emissions profile is driving the very climate instability now threatening South Australia's coastal ecosystems and communities. Continuing to expand or prolong gas production will only increase the likelihood of more frequent and severe algal blooms in the years ahead. The science is clear: the only responsible pathway is a rapid, efficient, and just phase-out of gas, with support for workers and communities in that transition.

[1] Algal-Bloom-Community-Forum-Presentation.pdf
[2] Department for Environment and Water - 2022-23 River Murray flood…
[3] Deadly upwellings of cold water pose threat to migratory sharks | New Scientist
[4] Marine heatwave predicted this summer – our scientist explains why we should be concerned

b. ecological, economic, cultural and social impacts of algal blooms with particular reference to:

Without decisive action—including strong commitments to phase out all fossil fuels - coal oil *and* gas - we can expect more frequent and more severe events. The consequences will be profound: long-term damage to marine species and ecosystems, disruption to fisheries and tourism, threats to regional economies, and even the closure of South Australia's beaches for extended periods. This is the legacy our governments risk leaving if urgent and transformative action is not taken. Algal blooms of this scale threaten South Australia's:

- **Tourism and fisheries:** Recreational and commercial fishing industries, as well as regional tourism operators, are already experiencing serious disruption. However, it is essential to recognise that these sectors fundamentally depend on healthy marine ecosystems. Without commitments to phase out fossil fuels, and address climate change, urgent protection and adaptation measures, their long-term viability is at risk.
- **Marine biodiversity and ecosystem health:** Large-scale blooms can cause oxygen depletion, habitat loss, and direct toxicity to marine life. These impacts cascade through ecosystems, threatening biodiversity, food webs, and cultural connections to the sea. There needs to be plans developed to interrupt and supplement the food chain to ensure our marine mammals are not adversely affected, also further sanctuary zones and marine protection must be considered to allow for repair and restoration of the marine ecosystem.
- **Communities and culture:** South Australians have deep cultural, recreational, and economic ties to the coast. The visible degradation of our waters erodes community wellbeing, identity, and trust in government action on the climate crisis.

c. the cultural and economic impacts on Indigenous communities, including any loss of access to traditional fishing;

As a non-Indigenous organisation, we do not speak on behalf of First Nations peoples. We recognise, however, their deep and enduring connection to Country – including sea and river Country – and the profound cultural, spiritual and economic significance these waters hold. The coastal and riverine environment is not only a vital source of sustenance but a living entity, carrying ancestral stories and cultural identity that have been sustained for tens of thousands of years.

Our position is that First Nations voices must be central in this inquiry and in the development of any future policies or management responses. This requires genuine partnerships, resourcing and decision-making for Traditional Owners, ensuring that cultural knowledge and rights are respected alongside scientific and economic considerations.

d. the coordination of state and federal government responses, including support, industry engagement and scientific advice;

There has been a genuine effort to respond, but the funding provided to date does not reflect the scale of the challenge. Support for business, tourism and research and monitoring is essential and must continue. However, when limited budgets are divided across multiple sectors, environmental protection and ecosystem recovery are too often placed last in line and

receive the least investment. This imbalance undermines long-term resilience, as healthy ecosystems are the foundation upon which industries and communities depend.

While those directly affected are best placed to speak to the adequacy of financial relief for people and business, this submission focuses on the critical need for greater investment in ecological restoration and protection.

e. the current support and recovery arrangements for impacted industries and communities, including:

financial support for fishing, tourism and other impacted businesses,

no comment

community resilience services, and

no comment

research, monitoring and restoration efforts;

We believe the current arrangements for research, monitoring and restoration are inadequate in both scale and scope when measured against the magnitude of the Algal Bloom crisis. While there has been commendable effort from state agencies, universities, and community groups, these efforts have been piecemeal and reactive rather than coordinated and future focused.

Several key issues can be identified:

1. **Underinvestment in monitoring and forecasting:** Marine temperature increases, the size and scale of flood events and upwelling of cold water were all well documented in advance. The problem was not the lack of data, but the absence of a dedicated scientific body tasked with analysing risks, connecting the dots and issuing early warnings. This highlights a systemic weakness, without proper institutional support high risk events cannot be anticipated and mitigated in time – and with no commitment to phasing out fossil fuels these are events are known to be more sever and more frequent in the future.

