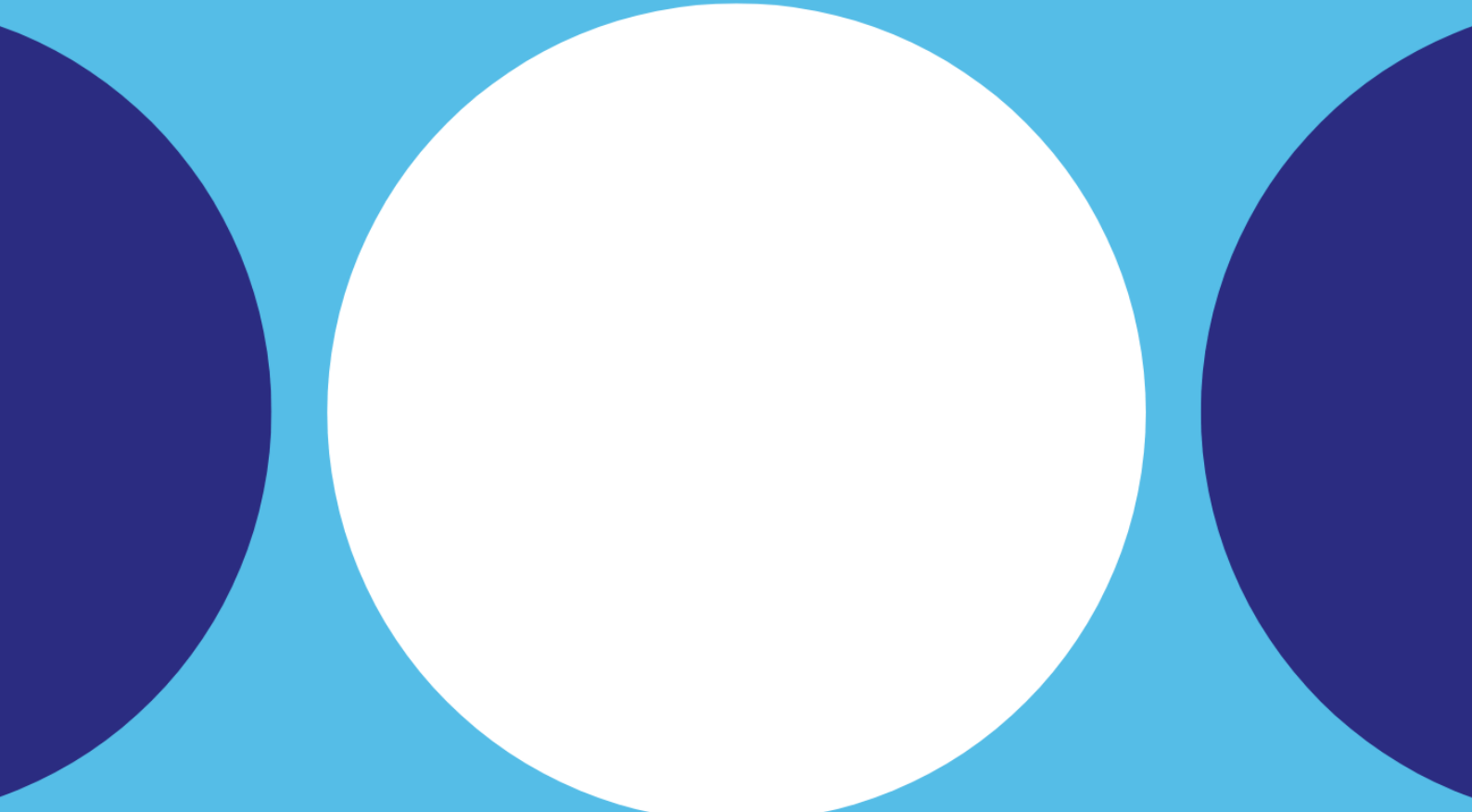


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Senate Inquiry: Algal Blooms in South Australia Submission

21 August 2025



This LGA South Australia submission to the Senate Inquiry into Algal Blooms in South Australia has been prepared in partnership with the Adelaide Coastal Councils Network (ACCN) and South Australian Coastal Councils Alliance (SACCA).

