

Algal Bloom Fishery Management Roadmap

2025

December 2025

1. Introduction

Purpose

This Algal Bloom Fishery Management Roadmap (the Roadmap) provides guidelines outlining a pragmatic, transparent and repeatable framework to inform fishery management decision-making in areas where marine fish, crustacean and mollusc populations are impacted by algal blooms. The aim of the guidelines is to ensure fishing activities are biologically sustainable and support economic and social benefits to the community where possible.

In doing so, the Roadmap sets out:

- Performance indicators for assessing performance of a fishery or a fish stock.

- Reference levels for those performance indicators (where available) above which fishing activity may be considered for a fish species or a range of species.
- Management arrangements that may be required when a closed fishery or fishing activity is reopened to ensure continued rebuilding of impacted stocks.

Background

The algal bloom observed in the waters of South Australia since March 2025, has had a devastating impact on important aquatic species, particularly in the Gulf St Vincent / Kangaroo Island Fishing Zone (GSV/KIFZ). Government agencies are working together to monitor the situation including monitoring environmental conditions and ocean circulation, conducting water testing at various locations, monitoring of commercial shellfish for toxins and recording fish kills.

The algal bloom is dynamic and moves and changes with environmental conditions and ocean currents. It is difficult to predict exactly where it will go next and how long it will last. The unpredictable nature of the bloom makes management of fishery resources in the State challenging.

The South Australian Research and Development Institute (SARDI) conducts assessments to evaluate the effects of the algal bloom on important fish stocks. These assessments use a range of data sources including fishery-independent surveys, targeted fishing surveys, bycatch and species sampling, commercial fishing data, and routine commercial fish stock assessment surveys.

The initial assessment shows the algal bloom has most severely affected fish stocks in Gulf St Vincent, with Spencer Gulf experiencing comparatively less of an impact (see [Algal bloom impact on key fish stocks in South Australia's gulfs - PIRSA](#)).

Temporary arrangements implemented 1 November 2025

Based on the initial assessment outcomes, a number of temporary management arrangements to promote fish stocks and ecosystem recovery have been implemented as a precautionary measure. Arrangements implemented on 1 November 2025 included the temporary closure of the Marine Scalefish Fishery (MSF) and Blue Crab Fishery (BCF) in the GSV/KIFZ and 50% reduced recreational bag and boat limits and Charter Boat Fishery (CBF) passenger catch limits from 1 November 2025 to 30 June 2026, unless varied or revoked sooner. A 50% reduction in recreational bag and boat limits and Charter Boat passenger catch limits were also implemented in the Spencer Gulf Fishing Zone (SGFZ) for four key target species (King George Whiting, Southern Calamari, Southern Garfish, Blue Crab) to mitigate the risk of displaced recreational fishing effort from Gulf St Vincent to Spencer Gulf. The Spencer Gulf reductions aim to maintain fish resource sustainability in response to increased recreational fishing activity, noting commercial fishing for these quota species are managed through catch restrictions.

Exceptional circumstances

Management plans for South Australia's commercial fisheries include harvest strategies that provide guidance on catch levels (and other arrangements in some cases) to ensure fishing activities are sustainable. While harvest strategies need to be unambiguous, they also need to be adaptive to a range of events (including environmental events). To enable appropriate responses to unexpected events, many of these plans include arrangements related to 'exceptional circumstances' that may trigger departure from a harvest strategy.

An example of exceptional circumstances and arrangements that may apply in these circumstances is included in Section 9.12 of the South Australian Commercial MSF Management Plan. This plan outlines that where credible information becomes available indicating that a recommended biological catch (RBC) or resultant catch limit or other management arrangements described in the harvest strategy are not consistent with the objectives in the management plan, a departure from the harvest strategy may be

considered. Application of exceptional circumstances need to be evidence-based. Examples described in the MSF Management Plan that may warrant the use of exceptional circumstances provisions are:

- Where there has been a major change to the fishery that, for example, indicates that mean catch and effort statistics no longer provide a reliable index of relative abundance.
- Where there has been a demonstrable change in the ecological environment of the fishery or stocks that is unrelated to impacts of fishing (e.g., a climate induced regime shift).

At the time of developing this Algal Bloom Fishery Management Roadmap it is considered that on the available, credible evidence of significant impacts of the algal bloom in the GSV/KIFZ on aquatic resources, it is considered exceptional circumstances applies in this zone.

This Roadmap will provide guidance on management arrangements appropriate in these circumstances.

