Queensland coral fishery ecological risk assessment

Likelihood and consequence analysis

June 2026

DELIVERING FOR QUEENSLAND

Queensland Government

This publication has been compiled by Jasmine Morton and Ian Jacobsen of Fisheries Queensland, The Department of Primary Industries.

Cover page photograph by Juno Siu and Mark Tate, featuring *Acropora* aff. *microclados*, courtesy of Monsoon Aquatics.

The Department of Primary Industries proudly acknowledges Aboriginal people and Torres Strait Islander people as the Traditional Custodians of Country. We recognise their continuing connection to land, sea, waters and sky. We pay our respects to them, their cultures and their Elders past and present, and commit to ongoing reconciliation.

The Queensland Government is committed to providing accessible services to Queenslanders from all culturally and linguistically diverse backgrounds. If you have difficulty in understanding the *Queensland coral fishery ecological risk assessment*, you can contact us for assistance, and we will arrange an interpreter to communicate the report to you.

Executive Summary

The Queensland coral fishery (QCF) is a quota-managed, hand-collection fishery operating primarily within the Great Barrier Reef Marine Park (GBRMP), with limited harvesting in two areas of south-east Queensland outside of the marine park. It targets corals, sea anemones, live rock, coral rubble, and coral sand for domestic and international markets. The fishery is governed by the *Fisheries Act 1994* and relevant subordinate legislation, federal laws relevant to the GBRMP, state marine parks, and the *Queensland coral fishery harvest strategy: 2021–2026* (Department of Agriculture and Fisheries, 2021a).

The QCF is managed under a combination of input controls (e.g. limited entry, gear restrictions, and spatial closures and output controls, including prescribed commercial catch (PCC) limits for 99 CITES-listed species and individual transferable quotas (ITQs) for seven target species. A number of these measures were introduced in 2022 as part of significant reforms to the QCF management regime. These measures were complemented by enhancements to coral reporting requirements which now include over 120 distinct catch categories and species-specific reporting for all CITES-listed stony corals. This has improved oversight of long-term catch trends and addresses concerns about uncontrolled harvest growth. Similarly, PCC limits and ITQs for stony coral species have further reduced the risk of overexploitation.

Three ecological risk assessments (ERAs) have previously been undertaken on the QCF to evaluate risks associated with the fishery (Roelofs, 2018, Roelofs, 2008, Morton et al., 2022). The updated QCF ERA 2026 (this report) assessed 20 prioritised species and considered broader ecological components, such as habitats and ecosystem functions, to meet Wildlife Trade Operation (WTO) Condition 5. Over 200 coral species/species groups were considered for assessment through a review of fisheries data, previous risk assessments (Roelofs, 2018, Pratchett et al., 2020a, Morton et al., 2022), WTO accreditation requirements (Commonwealth of Australia, 2025), research findings (Pratchett, 2024a, Pratchett, 2024b), and market constraints, such as import bans imposed by the European Union and United Kingdom. A review of the available data and harvest trends, in consultation with the Marine Aquarium Fish and Coral Fisheries Working Group, indicated that most of the species were at low risk from QCF fishing activities. However, 20 species were identified as assessment priorities and progressed to a more detailed and comprehensive ERA.

A likelihood and consequence analysis (LCA) risk assessment was conducted and refined during a dedicated workshop with the marine aquarium fish and coral fisheries working group and subject matter experts (Fletcher, 2015, Fletcher et al., 2013, Fletcher et al., 2005). Risk ratings were assigned collaboratively through informed discussion and expert elicitation. This approach ensured a thorough and transparent evaluation process, incorporating stakeholder input and expert knowledge to assess ecological risks to coral species in the QCF.

Of the 20 species assessed, 13 were classified as low risk, while seven were rated as moderate to high risk. The two high-risk species, *Homophyllia* cf. *australis* and *Micromussa lordhowensis*, are corals with low growth rates, restricted distributions and specialised habitat requirements, making them particularly vulnerable to fishing pressures. Concentrated harvesting in specific areas and uncertainties around biomass and abundance further increase their risk in the current fishing environment. Despite these challenges, the risk

ratings for both species improved since the previous assessment (Morton et al., 2022), reflecting the positive impact of recent management reforms which implemented harvest limits.