Recommendations

LGA, ACCN and SACCA consider South Australia's current algal bloom event an emergency, and one that is causing nationally significant harm in an offshore area, in both State and Commonwealth Waters, and call for a national, coordinated response, including:

1. a national framework to recognise and manage large scale marine mortality events caused by harmful algal bloom events or severe marine heatwaves, including:
 - funding for affected industries, and for councils to assist with environmental clean-up, restoration activities, and safe reopening of affected areas
 - nationally coordinated communication of accurate, science-based information to the public, and
 - amending the *National Emergency Declaration Act 2020* to enable such large-scale and far-reaching algal bloom events to be declared a national emergency.
2. development and delivery of a Community Wellbeing and Resilience Framework to support social and mental health outcomes in communities affected by harmful algal blooms and other large-scale marine mortality events.
3. acceleration of Australia's decarbonisation efforts to reduce greenhouse gas emissions and ocean warming
4. federal funding to establish comprehensive, long-term monitoring and baseline data collection for the Great Southern Reef
5. federal funding to enable councils to respond to, and recover from, climate related events including algal blooms and build the resilience of councils and communities to climate change generally.

LGA would like the opportunity to talk to this submission at a public hearing.



ADELAIDE COASTAL COUNCILS NETWORK

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About us

LGA South Australia

At LGA South Australia our purpose is to help local government build stronger communities.

As the peak body proudly representing 68 councils across South Australia and the Anangu Pitjantjatjara Yankunytjatjara, we champion the needs of our members every single day.

Working for our members, we represent the interests of local government at both state and federal levels and provide robust and innovative solutions to local challenges.

Whether it's policy development, coordination on important issues or training and development, our work is about empowering local government to deliver a real, lasting impact for South Australians. Our trusted services also include tailored cover and risk services for the sector, and access to pre-qualified suppliers and panels to save councils time and money.

With a focus on leadership and representation, our work is driven by a shared passion for making a difference in the lives of the communities.

LGA welcomes the opportunity to partner with the ACCN and SACCA to provide a submission on the Senate Inquiry into the causes, frequency, scale and duration of recent algal blooms in South Australian marine and coastal environments.

Adelaide Coastal Councils Network

LGA is a member of the ACCN, which is the collective voice for seven Adelaide metropolitan coastal councils. These councils work in partnership with LGA on coastal planning and management.

The ACCN is committed to the proactive, contemporary and sustainable management of Adelaide's metropolitan coastline. with a strategic focus on delivering:

- coastal adaptation
- resilient and sustainable coastal infrastructure and built environments
- flourishing catchments and coastal ecosystems
- thriving coastal communities.

The ACCN's key roles are advocacy, knowledge sharing and collaboration.

South Australian Coastal Councils Alliance

SA Coastal Councils Alliance (SACCA) provides coordination, collaboration and advocacy support for South Australian coastal councils and their communities.

SACCA currently represents the 26 regional coastal councils across South Australia. SACCA provides an informed, coordinated advocacy voice and a forum for information sharing and networking on coastal management issues facing regional councils across South Australia.

SACCA's mission is 'to provide strong leadership, support and advocacy for the benefit of all South Australian coastal Councils and their communities.

SACCA works closely with LGA and ACCN on coastal issues.

Background

The current algal bloom was first detected in South Australia in mid-March 2025 when brown foam and dead fish washed up on beaches on the Fleurieu Peninsula. Surfers reported irritation and respiratory issues after being in water containing the foam.

It has affected some 4,400km² of South Australian and Commonwealth Waters, including in Investigator Strait, Gulf St Vincent, Spencer Gulf, south of Kangaroo Island and Southeastern Coastal Waters.

The algal bloom includes harmful algal species, not least *Karenia mikimotoi*, that have had a devastating impact on the coastal waters and beaches of the Fleurieu Peninsula, Kangaroo Island, Eyre Peninsula, Yorke Peninsula, Limestone Coast, and Adelaide metropolitan region, as well as estuarine waters including the Coorong and Port River.

The *Karenia mikimotoi* species has caused the death of thousands of fish and shellfish (some 460 species) which have either washed ashore or dropped to the ocean floor. It has damaged vital benthic (ocean floor) flora, devastated fishing, aquaculture and tourism industries, and coastal and coastal-related businesses, and disrupted councils that support coastal communities. as well as caused psychological distress to coastal residents and visitors alike.

LGA, ACCN, SACCA and coastal councils, in collaboration with the State Government, are working hard to ensure that the short-term impacts of the bloom are effectively managed, that business and communities are supported, and that communities emerge from this catastrophic event more resilient and better prepared for future events.