2. **Insufficient funding for ecological restoration:** current funding priorities place industry support and research ahead of ecosystem restoration and recovery. While business and community relief is critical, the environment consistently receives the smallest share of investment. This undermines long-term resilience, as industries and communities ultimately depend on healthy marine ecosystems for their survival. Restoration efforts for seagrass, reefs, and other critical habitats remain underfunded, despite their proven role in rebuilding biodiversity, buffering against climate impacts, and supporting fisheries and tourism. In addition to these measures, forward planning must also consider the potential need to supplement the marine food chain to reduce pressure on marine mammals during periods of ecological stress. Furthermore, the establishment of additional sanctuary zones should be prioritised to provide safe spaces for breeding, recovery and long-term ecosystem repair. These proactive steps are essential to ensure ecosystem can adapt and recover in the face of escalating climate-driven impacts. The Governments response to marine ecosystem health is that it will bounce back, but if we don't address the climate drivers then these event will occur more often and at a greater scale, making it almost impossible for the marine environment to recover.

3. **Lack of funded opportunities for community:** South Australia has a wealth of knowledge and experience within its community, yet this expertise is not adequately recognised or supported under current funding arrangements. Many individuals have voluntarily stepped away from their paid employment to contribute valuable services—such as speaking on radio, delivering training, and running community information sessions—without access to funding or compensation. This reliance on unpaid contributions is unsustainable and risks losing critical knowledge and capacity that could otherwise strengthen community resilience and public engagement.

4. **Failure to acknowledge the increasing scale and frequency of events:** Current arrangements often frame blooms as either exceptional anomalies or naturally occurring events rather than as part of a broader climate-driven trajectory. Without explicit recognition that these "perfect storm" events will occur more frequently and at larger scales, there is little focus on long-term adaptation, risk reduction, or systemic change. This lack of foresight leaves governments and industries in a reactive cycle of crisis management, rather than preparing strategically for an era where climate impacts on marine systems will be the norm, not the exception.

f. the adequacy of long-term monitoring, forecasting and prevention strategies, including funding and institutional support for marine science and environmental data collection;

It is important to recognise that the critical data already existed. Rising marine temperatures have been documented for decades and looking back we know that since September 2024 the marine temperatures have risen 2.5-3 degrees, we know the scale of the River Murray flood and cold-water upwelling, along with their nutrient loads were 'unprecedented'. What we were missing, was not data and information, but a dedicated, well-resourced team of scientists tasked with identifying risks, connecting these climate driven factors, and anticipating the "perfect storm' condition that led to this bloom. With proper monitoring, analysis and forecasting, mitigation or management actions could have been implemented earlier to reduce the severity of impacts.

This highlights a systemic gap: data is being collected but not consistently analysed or applied to prevention and preparedness. Without strong climate action – including a rapid transition away from fossil fuels – these events will become more frequent and more severe. We must strengthen investment in long-term monitoring, **forecasting** and institutional support for marine science to ensure that existing and future data is actively used to identify high-risk events, guide proactive responses, and protect both ecosystems and communities.

This inquiry represents an opportunity to confront the reality that climate change is amplifying environmental stressors and exposing the vulnerabilities of South Australia's coast and marine ecosystems. Addressing algal blooms must therefore be part of a broader strategy that cuts emissions rapidly and transitions away from fossil fuels;

South Australia does not need new gas projects. Gas use in power generation has halved over the past decade while renewable generation has tripled.[5]Start reducing gas capacity in

[5] Open Electricity: NEM

preparation for its phase out. Australia already has enough gas generation capacity today to meet occasional peaks in demand expected.[6]

Global markets confirm this: LNG supply is set to grow 47% by 2030, but demand only 20%.[7] Nearly a quarter of LNG supply will be surplus. Expanding Australian gas will not help our trading partners—it will only add emissions and worsen climate impacts, like algal blooms, here and abroad.[8]

The alternative is clear:

- **Storage and renewable fuels** (batteries, pumped hydro, green hydrogen) can replace peaking gas.
- **Electrification of homes and businesses** makes energy cheaper, healthier, and cleaner—cutting pollution and reducing risks like algal blooms.

Gas is not a transition fuel. It is the problem.

Algal blooms are not only an environmental anomaly—they are a warning signal. South Australia must act with urgency, guided by science, and in collaboration with communities, industries, and environmental organisations.

Thank you again for the opportunity to provide a submission to the Committee's Inquiry into Algal Blooms in South Australia. Please note again that the Conservation Council SA would be pleased to provide oral evidence to the Committee relating to our submission.

If you require further information, please contact me

Yours sincerely,

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Chief Executive

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[6] Climate Council - SEIZE THE DECADE: How we empower Australian communities and cut climate pollution 75% by 2030
[7] World Energy Outlook 2024 – Analysis - IEA