The QCF operates within the GBRMP, and the Great Barrier Reef World Heritage Area which encompass diverse marine habitats and ecosystems. The fishery is small-scale, highly regulated and subject to substantial spatial and operational restrictions. While these arrangements limit the potential for broad-scale impacts, some localised and species-specific issues remain. Concentrated harvesting, the removal of fragments or entire colonies, and the selective collection of high-value corals have the potential to impact local habitats, alter population structures, and reduce recovery potential in certain areas. Environmental pressures, including marine heatwaves and freshwater flooding, also need to be considered as they can compound local pressures on harvested species. These issues do not change the overall low-risk conclusion for the fishery, but they highlight the importance of targeted monitoring, responsive management and ongoing review through the harvest strategy and severe event response planning processes.

The ERA identified knowledge gaps for many coral species, particularly regarding biomass, abundance, distribution, recruitment, recovery, and taxonomy. These gaps should be recognised when interpreting risk ratings and reviewing harvest limits, particularly where provisional limits are in place. Where additional information becomes available through monitoring, targeted assessments, industry observations or broader reef programs, it can be used to refine management over time.

Overall, the results of the ERA support the inference that the QCF is a low-risk fishery within the GBRMP. The fishery operates under an extensive management framework, and recent reforms have improved the risk profiles of key target species. While localised risks remain, particularly for high-value and vulnerable species, the current system provides a strong foundation for effective management. The scheduled review of the *Queensland coral fishery harvest strategy: 2021–2026* and the development of the severe event response plan offer opportunities to address remaining challenges and further enhance the fishery's management. Continued research and adaptive management will be critical to ensuring the long-term viability of the QCF and its alignment with ecological and commercial objectives.

Summary of the outputs from the 2026 QCF ERA

Common name	Species name	Consequence	Likelihood	Risk value	Risk rating
Pachysepta	*Acanthastrea pachysepta*	2	4	8	Moderate
Desh	*Acanthophyllia deshayesiana*	3	3	9	Moderate
Strawberry shortcake	*Acropora* aff. *microclados*	2	4	8	Moderate
Blasto	*Blastomussa wellsi*	1	4	4	Low

Common name	Species name	Consequence	Likelihood	Risk value	Risk rating
Elegance coral	*Catalaphyllia jardinei*	2	3	6	Low
Prism coral	*Dipsastraea rosaria*	2	3	6	Low
Duncan	*Duncanopsammia axifuga*	1	3	3	Low
Torch	*Euphyllia glabrescens*	2	3	6	Low
War coral	*Favites pentagona*	1	4	4	Low
Hammer	*Fimbriaphyllia ancora*	2	3	6	Low
Frogspawn	*Fimbriaphyllia divisa*	2	4	8	Moderate
Paraancora	*Fimbriaphyllia paraancora*	1	2	2	Low
Goni	*Goniopora stokesi*	2	3	6	Low
Helio	*Heliofungia actiniformis*	2	3	6	Low
Bowerbanki	*Homophyllia bowerbanki*	2	3	6	Low
Scoly	*Homophyllia* cf. *australis*	3	5	15	High
Lobo	*Lobophyllia hemprichii*	2	4	8	Moderate
Acan	*Micromussa lordhowensis*	4	4	16	High
Plero	*Plerogyra sinuosa*	2	3	6	Low
Trachy	*Trachyphyllia geoffroyi*	2	3	6	Low

Contents

Definitions and abbreviations

CITES	–	Convention on International Trade in Endangered Species of Wild Fauna and Flora.
DCCEEW	–	Department of Climate Change, Energy, the Environment and Water (Commonwealth).
DPI	–	Department of Primary Industries (Queensland).
EPBC Act	–	*Environment Protection and Biodiversity Conservation Act 1999.*
ERA	–	Ecological risk assessment.
EU	–	European Union.
GBRMP	–	Great Barrier Reef Marine Park.
GBRMPA	–	Great Barrier Reef Marine Park Authority.
ITQ	–	Individual transferrable quota.
LCA	–	Likelihood and consequence analysis.
PCC	–	Prescribed commercial catch.
PSA	–	Productivity and susceptibility analysis.
RRA	–	Residual vulnerability analysis.
QCF	–	Queensland coral fishery.
WTO	–	Wildlife Trade Operation.