While the short-term impacts are currently overwhelming councils and their communities, it is important they have hope for the future, hence LGA, ACCN and SACCA see strength in all

tiers of government working together with industry and academia to support efforts to response, recovery and building resilience to future algal blooms.

This submission to the Senate Inquiry has been prepared by LGA in partnership with the ACCN and SACCA, which collectively represent all 34 coastal councils in South Australia and, together with the SA Government, work closely on coastal and climate related issues.

For example, the LGA's \$3.7 million SA Climate Ready Coasts Program, funded through the Australian Government's Coastal and Estuarine Risk Mitigation Program, the Local Government Research and Development Scheme and state Coast Protection Board, is delivered through a partnership with the Department for Environment and Water, SACCA and ACCN, to improve coastal hazard adaptation planning in SA.

The collaboration between state and local government is also evident in SACCA, ACCN and the Mayor of the Kangaroo Island Council and CEO of Yorke Peninsula Council being invited to the State Government's Algal Bloom Stakeholder Reference Group.

Coastal councils take considerable pride in their coastal areas which provide enormous community, lifestyle, wellbeing, environmental, scenic and economic value and benefits.

The algal bloom continues to have significant environmental, economic and social impacts on coastal communities and the wider South Australian community.

It is important that councils and their communities are supported through the response to and recovery from this event. It is also vital that we look to the future and invest in initiatives that build the ocean's resilience to climate change.

Submission report

This submission to the Senate Inquiry into Algal Blooms in South Australia has been prepared in partnership with the ACCN and SACCA.

The Terms of Reference of the Inquiry are included at Appendix 1.

The causes of the algal bloom

It is understood that the causes of the bloom are:

1. a marine heatwave since September 2024 with water up to 2.5°C warmer than normal
2. potentially, an increase in nutrients from River Murray floodwaters in 2022-23 and a cold-water upwelling in summer 2023-24
3. long periods of consistently low winds, calm seas and clear skies that promoted the growth of the bloom during the heatwave conditions

4. habitat loss and degradation that have left our marine ecosystems less able to cope with environmental stressors like the algal bloom.

Impacts of the algal bloom

The 34 coastal councils in SA report significant environmental, economic and social impacts from the algal bloom. Impacts include:

- environmental impacts:
 - the death of thousands of species of fish and shellfish and some mammals. Unlike a marine disease, which tends to target just one species, this event has resulted in the deaths of some 460 species of fish and marine invertebrates.
 - damage to benthic cover, such as habitat-forming hard bottom / shell species, sponges and heavier reef species (that do not often wash up), and habitat-forming marine plants.
- economic impacts (as evidenced by the interest in government grants):
 - the closure of some commercial fisheries and aquaculture
 - a reduction in recreational fishing
 - reduced community confidence in purchasing SA seafood products
 - less visitation to coastal areas for recreation and tourism, and the knock-on impacts on coastal (e.g. accommodation, eateries, shops) and coastal-related businesses (e.g. seafood and fishing tackle stores). For example, at Victor Harbor on the Fleurieu Peninsula, the Horse Drawn Tram, a major attraction, was suspended for several weeks due to health concerns for the horses and staff from airborne particles. Visitor Centre records showed a 35 percent drop in visitation in the second quarter of 2025 compared to the previous year.
 - reduced seafood consumption in hospitality businesses.
 - councils incurring costs to clean-up beaches. For example, one metropolitan Adelaide council had to remove 14 truckloads (54 tonnes) of dead marine life in a single day due to the smell of rotting animals, the human health concerns and to enable safe access to a popular beach. To date, the council has spent over \$14,000 on such clean-up activities, and they are expecting this to increase
 - councils being asked for rates relief/deferment based on the economic impacts of the bloom.
- socio-cultural impacts from:
 - people suffering eye, skin and respiratory irritation to aerosol of the foam generated by the bloom
 - dogs becoming ill from eating dead fish

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- people being confronted by the sight of many dead marine animals on the beach
- people not undertaking leisure activities (e.g. walking on the beach, surfing, recreational fishing)
- general loss of coastal amenity and quality of life
- impacts on local businesses resulting in reduced hours/loss of income/job loss and
- people's grief over what has been lost and anxiety about the future (eco anxiety).

The algal bloom is causing severe distress and anxiety to coastal communities and the wider SA community, potential impact on First Nations Peoples with strong cultural connections to waters.

