ADVICE TO: **PIRSA FISHERIES AND AQUACULTURE (PROF. GAVIN BEGG – EXECUTIVE DIRECTOR)**

FROM: **SARDI AQUATIC AND LIVESTOCK SCIENCES**

SUBJECT: **RISKS ASSOCIATED WITH ALLOWING THE MSF ACCESS TO BLOODWORMS DURING THE CURRENT ALGAL BLOOM CLOSURE**

DATE: **1 JUNE 2026**

KEY ISSUES

- Bloodworms are valued highly in South Australia as premium fishing bait for finfish.
- The GSV/KI Fishing Zone has been closed for the take of bloodworms since 1 November 2025 to protect and support recovery of marine ecosystems affected by the algal bloom.
- The Marine Fishers Association and South Australian Professional Fishers Association requested the consideration of a Ministerial Exemption to allow Marine Scalefish Fishery licence holders to re-commence harvest of bloodworms in the Gulf St Vincent and Kangaroo Island (GSV/KI) Fishing Zone.
- Bloodworm stock status is undefined due to limited data, unclear algal bloom impacts, and poor CPUE reliability as an abundance indicator; however, available evidence of broad ecosystem impacts and recent lower catch and catch rates suggests additional harvest would likely impede stock and ecosystem recovery.

BACKGROUND

Bloodworms are polychaete worms occurring in sheltered coastal habitats and are widely used as fishing bait for key finfish species (Zanol et al. 2016). In South Australia, bloodworms are harvested recreationally, and commercially under both Marine Scalefish Fishery (MSF) and Miscellaneous Fishery licences, using dab nets, hand nets, and spades/forks in tidal habitats (PIRSA, unpublished data).

Catches are seasonally concentrated around “bloodworm runs” in winter (July–August). During these events, bloodworm aggregations—typically associated with lunar phase and large tides—form at the water’s surface, where they are more accessible to harvest. Bloodworms may also be taken as by-catch when tubeworms are targeted (Ivey et al. 2013). No formal stock assessment has been conducted.

In mid-March 2025, a harmful algal bloom (HAB) dominated by *Karenia* spp. was identified off the Fleurieu Peninsula and subsequently spread into Gulf St Vincent/Kangaroo Island (GSV/KI), Spencer Gulf and adjacent regions. Observations indicate broad impacts across marine species (e.g., iNaturalist records), including mortality of commercial, protected, and ecologically important species. Commercial fishing restrictions on blue crab and MSF species (including bloodworm) in the GSV/KI were first implemented on 1 November 2025 and further extended until 30 April 2027.

PIRSA Fisheries and Aquaculture have requested advice on (i) the impact of allowing MSF and Miscellaneous Fishery licence holders to take bloodworms in the GSV/KI Fishing Zone, (ii) the

impacts of the algal bloom on bloodworm stocks, and (iii) the importance of bloodworms to the ecosystem in light of impacts of the algal bloom.

RESULTS/DISCUSSION

Since 1983/84, annual commercial catches of bloodworms, reported across both the MSF and Miscellaneous Fishery, ranged from 507 to 2,103 kg (mean: 1,184 kg) and the number of active commercial licences ranged from 5 to 15 (mean: 8 licences). In 2025/26, reported commercial catch was 686 kg from 8 licences. Thus, data are sparse. Monthly total catch and CPUE were below pre-algal bloom three-year means in August 2025 (Figure 1). CPUE was also below the pre-algal bloom three-year mean in July 2025. However, the tendency for bloodworms to form seasonal aggregations concentrates harvest pressure during winter months, decoupling catch rates from true abundance and limiting CPUE as an indicator of population status. Consequently, lower commercial catch and CPUE recorded in August 2025 relative to pre-algal bloom levels may reflect reduced stock availability, lower fishing effort, natural inter-annual variability, or other unaccounted factors.

No recreational catches of bloodworms have been reported to the SA fishing app since the re-launch in August 2025, and no routine monitoring of bloodworm recreational catch occurs. The magnitude of the recreational take is uncertain, although it is generally considered to be lower than commercial harvest.

Bloodworms inhabit sediments that are vulnerable to hypoxia and bioaccumulation of algal toxins and play an important role in sediment bioturbation and nutrient cycling within benthic communities, potentially also contributing to ecosystem recovery processes following disturbance. International studies indicate that *Karenia* blooms can affect benthic communities through hypoxia and anoxia associated with bloom decomposition, as well as through the bioaccumulation of algal toxins (Johnstone et al. 2024; O'Boyle et al. 2016; Echevarria et al. 2012). Thus, the 2025/26 HAB is a likely additional stressor for bloodworm stocks and the coastal habitats they depend upon. However, bloodworm sensitivity to *Karenia* spp. toxins is unknown, and there is no long-term monitoring of soft sediment communities in South Australia. iNaturalist observations recorded mortality of single bloodworms on seven occasions.