Roadmap objectives

The *Fisheries Management Act 2007* (“the Act”) aims to ensure the sustainable harvest of South Australia’s aquatic resources. Consistent with the Act, this Roadmap has been developed with the over-arching aim to ensure fish stocks are biologically sustainable. Where possible, fishing activities support economic and social benefits to the community noting the object of the Act related to “*proper conservation and management measures are implemented to protect the aquatic resources of the State from over-exploitation and ensure that those resources are not endangered*” has priority over other objects.

Scope

This Roadmap may be applied to aquatic resources in an area or areas and/or fish stocks described below. An area will generally be at the level of a fishing (management) zone (see Figure 1).

Stocks to which this Roadmap applies includes:

- King George Whiting
- Southern Garfish
- Southern Calamari
- Blue Crab
- Western King Prawn
- Abalone
- Rock Lobster
- Non-quota commercial MSF species general considered collectively
 - Yellowfin Whiting
 - Western Australian Salmon
 - Australian Herring
 - Whaler Sharks
 - Snook
 - Yellow-eye Mullet
 - Bluethroat Wrasse
 - Cuttlefish
 - Black Bream
 - Gummy Shark
 - School Shark
 - Silver Trevally
 - Leatherjackets
 - Rays and Skates
 - Sand Crab
 - Mulloway

- Ocean Leatherjackets.
- Other species deemed to be impacted by the algal bloom.

Note: Snapper fishing in most areas of the State (except in the South East) is closed to fishing and a draft rebuilding plan is being developed to inform management arrangements for that species. Snapper is therefore not specifically included in this Roadmap.

Area to which this Roadmap refers to fishing zones as described in Figure 1.

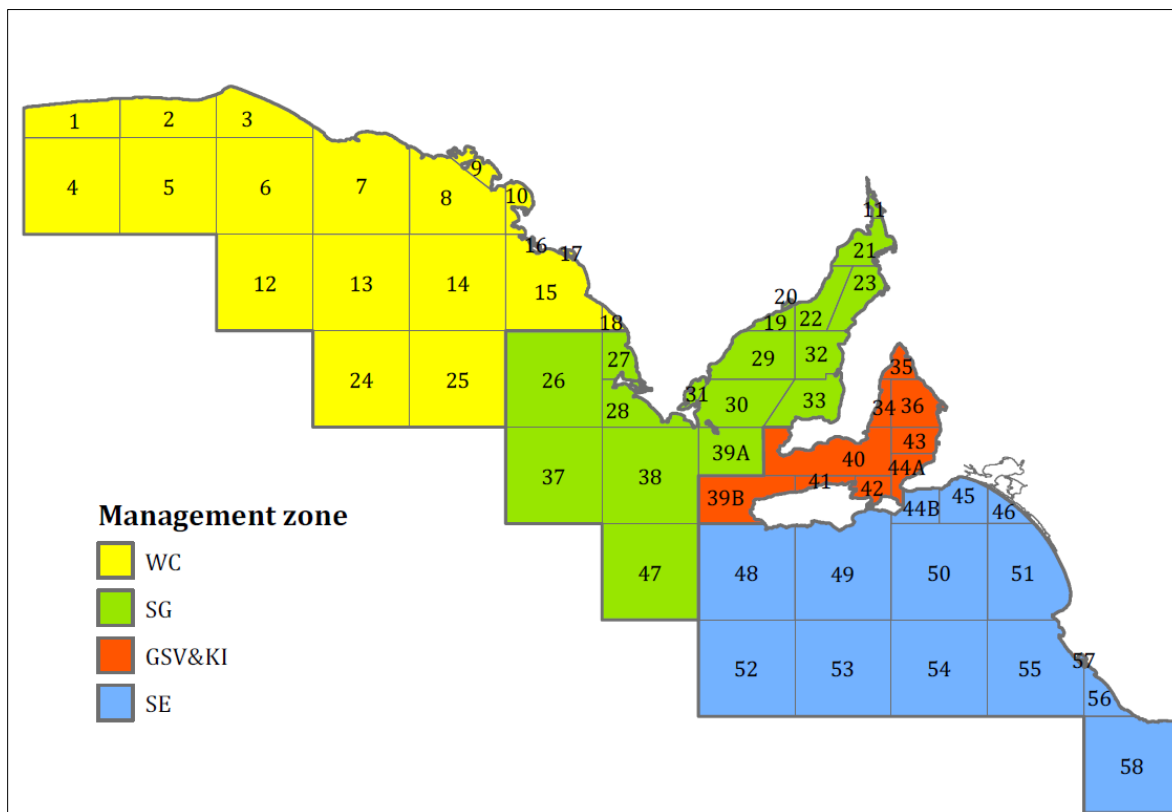


Figure 1 - The four Fishing Zones are as implemented through the commercial Marine Scalefish Fishery. These are the Spencer Gulf Fishing Zone (SGFZ), Gulf St Vincent/Kangaroo Island Fishing Zone (GSV/KIFZ), West Coast Fishing Zone (WCFZ) and South East Fishing Zone (SEFZ). The boundaries of each zone are delineated by existing Marine Fishing Area blocks or sub-blocks.