Introduction

The QCF is a quota-managed, hand-collection fishery that primarily operates within the confines of the Great Barrier Reef Marine Park (GBRMP). Restricted harvest of corals is also permitted in two small areas of south-east Queensland (Appendix 1) (Department of Agriculture and Fisheries, 2022). Operators collect a range of stony corals, soft corals, anemones, and various substrate types for the live aquarium trade. The majority are exported for sale on international markets, however there is also a strong demand on the domestic market. Collection can include the harvesting of whole or parts of a coral colony depending on the species. Live rock (dead coral skeletons with algae / other organisms living on them) and coral rubble are also harvested. All corals in Order Scleractinia are listed under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). While non-commercial coral collection occurs in Queensland, it is subject to significant restrictions and requires a permit in state and commonwealth marine parks (Department of Agriculture and Fisheries, 2021a, Great Barrier Reef Marine Park Authority, 2022a).

Management arrangements and reforms

The QCF is managed under a range of input and output controls that includes limited licencing, the use of quota limits, spatial closures, and gear restrictions. In Queensland, commercial coral collection is limited to hand-held implements, and operations rely on scuba or surface supplied air i.e., a hookah (hose) apparatus. Commercial operators are authorised to take coral under a 'D' fishery symbol, of which there are currently 59 authorities (Department of Agriculture and Fisheries, 2022). While the use of this symbol is managed under fisheries legislation, commercial operations are subject to provisions governing the use of resources within state and commonwealth marine parks (Great Barrier Reef Marine Park Authority, 2022b, Great Barrier Reef Marine Park Authority, 2020).

The *Queensland coral fishery harvest strategy: 2021–2026* was introduced in September 2021 to support the sustainable management of coral resources through decision rules, trigger limits, and reference points (Department of Agriculture and Fisheries, 2021a). Since its implementation, the management framework has been improved through significant reforms and enhancements. These improvements were driven by conditions from previous WTO accreditations and recommendations contained within the 2022 QCF Ecological Risk Assessment (ERA) (Morton et al., 2022). Key updates include a revised logbook reporting system with over 100 distinct catch categories, ensuring species-specific reporting for all assessed corals (Queensland Government, 2024). The shift away from broader reporting categories, such as genus or family levels, improved oversight of harvest trends and reduced the risk of harvest increases at a species level being obscured.

Additionally, significant regulatory reforms introduced 99 prescribed commercial catch (PCC) limits for CITES-listed species and seven species-specific individual transferable quotas (ITQ). These changes established clear harvest limits, resulting in reduced harvests for high-value species and addressing a key risk identified in the previous ERA: the potential for uncontrolled increases in the harvest of targeted species (Morton et al., 2022).

Wildlife Trade Operation

On 21 October 2024, the QCF received a three-year Wildlife Trade Operation (WTO) approval permitting export of product under the *Environment Protection and Biodiversity Conservation*

Act 1999 (EPBC Act). The export approval was granted with conditions requiring the publication of an updated fishery harvest strategy, development and implementation of a severe event response plan, and publication of an ERA update. The ERA update is required by 30 June 2026.

