SENATE SUBMISSION: ALGAL BLOOMS IN SOUTH AUSTRALIA

For ENVIRONMENT AND COMMUNICATIONS REFERENCES COMMITTEE – August 2025

clean ocean foundation
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SA Algal Bloom

Clean Ocean Foundation (COF) is an Australian environmental charity and Registered Environmental Organisation, established in 2000. The Foundation undertakes both collaborative and independent research, including its work on the National Outfall Database (NOD). For more than two decades, COF has been recognised as an honest broker, supporting communities with concerns about the water sector.

The algal bloom in South Australia is the result of a combination of environmental pressures unlike anything in our nation's history. While the exact interplay of these pressures is still being studied, one fact is undeniable: Australia is pushing its coastlines, rivers, ecosystems, and communities to the brink of collapse. Our current exploitation of the natural world is unsustainable. As a nation, we have failed in our duty to properly protect the marine environment and now must urgently make reparations to both the environment and the communities harmed by our negligence.

Climate change is a major driver, but not the only one. Land-based pollutants — particularly wastewater outfall discharges — play a critical role. Outfalls release nutrients and micropollutants that can trigger or intensify ecological damage[i], including algal blooms, reproductive disruption in marine species, the spread of pathogens and invasive species, and long-term bioaccumulation of toxins. They also pose risks to recreational users and to water supplies.

Since 2000, **Clean Ocean Foundation** has been warning of these dangers. Through the **National Outfall Database**[ii], we monitor 192 outfalls across the country and support communities demanding stronger protections against ocean pollution. In 2021, we launched the **Stop the Red Tide**[iii] campaign to highlight the urgent need to reduce nutrient loads in outfalls.

After 25 years working in this field, our conclusion is clear: Australia's outfall licensing system is broken. Recent disasters — the South Australian algal bloom, the 2024 algal bloom in WA[iv], and "sewage balls" washing up on Sydney beaches in 2024/25[v] — cannot be dismissed as isolated accidents. They are symptoms of a failed ocean-dumping policy.

Too often, the precautionary principle — the bedrock of sound environmental management — is sacrificed in favour of minimising short-term costs. Risk management only works if every risk is properly addressed, not just those convenient to vested interests within the water industry.

Other nations have shown leadership. The **European Union**, recognising the severity of these risks, has adopted world-leading standards through its *Revised Directive on Urban Wastewater Treatment*, part of its Zero Pollution Action Plan. By 2035, EU wastewater plants must remove organic matter; by 2039, nitrogen and phosphorus; and by 2045, micropollutants[vi].

In contrast, many Australian communities living with the fallout of events like the SA bloom feel deep disillusionment and mistrust. Too often, "community consultation" is treated as a

box-ticking exercise rather than a genuine partnership. Unless communities are respected, resourced, and empowered, confidence in environmental governance — and in democracy itself — will continue to erode.

That is why we urge this committee to act decisively to prevent further collapses of our marine and river ecosystems. Clean Ocean Foundation proposes a **three-point Clean Ocean, Clean Water Plan** for outfalls in Australia:

1. **National Standards and Reporting**
   Establish a Federal EPA with strong powers to set standards and require mandatory, transparent reporting of all pollutant and micropollutant discharges into oceans and rivers.[vii]
2. **Pollution Load Caps**
   Impose interim pollution load caps on all outfalls, ban new outfalls, and enforce clear reduction targets.
3. **Zero Pollution Targets**
   Commit to national zero-pollution targets in line with the EU, with an immediate working group — including community stakeholders — to assess implementation in Australia.

The Foundation knows that there are many community groups ready to work to protect and restore our rivers and oceans. The committee must not let those people down. There is too much at stake.

We would be happy to expand on any issues raised by our submission in person if requested.

John Gemmill

CEO Clean Ocean Foundation

Background

Table 1 Outfalls Australia - NOD 2022

	Regulator	WTA	Outfalls
VIC	EPA Vic	9	19
NSW	EPA NSW	13	35
QLD	Ministry	18	55
WA	EPA WA	1	12
SA	SA EPA	1	10
TAS	EPA Tas	2	47
NT	Ministry	1	14
		45	192

Table 2 Wastewater treatment quality COF Guidelines

Australian Outfalls	Number	Pollutant Load
Primary	9	Extreme
Secondary	108	Very High
Tertiary	61	Moderate
Advanced Tertiary	2	Reduced
Quaternary	0	Zero Pollution
Misc.	12	
	192	