It is also important to note that the full extent of impacts from the algal bloom may not be immediately evident:

- environments might take many years to recover (if they do recover)
- fisheries may not recover for many years as fish recruitment is being impacted
- businesses along the coast may not realise the full impact of economic downturn until after peak visitor periods in 2026
- markets may not recover until confidence is restored
- the broader mental health impacts may not be known for many years.

Responses must take into the various lead/lag times of the many complex and interrelated impacts.

Federal and State Government support

Given these wide-ranging and devastating impacts, LGA, ACCN and SACCA welcome the Federal Government's recent announcement of assistance to SA to respond to the algal bloom, including:

- \$14 million in funding
- investing in long-range forecasting of marine heat waves by the Bureau of Meteorology in time for the 2025-26 summer
- investing in research to better understand the toxic effects of *Karenia mikimotoi*, rapid early-warning and detection methods and examining the toxic threats to seafood production via the Fisheries Research and Development Corporation
- proposed fast-track assessment to ascertain whether any local marine flora and fauna need to be added to the threatened species list as a result of the bloom which, if they were, would then trigger conservation plans.

LGA, SACCA and the ACCN also welcome the State Government's:

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- \$14 million to match the Federal Government's funding for a total of \$28 million to respond to the algal bloom. In particular, we support:
 - the \$8.5 million to better monitor and test coastal and marine waters, assess fish stocks and develop a plan to manage future events, the consistent beach signage, posters and social media tiles on the bloom, including the impacts on human/dog health
 - the \$1 million to assist councils to remove dead marine life from affected beaches
 - the \$2 million to support local activities and small projects to help coastal communities recover and reconnect
 - public forums in affected coastal areas, a new central website and other tools to support clear communication for industry and the public
 - the grants and recovery services to help impacted businesses manage the effects and plan for recovery.
- convening the multi-agency Algal Bloom Taskforce and various advisory and working groups, including the Stakeholder Reference Group that SACCA, ACCN and the Mayor of the Kangaroo Island Council and CEO of the York Peninsula Council sit on, and collectively represent the 34 coastal councils in SA.

What we seek from the Federal Government

A national, coordinated response

LGA, ACCN and SACCA consider South Australia's current algal bloom event an emergency, and one that is causing nationally significant harm in an offshore area, in both State and Commonwealth Waters, and hence call for a national, coordinated response to this algal bloom event and future events, including:

- 1. A national framework to recognise and manage large-scale marine mortality events caused by algal blooms or severe marine heatwaves*

The framework should include:

Funding

- rapid access to coordinated federal support for affected industries, particularly tourism, fishing, and aquaculture
- funding to assist Local and State Government with environmental clean-up, restoration activities, and safe reopening of affected areas.

Communications and education

- national leadership and coordination in the communication of accurate, science-based information to the public during marine environmental crises. This could include:
 - science-based communications on the algal bloom across all types of media, including encouraging people to photograph dead fish on their beaches and upload the photos to [iNaturalist](#)
 - a dedicated national marine information portal providing real-time, science-based updates on seafood safety, water quality, and tourism conditions
 - funding rapid deployment of consumer-confidence campaigns led by trusted science and industry voices.

Misinformation and media speculation during the initial stages of the bloom event caused significant confusion and likely impacted coastal tourism and businesses, and coastal-related business, such as fish retailers and fishing tackle stores.

Trusted, science-based information on algal blooms for communities is important to counter misinformation and theories on the algal bloom, increase and maintain confidence in seafood safety and support tourism and local businesses during and after such these types of events. It will also give communities the confidence in the commitment of all levels of government to support them and manage this crisis, which is important for the mental health of coastal communities and the wider South Australian community.

LGA, ACCN and SACCA could help amplify this type of messaging through to all councils.

Legislation and policy

- amending the *National Emergency Declaration Act 2020* to enable large-scale and far-reaching algal bloom events to be declared a national emergency
- amending the Australian Government Crisis Management Framework (AGCMF) and Disaster Recovery Funding Arrangements (DRFA) to recognise the growing impacts of climate-driven marine disasters, including algal blooms, and ensure there are clear mechanisms in place for rapid, coordinated national response including federal support to affected industries, including tourism, fishing, and aquaculture, as well as affected communities and the councils that support them, ensuring timely relief, recovery funding, and long-term resilience planning
- including harmful algal blooms in the next iteration of the Aquaplan, a national strategic plan for aquatic animal health.