Ecological risk assessment

The first QCF ERA was completed in 2008 (Roelofs, 2008) with updates completed in 2013 (Roelofs, 2018) and 2022 (Morton et al., 2022). This report builds on previous assessments and updates the risk profiles for a range of priority QCF species. The scope of the ERA was established through a species prioritisation process which involved a comprehensive review of fisheries quota data, earlier risk assessments (Roelofs, 2018, Pratchett et al., 2020a, Morton et al., 2022), WTO accreditation requirements, research findings (Pratchett, 2024a, Pratchett, 2024b), and market constraints, such as import bans by the European Union and United Kingdom. The preliminary list of species was refined based on harvest data, risk ratings, and current management arrangements, and was reviewed by the Marine Aquarium Fish and Coral Fisheries Working Group in September 2025. 20 species were identified as priorities for assessment.

The risk of QCF activities negatively impacting coral species was assessed using a likelihood and consequence analysis (LCA). The LCA is a qualitative risk assessment method (Fletcher, 2015, Fletcher et al., 2005) and it assigns risk ratings (negligible to very high) based on two factors: an evaluation of the extent of an undesirable event (consequence) and likelihood of the consequence occurring for each species (likelihood). The LCA was previously used in QCF and is particularly effective for assessing risk for data-limited fisheries and species. A more flexible assessment method, the LCA considers the available data and, where appropriate, stakeholder input and anecdotal evidence. Its flexibility allows for adjustments to risk ratings based on consensus, making it a suitable and adaptive tool for assessing ecological risks in the current QCF fishing environment.

To enhance the LCA's robustness, a complementary productivity and susceptibility analysis (PSA) was conducted to assess the vulnerability of coral species based on their biological and ecological characteristics. PSA findings were integrated into the LCA to inform the consequence scores and improve the accuracy of risk ratings. The LCA scores were finalised during a workshop in April 2026, involving coral licence holders, scientific experts, and representatives from the Great Barrier Reef Marine Park Authority.

Objectives

Maintaining a balance between sustainable harvesting practices and the preservation of the Great Barrier Reef's biodiversity is critical, particularly in the face of environmental pressures such as marine heatwaves, while supporting sustainable harvesting practices that allow the reef's splendour to be observed and appreciated, while contributing to broader conservation efforts, such as the Reef Restoration and Adaptation Program currently in development.

The objectives of this report are to meet Condition 5 of the QCF WTO accreditation, assess the level of risk to 20 priority coral species harvested in the QCF, evaluate the fishery's impact on broader ecological components, identify critical knowledge gaps, and provide insights to support and refine current management measures, including the updated harvest strategy.

Methodology

Species prioritisation process

To prepare for the species-specific component of the QCF ERA, priority coral species were identified for inclusion in the assessment. A preliminary list of over 200 coral species was developed through a comprehensive review of fisheries quota data, previous risk assessments (Roelofs, 2018, Pratchett et al., 2020a, Morton et al., 2022), WTO accreditation requirements (Commonwealth of Australia, 2025), and current international market constraints, such as the import ban on Australian coral species by the European Union and United Kingdom.

Species were prioritised based on several factors, including recent harvest contributions (particularly instances where PCC limits were exceeded), risk ratings from previous assessments, findings from the *Acropora* characterisation project (Pratchett, 2024a), the localised status assessment for specialty coral (Pratchett, 2024b), and the current fishery management arrangements.

As a result of the review process, 28 species were identified as primary assessment priorities, with an additional 23 species classified as secondary priorities. These species were provided to the Marine Aquarium Fish and Coral Fisheries Working Group for consultation. Following consultation, 20 species were prioritised for assessment. The remaining species were not viewed as assessment priorities as the review determined that the QCF posed a low risk to these species within the current fishing environment. When and where appropriate, these species will be considered for inclusion in any subsequent risk assessments.

Information sources and consultation

Where possible, baseline information on the life-history constraints and habitat preferences for each species were obtained from peer-reviewed literature. Key reports relating to the QCF include; *Localised status assessment for specialty coral harvest species on the Great Barrier Reef* (Pratchett, 2024b), *Population size and growth estimates for Trachyphyllia geoffroyi and other specialty coral harvest species to underpin improved fishery management* (Pratchett, 2024c), *Characterising species composition of Acropora corals harvested by the Queensland Coral Fishery (QCF)* (Pratchett, 2024a), *Expert Advice for the Assessment of Australian Coral Fisheries – Queensland Coral Fishery 2006-2007 to 2019-2020* (Pratchett, 2021), *Vulnerability of commercially harvested corals to fisheries exploitation versus environmental pressures* (Pratchett et al., 2020a), and *Bleaching susceptibility of aquarium corals collected across northern Australia* (Pratchett et al., 2020b).