Management arrangements described in this Roadmap may be applied to the commercial (including Charter Boat Fishery) and recreational fishing sectors.

The Aboriginal traditional fishing sector is not included in this document as the arrangements described herein do not apply to traditional fishing activities.

2. Assessment Methods

2.1. Stock assessment

Stock assessments continue to be undertaken for stocks in the GSV/KIFZ and SGFZ in response to the algal bloom. The SARDI assessments have used a combination of:

- (i) Spatial and temporal analyses of commercial and recreational catch data;
- (ii) Targeted fishery-independent surveys;
- (iii) Targeted fishery-dependent surveys;
- (iv) Bycatch sampling; and

- (v) Industry cost recovered stock assessment surveys.

Uncertainties associated with preliminary results will reduce with additional catch and effort logbook, targeted fishing, and survey data, as it becomes available.

2.1. Monitoring and evaluation

Monitoring of fish stocks using the following primary performance indicators will enable application and evaluation of the effectiveness of the management measures applied under this Roadmap:

SARDI provides regular assessments on key quota fish species, and other non-quota (less targeted) species; these assessments include -

Comprehensive assessment of quota species that examines (i) spatial and temporal analyses of commercial and recreational catch (via Rec Fishing App) data; (ii) targeted fishery-independent surveys; (iii) targeted fishery-dependent surveys; (iv) bycatch sampling; and (v) routine cost-recovered stock assessment surveys. This work provides information on King George Whiting, Southern Calamari, Southern Garfish, Blue Crab, Rock Lobster, and Abalone. Note this assessment also provides information on prawns, as these are a highly targeted, albeit non-quota species.

Assessment of non-quota species that examines spatial and temporal analyses of commercial catch data. These assessments provide information for up to 17 lesser targeted, non-quota species, including Yellowfin Whiting, Western Australian Salmon, Australian Herring, and sharks.

3. Decision Rules

Given the unpredictable nature of the algal bloom, the presence of the bloom in some areas will dissipate and stocks recover, allowing for some level of fishing to resume. The arrangements below describe the performance measures/criteria that should be evident before reopening of fishing activities is considered.

The bloom may also move to other areas of the State and impact fish stocks in those areas. This Roadmap also includes guidelines on implementing restrictions on fishing activities in those scenarios.

3.1. Performance indicators and reference levels

Analyses require enough data to produce a representative catch per unit effort (CPUE) estimate – used as an index of fish stock abundance/biomass. Where an area is closed or fishing effort is low, CPUE from commercial logbook data cannot be estimated or is considered unreliable. In these cases, management decisions require further information.

Information requirements will be fisheries specific. Targeted fishery-dependent surveys or fishery-independent surveys will be required.

Decision rules to close or reduce fishing pressure

Monthly estimates of catch and CPUE derived from commercial logbook data are assessed against a defined pre-algal bloom reference period (i.e., for MSF species, a three-year historic average [March 2022–February 2025]) to determine level of change and trend.

Where CPUE from commercial logbook data cannot be estimated or is considered unreliable due to low fishing effort, targeted fishery-dependent surveys or fishery-independent surveys will need to be considered.

Restrictions on fishing for a species or species group may be triggered when monthly estimates of average CPUE (and/or catch) fall 80% below pre-algal bloom (baseline) monthly average CPUE (and/or catch).

Where available, additional indicators of stock and environmental health should be incorporated into decision-making, such as:

- targeted fishery-independent and fishery-dependent surveys
- by-catch analyses
- stock-recruitment indicators
- recreational and charter sector catch data
- environmental indicators (e.g., cell counts of harmful algae, evidence of ongoing fish kills).

Decision rules to reopen fishing

For fishing areas that are closed, data from commercial logbooks will not be available, so targeted fishery-dependent and/or fishery-independent survey data will be required to estimate CPUE and assess fish stock recovery.

For fish stocks where no formal fishery-independent surveys are undertaken, opening a fishing area may be considered when:

- Three consecutive monthly estimates of CPUE obtained from targeted fishery-dependent surveys are above 50% of pre-algal bloom (baseline) monthly average CPUE, and preferably CPUE increases in each of those three months.