2. Development and delivery of a Community Wellbeing and Resilience Framework to support social and mental health outcomes in communities affected by harmful algal blooms and other large-scale marine mortality events.

The framework should recognise the significant psychological, social, cultural, and economic impacts these events can have on individuals, families, and communities, including First Nations communities, particularly those whose livelihoods and identities depend on healthy marine ecosystems. This would provide:

- embedded, locally delivered mental-health services
- peer support networks
- targeted workforce-retention initiatives
- long-term resilience planning for coastal communities.

3. Accelerate Australia's decarbonisation efforts to reduce greenhouse gas emissions and, in turn, ocean warming

This should include:

- continuing Australia's commitment to net zero, and strongly advocating for carbon mitigation/de-carbonisation internationally
- meeting the current commitment to the Nationally Determined Contribution (NDC) for 2030, under the Paris Agreement and enshrined in the *Climate Change Act 2022*
- making a strong emission reduction commitment as part of the upcoming new NDC for 2035
- ensuring funding is allocated to actions to achieve the above and our national net zero emissions by 2050 commitment.

While temperature anomalies and nutrients are often the main drivers of algal blooms, there is also research overseas showing that increased acidity (dissolved CO₂) promotes the growth and possibly increases the toxicity of *Karenia* blooms. Thus, increased ocean acidity over time could favour the [growth of harmful algal blooms](#).

4. Commit federal funding to establish comprehensive, long-term monitoring and baseline data collection for the Great Southern Reef

This should include sustained State–Federal Government investment in permanent coastal and marine biological and ecological monitoring and baseline data collection covering the Great Southern Reef and other key habitats, building on existing commitments and integrating with national observation networks.

This funding should:

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- support the establishment of local, accredited biotoxin-testing capacity in South Australia with publicly reported turnaround targets (e.g. <48 hours from sample receipt to result)
- provide the ecological baselines needed to measure change, assess impacts of marine mortality events, and track recovery or restoration success, modelled on the Great Barrier Reef Foundation funding arrangements, ensuring it does not place additional financial burdens on affected industries or local governments

The Great Southern Reef Foundation has estimated that such monitoring would cost approximately \$40 million over ten years. This investment is critical to understanding the current health of this vital ecosystem, tracking changes over time, and informing evidence-based management responses to climate change, marine heatwaves, and harmful algal blooms. A national baseline dataset will support both environmental protection and the sustainability of dependent industries such as fishing, aquaculture, and tourism.

In addition, consideration should be given to mobilising community groups to help with monitoring, for example, by enabling them to test coastal and estuarine waters (e.g. grants for the purchase of microscopes¹ and training materials) and upload the results to, for example, the SA Algal Bloom Water Sampling Dashboard to extend water testing across the state.

Scientists cannot be everywhere, whereas people are on beaches across the state each day, are invested in them and the health of coastal and marine waters and want to *do something*. Mobilising citizen scientists to test waters would enable such testing to be extended across the state at a relatively low cost.

5. Commit federal funding to enable councils to respond to climate related events such as algal blooms

SA's coastal councils are increasingly on the frontline of climate change-related events. For example, this winter alone there have been three major storm events coinciding with high tides, which have caused significant storm damage to public infrastructure, private property and natural coastal environments, and the recovery costs exceed many councils' financial capacity.

The Australian Local Government Association and LGA have previously called for an annual [\\$400 million local government Climate Adaptation Fund](#) to support local, place-based solutions to protect communities from the impacts of Australia's changing climate.

¹ Estuarine Ecologist, Faith Coleman, advises that such water testing can be done by anyone with a suitable microscope that can cost as little as \$1700.

In light of this algal bloom event, LGA calls for an expanded local government *Climate Resilience Fund* with additional funding to invest in:

- grey and green infrastructure (e.g. stormwater, wastewater) to reduce nutrient and dissolved carbon pollution discharge to terrestrial waters (including the Murray River) and, in turn, to coastal, estuarine (including the Coorong) and marine waters
- the protection and restoration of coastal and marine ecosystems such as shellfish reefs, seagrass meadows and kelp forests, to increase their resilience to future algal bloom events. Living reefs dominated by Australian flat oysters were common in South Australia's gulfs and bays in the 1800s, spreading across 1,500 km of coastline. Today, no reefs of this kind remain - mainly because of the impact of historical fishing, dredging, water pollution and disease. These lost reefs once acted as natural filters, absorbing excess nutrients that found their way into the ocean. There is evidence that shellfish reefs filter *Karenia mikimotoi* and that seagrass meadows host a bacterium that kills it. Restoring SA's shellfish reefs would restore the important filtration services that the reefs once provided to help mitigate future harmful algal bloom events, as well as increasing biodiversity, blue carbon and fish productivity, and potentially reducing coastal erosion.