In the absence of peer-reviewed information, additional material was sourced from grey literature and publicly accessible databases such as the Coral Trait Database (https://www.coraltraits.org/), World Register of Marine Species (https://www.marinespecies.org), IUCN Red List of Threatened Species (www.iucnredlist.org), and Corals of the World (http://www.coralsoftheworld.org).

The consultation process included engagement with the Reef Authority, the Queensland Museum, scientists from James Cook University, the Marine Aquarium Fish and Coral Fisheries Working Group, and ten commercial coral collectors, four of whom are not

members of the working group. This collaborative approach supported the development of a comprehensive assessment.

Industry knowledge was incorporated into the ERA through consultation with commercial coral operators. Multiple species assessments incorporated operator observations for depth ranges, habitat distribution, and localised abundance, particularly where published literature was limited or outdated. The contrast between content in databases / literature and in-water observations by operators was acknowledged across several species, reflecting the value of decades of site-specific knowledge held by licensed operators.

Fisheries data used to inform the 2026 QCF ERA was obtained through the commercial fisheries logbook program. While coral collection has an extensive history on the Queensland east coast (Daley & Griggs, 2008), the quality and quantity of the data vary through time. Accordingly, the assessment only considered fishing data collected from 2022–23 to 2024–25 (Appendix 5). This data is representative of the current fishing environment and reflects the extensive management reforms in the QCF.

A supplementary report was compiled to assist discussions surrounding the allocation of risk scores: the Queensland coral fishery vulnerability assessment (QCF VA)[1]. The vulnerability assessment provides an indicative evaluation (i.e. low, medium or high) of a species vulnerability. The assessment takes into consideration a range of parameters including reproduction, growth rate, distribution, ecological niche, and management. The categorical results of the vulnerability assessment for priority species have been included in this report as Table A2, Appendix 6.

Likelihood and consequence analysis

The likelihood and consequence analysis (LCA) is a qualitative risk assessment method. The purpose of the LCA is to assign risk ratings (negligible, low, moderate, high, or extreme) that consider fishing activities in the QCF and their potential to contribute to an undesirable event for one or more coral species. Risk scores are based on an evaluation of the extent of an undesirable event – **consequence**, and the **likelihood** of the consequence occurring for each species (Fletcher, 2015, Fletcher et al., 2005).

An "undesirable event" in this context refers to any adverse impact on coral species caused by fishing activities. The severity of such impacts is evaluated through two components: **consequence** – the potential extent of harm to a coral species resulting from fishing activities, and **likelihood** – the probability of such harm occurring (Tables 1 and 2). The LCA matrix, which assigns indicative risk ratings, is detailed in Table 3.

The LCA is a versatile and effective tool for assessing ecological risks in commercial fishing (Fletcher, 2015, Fletcher et al., 2005), particularly in data-poor fisheries, as it relies heavily on stakeholder input. This method has been employed in two previous QCF risk assessments (Roelofs, 2018, Roelofs, 2008) and was adopted for Phase 1 of the QCF ERA update (Morton et al., 2022).

To enhance the robustness of the LCA, a complementary vulnerability assessment (VA) was completed using the productivity and susceptibility analysis (PSA). The PSA is used to

[1] The QCF VA, finalised in April 2026, is based on the best available data at the time of assessment. This analysis is subject to revision should new information or data become available in the future.

estimate the **relative vulnerability** of coral species by analysing measurable attributes related to their productivity (e.g., age at maturity, reproduction, growth) and susceptibility (e.g., distribution, depth range, abundance). These semi-quantitative PSA results informed the LCA by guiding the assignment of **consequence** scores, thereby improving the accuracy and reliability of the risk assessment. This integration enhances the accuracy and reliability of the LCA, leading to more robust management for the QCF.