Table 3 -Australia's 192 Coastal Outfalls – NOD 2020/21

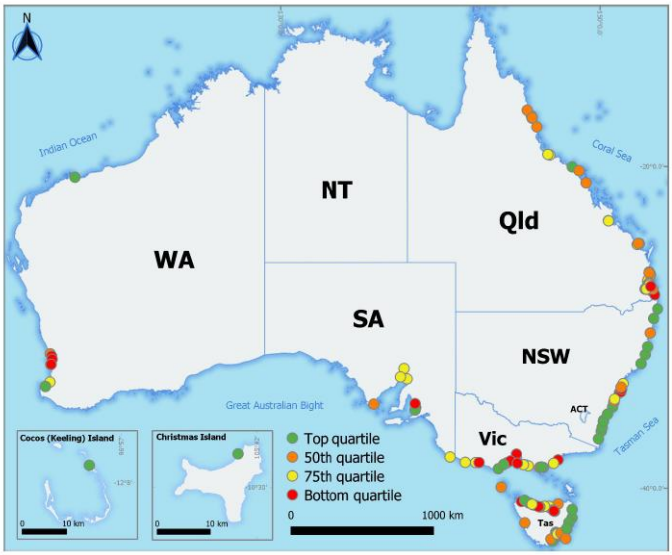

Table 4 Pollutant Loads per Capita - Top 10 NOD Rankings 20/21

Table 4. Total nutrient load per capita discharged by ten highest nutrient load producers from the bottom 25% quartile (2020/2021 FY).

Rank	Outfall	Nitrogen load (kg)	Phosphorus load (kg)	Total nutrient load (kg)	Population (ABS 2021)	Nutrient load/capita (g/C)
140	VIC - Warrnambool	165,107	106,276	271,383	35,533	7,637
141	WA - Beenyup	236,486	99,806	336,292	660,000	510
142	SA - Bolivar WWTP	323,925	68,622	392,547	470,000	835
143	QLD - Kawana	333,526	63,456	396,982	157,169	2,526
144	QLD - Luggage Point	296,781	106,505	403,285	807,000	500
145	WA - Woodman Point	422,798	69,233	492,031	760,000	647
146	NSW - North Head	483,215	59,591	542,807	1,358,440	400
147	NSW - Malabar	616,096	73,491	689,587	1,700,000	406
148	VIC - Boags Rock (ETP)	2,401,876	840,535	3,242,411	1,900,000	1,707
149	VIC - Werribee (WTP)	3,372,907	1,296,331	4,669,238	2,400,000	1,946

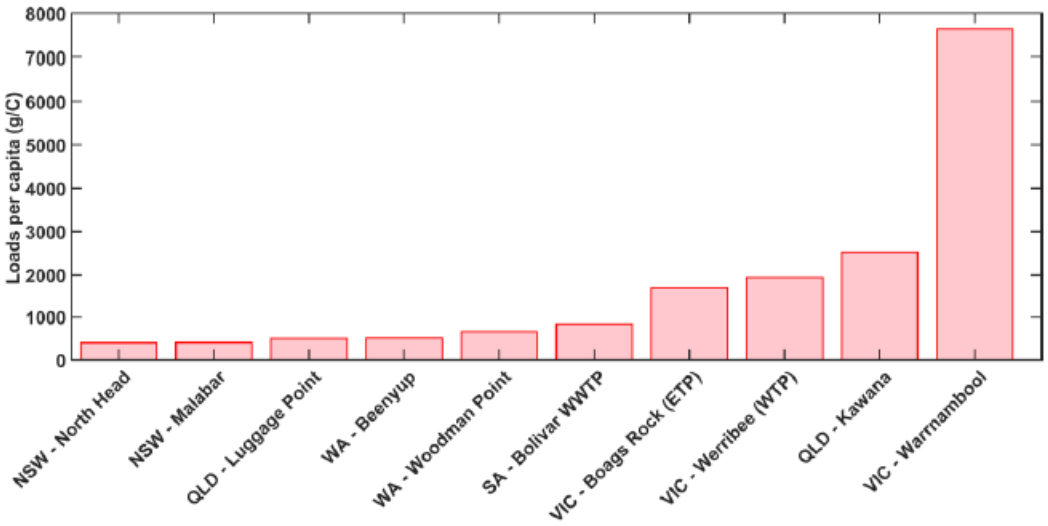

Figure 2. Total nutrient load per capita discharged by ten highest nutrient load producers from the bottom 25% quartile sorted from low (left) to high (right).

Table 5 Australian Local Government Association July 2024 - Motion Passed

Motion number 144.1 Noosa Council QLD

This National General Assembly calls on the Australian Government to strengthen environmental initiatives through investment in wastewater recycling and the adoption of a collaborative approach, both as a commitment to environmental sustainability and to foster trust within communities.