OzFish advises that shellfish restoration costs approximately \$150k/ha, and seagrass/kelp restoration approximately \$130k/ha (Cassie Price, pers comms, 18 August 2025).

Conclusion

South Australia's current algal bloom event has caused significant environmental, economic and social impacts on coastal communities and the wider SA community.

LGA, ACCN and SACCA welcome the Federal and State Governments' funding and resources to respond to the algal bloom and acknowledge the agility of the South Australian Government and coastal councils to respond to the current event.

LGA, ACCN and SACCA consider South Australia's current algal bloom event an emergency, and one that is causing nationally significant harm in an offshore area, straddling State and Commonwealth waters, and hence call for a strong national, coordinated response.

In summary, key asks include:

1. A national framework to recognise and manage large scale marine mortality events caused by harmful algal blooms or severe marine heatwaves, including:
 - funding for affected industries, and for councils to assist with environmental clean-up, restoration activities, and safe reopening of affected areas
 - nationally coordinated communication of accurate, science-based information to the public

- amending the *National Emergency Declaration Act 2020* to enable such large-scale and far-reaching algal bloom events to be declared a national emergency
- 2. Development and delivery of a Community Wellbeing and Resilience Framework to support social and mental health outcomes in communities affected by algal blooms and other large-scale marine mortality events.
- 2. Acceleration of Australia's decarbonisation efforts to reduce greenhouse gas emissions and ocean warming.
- 3. Federal funding to establish comprehensive, long-term monitoring and baseline data collection for the Great Southern Reef.
- 4. Federal funding to enable councils to respond to, and recover from, climate related events including algal blooms and build the resilience of councils and communities to climate change generally.

As Professor Martina Doblin, director of the Sydney Institute of Marine Science, said: *"We cannot just treat this as a one-off event that should be monitored. This is a complex problem and we need a coordinated science-industry-governance response"*.

While the current bloom may be affecting South Australia it is likely a portend of what could occur elsewhere around Australia in the face of climate change.

Dr Christopher Keneally from Adelaide University said the toxic bloom's scale, potential to cross state boundaries and long-term ecological legacy placed it *"on par with the bushfires and floods that routinely trigger federal interventions"* while Dr Lucille Chapuis from La Trobe University, argues that, like a bushfire or flooding: *"...we must treat it with the same urgency"*.

Climate change is likely to increase the frequency, extent and duration of algal blooms, as evidenced by the recent blooms off the coasts of Florida and California. California has experienced major harmful algal bloom events in 2015, 2022, 2023, and 2024.

Further Federal Government investment to help South Australia to respond and recover from the current event is an investment in Australia's national capability to respond and recover from such blooms in the future.

LGA, ACCN and SACCA welcome the opportunity to work with the Federal Government as a trusted partner to support South Australian councils and their communities through this crisis, and to emerge from this event better prepared and more resilient for future events.

Appendix 1

Algal Blooms in South Australia Senate Inquiry

Terms of Reference

The causes, frequency, scale and duration of recent algal blooms in South Australian marine and coastal environments, with particular reference to:

- a. contributing environmental, land management or water quality factors;
- b. ecological, economic, cultural and social impacts of algal blooms with particular reference to:
 - i. tourism, commercial and recreational fishing industries,
 - ii. regional and coastal communities, and
 - iii. marine biodiversity and ecosystem health;
- c. the cultural and economic impacts on Indigenous communities, including any loss of access to traditional fishing;
- d. the coordination of state and federal government responses, including support, industry engagement and scientific advice;
- e. the current support and recovery arrangements for impacted industries and communities, including:
 - i. financial support for fishing, tourism and other impacted businesses,
 - ii. community resilience services, and
 - iii. research, monitoring and restoration efforts;
- f. the adequacy of long-term monitoring, forecasting and prevention strategies, including funding and institutional support for marine science and environmental data collection; and
- g. any related matters.

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