Given the uncertainty in the impact of the HAB on bloodworm stock abundance in the GSV/KI Fishing Zone and more broadly across South Australia, the difficulty of using commercial catch and CPUE data for assessment, and the absence of an independent monitoring program, it is difficult to evaluate the risks of allowing commercial harvest to recommence under a Ministerial exemption. However, based on the available information (e.g. reduced commercial catch and catch rates in winter 2025, reported mortalities, HAB a likely additional stressor for bloodworm), any harvest is likely to impede stock and ecosystem recovery.

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Disclaimer

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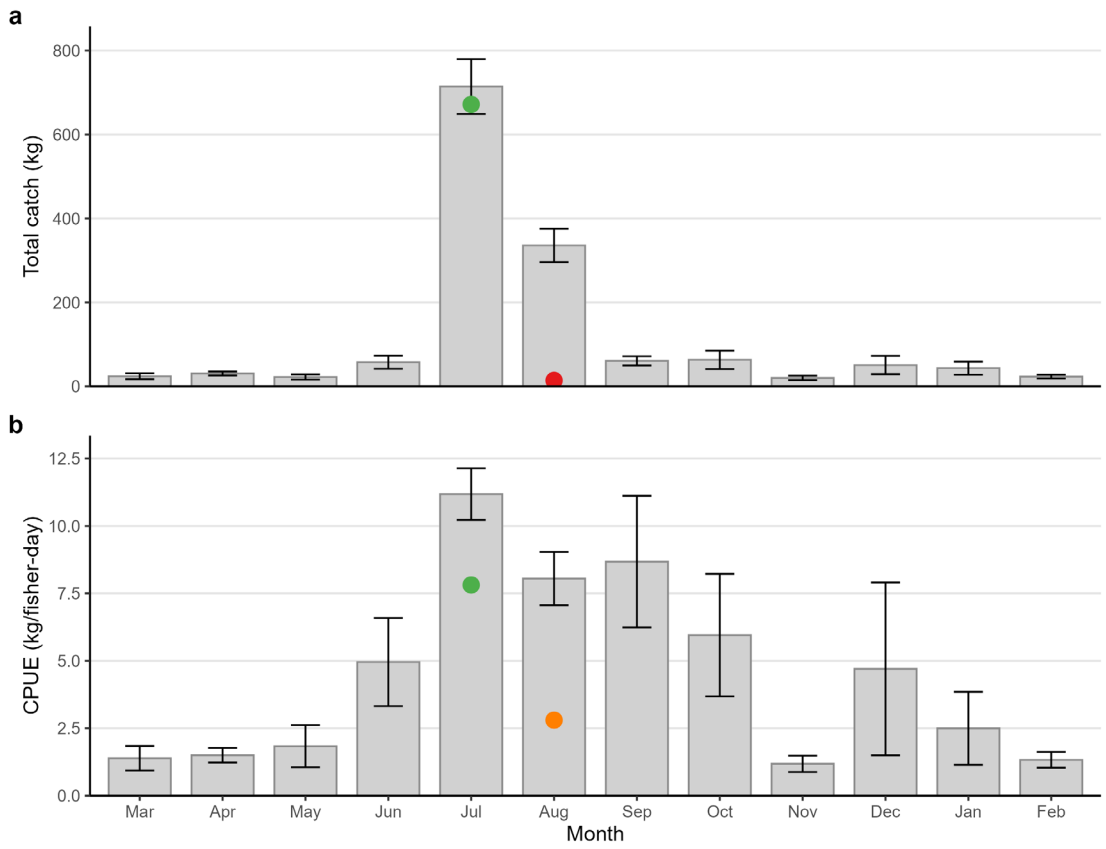

Figure 1. Statistics for bloodworms in Gulf St Vincent and Kangaroo Island Fishing Zone. a) Total catch (kg) and b) CPUE (kg/fisher-day) during 2025/26 compared to the 3-year monthly average (2022/23–2024/25). Error bars indicate standard error. A green dot indicates change in catch/CPUE <50% of 3-year monthly average; orange indicates change in catch/CPUE of 50-80% of 3-year monthly average, red indicates change in catch/CPUE >80% of 3-year monthly average.