Species-specific consequence and likelihood scores were refined during a dedicated QCF ERA workshop on 23 April 2026 in Cairns. This workshop included representatives from the Department of Primary Industries (DPI), commercial coral collectors, scientific experts, and representatives from the Great Barrier Reef Marine Park Authority (Reef Authority) (Appendix 8). The majority of workshop participants are members of the marine aquarium fish and coral fisheries working group (WG) (Department of Agriculture and Fisheries, 2021b). For consistency, the LCA scoring criteria (Tables 1 and 2) were largely aligned with previous assessments (Morton et al., 2022, Roelofs, 2018). The key changes being the integration of the PSA results to guide workshop discussions.

The flexibility of the LCA is an important aspect of the assessment. Vulnerability ratings assigned in the productivity and susceptibility analysis (PSA) were used to inform the consequence score of the LCA. However, these ratings can be adjusted if workshop participants agree that a species warrants an alternate consequence score. To ensure transparency, any deviation from the nominal consequence score has been carefully considered and justified within this report (Appendix 7).

Once consequence (Table 1) and likelihood (Table 2) scores were assigned, they were multiplied to calculate an overall risk value. This value was then compared against predefined thresholds to determine the final risk rating: ≤6 = low risk, 7–12 = moderate risk, 13–18 = high risk, and 19–30 = very high risk. These thresholds align with those used in previous assessments (Morton et al., 2022, Roelofs, 2018) and are outlined in Table 3.

This refined approach ensures that the LCA remains a reliable and flexible tool for ecological risk assessment in the QCF, particularly in addressing data gaps and incorporating stakeholder input. By integrating PSA findings and addressing uncertainties systematically, the LCA provides a strong foundation for informing management strategies for the QCF.

Criteria

Table 1 Criteria used to assign indicative scores in the **consequence** component of the analysis.

Level	Score	Definition
Negligible	0	Insignificant impacts to populations.
Minor	1	**Minimal** impact on localised population size is expected, with no impact on population dynamics. and/or Species has been classified as having a **lower vulnerability** as indicated by the PSA, which suggests that fishing activities will have a minimal impact on populations.
Moderate	2	**Noticeable** impact on local[2] populations is expected, but minimal impact on regional[3] populations. Short term recruitment/dynamics not adversely impacted. Species has been classified as having a **medium vulnerability** as indicated by the PSA, which suggests that fishing activities have a higher potential to impact local and/or regional populations.
Severe[4]	3	**Significant** impacts on populations, affecting recruitment levels of stocks or their capacity to increase and or repopulate. Species has been classified as having a **higher vulnerability** as indicated by the PSA, which suggests that fishing activities are impacting populations or will decrease the resilience of populations to rebound from harvest pressure.
Major	4	**Long term** local depletion if continued. Increased probability that harvests rates will have a long-term, detrimental impact on regional coral species or assemblages.
Catastrophic	5	**Local extinctions** are imminent/immediate.

Table 2 Criteria used to assign indicative scores in the **likelihood** component of the analysis.

Level	Score	Definition
Remote	1	No known reports of it occurring, but not impossible.
Rare	2	May occur in exceptional circumstances.

[2] For the purposes of this assessment, "local populations" refer to populations within a single fishing grid area (30 nautical miles by 30 nautical miles).

[3] "Regional populations" refer to broader areas of the GBRMP, specifically the far northern, northern, central, and southern regions (Appendix 2).

[4] This score may be used as a default (conservative) score when data deficiencies, uncertainty and a lack of evidence restricted the assignment of an alternative.

Unlikely	3	Uncommon, but has been known to occur
Possible	4	Some evidence to suggest this may occur under the current fishing environment.
Occasional	5	Will probably occur under the current fishing environment.
Likely	6	Expected to occur under the current fishing environment.

Table 3 The likelihood and consequence analysis matrix used to assign indicative risk ratings to each species.