For fish stocks where historical fishery-independent survey data are available, opening a fishing area may be considered when:

- Performance indicator estimates (e.g., CPUE, spawning biomass, stock density) obtained from fishery-independent surveys are above Limit Reference Points (where defined).

Other information sources should also be integrated into assessments where available. For example:

- By-catch analyses
- Stock-recruitment indicators
- recreational catch and effort data
- environmental indicators (e.g., algal bloom data, fish kill information).

3.2. Management arrangements

Prohibiting fishing activities

Where performance measures as described at Section 3.1 indicate fish stock/s have declined due to the impacts of the algal bloom, the following management arrangements to recover the impacted stocks may be considered:

1. Restrict fishing activity by prohibiting the take of a specific species or species group.
2. Reduce recreational and Charter Boat Fishery bag, boat, and passenger catch limits to a precautionary level and in consideration of regional catch shares (where available).

3. Seasonal spawning closure for identified species during their relevant reproductive period. Closures may be across a fishing zone (see Figure 1) or at known spawning grounds.
4. Spatial closures at important life history sites including key nursery areas and aggregation sites.

Other arrangements may be considered where they expedite stock recovery and achieve the objects of the Act.

Reopening fishing activities

Where performance measures as described at Section 3.1 indicate a fishery or fish stock/s may be reopened to some level of fishing activity the following management measures may be considered to support continued recovery of impacted fish stocks.

1. An appropriate Total Allowable Catch (TAC) be applied in a relevant fishing zone and applied to fishing sectors accessing based on regional shares of allocations as follows:
 - Total Allowable Commercial Catch (TACC - commercial sector/s) noting this may be set through individual transferable quota entitlements or a catch cap.
 - Total Allowable Recreational Catch (TARC - combined for Charter Boat and non-Charter fishing sectors or applied separately to these two sectors).
2. Recreational and Charter Boat Fishery bag, boat, and passenger catch limits set consistent with TARC.
3. Seasonal spawning closures for identified species during their relevant reproductive period. Closures may be across a fishing zone (see Figure 1) or at important sites.
4. Area closures at important sites including important nursery areas and aggregation sites
5. Non-retained catch reporting in commercial fisheries including the Charter Boat Fishery. Voluntary reporting of catch of non-retained quota species encouraged for recreational fishers.

Other arrangements may be considered where they further the achievement of the objectives of the Act.

4. Considerations

In decision-making for management arrangements, the following should be considered

- Objects of the *Fisheries Management Act 2007*
- Relevant advice provided by SARDI or another reputable independent research provider
- Other risks on an impacted fish stock that may have a cumulative effect
- Relevant Management Plans developed under the Act
- Community economic and social well-being noting primacy of requirements to sustain aquatic resources of the State under the Act
- Maintaining formal allocations between fishing sectors in relevant management plans.

4.1. Caveats and limitations

1. Data constraints
 - Where a sustained closure occurs, targeted fishery-dependent survey information may be difficult to acquire if fishers have moved out of the fishery.
 - CPUE may not always reflect stock abundance. Hyper-stable and/or hyper-depleted catch rates may occur in response to algal bloom/environmental conditions.
 - Indicators used to guide reopening may carry inherent sampling error and inter-annual variability. Confidence in decision rules depends on maintaining consistent data frequency and spatial coverage. Reductions in monitoring effort may limit the reliability of analyses.
2. Stock recovery timeframes - considerations
 - Fishery population models may project stock recovery under conditions of zero fishing effort. Model outputs should be considered with respect to potential environmental impacts (i.e., algal bloom) on stock recruitment and adult biomass at appropriate spatial and temporal scales.
 - The guidelines represent a pragmatic compromise to allow fishing activities to resume while being closely monitored, thereby minimising risk to stock sustainability.
 - Decisions to open areas, e.g. at levels of 50% of pre-algal bloom (baseline) monthly average CPUE, do not consider the economics of fishery operations (i.e., the levels of catch and/or CPUE that may be economical/uneconomical to fish).
3. Spatial variation
 - Re-opening decisions at finer spatial scales should not imply re-opening at larger spatial scales. Algal bloom impacts may be localised and persist despite stock improvement elsewhere. Impacts and stock recovery rates may differ spatially and temporally, and localised improvements may not reflect broader stock status, particularly for species with complex movement patterns.

5. Review

This Roadmap may be reviewed where new credible information is available to enable improvements to the guidelines described in this document.