NATIONAL OBJECTIVE

Australia's environmental challenges necessitate a national dialogue on wastewater recycling. This is a matter of paramount national importance as it directly impacts the well-being of our citizens, water security, the preservation of our environment, and the overall sustainability of our nation. The need for a comprehensive and collaborative strategy underscores the urgency of this debate, emphasizing the importance of forging a united front to address this critical issue.

KEY ARGUMENTS

1. Reforms for Safe Implementation: Implementing comprehensive water regulation reforms ensures the safe deployment of wastewater recycling projects. Transparent reforms and more transparent and informed, evidence-based participation build trust by assuring the public of the safety and reliability of recycled water.

2. Technological Innovation: Investing in research for wastewater treatment technologies, especially for 'forever chemicals' like PFAS and other emerging contaminants, demonstrates a commitment to environmental safety and builds trust in the government's ability to address emerging challenges.

3. PFAS Source Mapping: Collaborating with environmental agencies to map PFAS contamination sources is essential. Transparent reporting and active management build trust by demonstrating a commitment to protecting wildlife and ecosystems.

4. Water Recycling Targets: Advocating for wastewater recycling targets for all outfalls. Clear targets build trust by ensuring a consistent commitment to sustainable water management practices.

Conclusion: Investing in wastewater recycling will strengthen the Australian Government's commitment to environmental sustainability and build trust within communities. Trust is the bedrock upon which sustainable policies stand, and by actively involving citizens and local governments, the government can foster a united front towards a more sustainable and resilient future.

Clean Ocean Foundation History

2000 Clean Ocean Foundation is established as an environmental charity.

2006 After a long campaign, welcomes Victorian government's decision to upgrade Eastern Treatment Plant to discharge Class A+ advanced.

2015 - 2024 (Ongoing) Produces the National Outfall Database annually under auspices of the Federal National Environment Science Program (Marine and Coastal Hub)

2020 – Independently releases National Outfall Upgrade Strategy (NOUS 2030) advocating for a national approach to wastewater treatment and water recycling.

2021 – Successfully intervened (VCAT) related to proposed upgrade of Warrnambool Wastewater Treatment approvals process

2022 – Releases national Clean Ocean Clean Water Policy.

2022 – Submission Federal Inquiry into plastic pollution in Australia's oceans and waterways.[viii]

2022-3 – Petition Modernise Victoria's Water Policy to allow use of recycled purified water (over 16, 000 signatures)[ix]

2023-4 Petition (almost 10,000 signatures) calling for a Federal Parliamentary Inquiry into pollution including micropollutants and microplastics from Australia's 192 outfalls[x]

2024 – Our open letter to Minister Plibersek related to the use of recycled water and its impact on ocean pollution. Due for release Apr 2024[xi]

2024 – Submission to PFAS Inquiry[xii]

References

[i] Warwick, K.G.; Ryan, M.M.; Nice, H.E.; Wright, I.A. Contribution of Treated Sewage to Nutrients and PFAS in Rivers Within Australia's Most Important Drinking Water Catchment. Urban Sci. 2025, 9, 182. https://doi.org/10.3390/urbansci906018
[ii] https://nod.org.au/
[iii] https://www.facebook.com/stoptheredtide
[iv] https://www.abc.net.au/news/2024-01-18/algal-bloom-shuts-mullaloo-beach-north-of-perth-sewage/103362906
[v] https://www.abc.net.au/news/2025-01-15/epa-criticised-for-dropping-probe-into-balls-on-beaches/104817182
[vi] Urban wastewater: Council adopts new rules for more efficient treatment https://www.consilium.europa.eu/en/press/press-releases/2024/11/05/urban-wastewater-council-adopts-new-rules-for-more-efficient-treatment/
[vii] https://www.cleanocean.org/s/JULY2024-Clean-Ocean-Foundation_Senate-Submission-Nature-Positive-Environment-Protection-Australia-B.pdf
[viii] https://www.cleanocean.org/s/22DEC2022_Clean-Ocean-Foundation-Inquiry-in-to-Plastic-Pollution-in-Australias-Oceans-and-Waterways.pdf
[ix] https://www.change.org/p/save-the-weedy-seadragon-modernise-victoria-s-water-policy-to-allow-use-of-recycled-purified-water
[x] https://www.change.org/p/listen-to-the-dolphins-our-shameful-record/dashboard?source_location=user_profile_started
[xi] https://www.cleanocean.org/s/APRIL2024-Australian-Water-Network_Water-Recycling-Open-Letter-to-Hon-Tanya-Plibersek-MP.pdf
[xii] https://www.cleanocean.org/s/DEC-2024-PFAS-and-a-Clean-Ocean-Submission.pdf