Risk Categories				
Negligible	Low	Moderate	High	Very high

			CONSEQUENCE					
			Negligible	Minor	Moderate	Severe	Major	Catastrophic
			0	1	2	3	4	5
LIKELIHOOD	Remote	1	0	1	2	3	4	5
	Rare	2	0	2	4	6	8	10
	Unlikely	3	0	3	6	9	12	15
	Possible	4	0	4	8	12	16	20
	Occasional	5	0	5	10	15	20	25
	Likely	6	0	6	12	18	24	30

Results

Of the 20 species assessed, 13 were classified as low risk, while seven were rated as moderate[5] to high risk.

The two high-risk species, *Homophyllia* cf. *australis* and *Micromussa lordhowensis*, are corals with low growth rates, restricted distributions and specialised habitat requirements, making them particularly vulnerable to fishing pressures. Concentrated harvesting in specific areas and uncertainties around biomass and abundance further increase their risk in the current fishing environment. Despite these challenges, the risk ratings for both species improved since the previous assessment (Morton et al., 2022), reflecting the positive impact of recent management reforms which implemented harvest limits.

In 2022, 22 species were assessed during a dedicated coral ERA workshop. Of these, eight were classified as low risk, three as moderate risk, two as high risk, and two as very high risk (Table 4). Additionally, seven species could not be fully assessed due to insufficient information.

In 2026, 20 species were assessed, with 13 classified as low risk, five as moderate risk, and two as high risk. Notably, no species were rated as very high risk, and all risk ratings showed a decrease compared to 2022. This overall reduction in risk is largely attributed to management reforms implemented during the 2022–23 fishing season, which introduced quota limits and species-level reporting for all CITES-listed species.

Table 4 Comparison of the outcomes of the QCF ERA Phase 1 conducted in 2022 with the updated 2026 QCF ERA. Risk ratings were determined using the LCA methodology, based on the criteria outlined in Tables 1 and 2.

Species	2022				2026			
	Consequence	Likelihood	Risk value	Risk rating	Consequence	Likelihood	Risk value	Risk rating
Acanthastrea pachysepta	3	–	–	Not determined	2	4	8	Moderate
Acanthophyllia deshayesiana	3	4	12	Moderate	3	3	9	Moderate
Acropora aff. *microclados*	3	4	12	Moderate	2	4	8	Moderate
Blastomussa wellsi	2	3	6	Low	1	4	4	Low
Catalaphyllia jardinei	2	3	6	Low	2	3	6	Low

[5] During the workshop, *Acropora* aff. *microclados* was initially rated as "low risk." Following a detailed review, QDPI recommended revising the rating to moderate, citing the species' sensitivity, identification challenges, limited data, and potential undetected impacts. Workshop participants reviewed the recommendation and reached a consensus to adjust the rating to moderate, noting it may be revised as updated information becomes available.

Dipsastraea rosaria	–	–	–	Not assessed	2	3	6	Low
Duncanopsammia axifuga	2	2–3	4–6	Low	1	3	3	Low
Euphyllia glabrescens	3	5	15	High	2	3	6	Low
Favites pentagona	–	–	–	Not assessed	1	4	4	Low
Fimbriaphyllia ancora	3	4	12	Moderate	2	3	6	Low
Fimbriaphyllia divisa	3	–	–	Not determined	2	4	8	Moderate
Fimbriaphyllia paraancora	3	1	3	Low	1	2	2	Low
Goniopora stokesi	3	–	–	Not determined	2	3	6	Low
Heliofungia actiniformis	–	–	–	Not assessed	2	3	6	Low
Homophyllia bowerbanki	2	3	6	Low	2	3	6	Low
Homophyllia cf. *australis*	4	5	20	Very high	3	5	15	High
Lobophyllia hemprichii	3	–	–	Not determined	2	4	8	Moderate
Micromussa lordhowensis	4	5	20	Very high	4	4	16	High
Plerogyra sinuosa	–	–	–	Not assessed	2	3	6	Low
Trachyphyllia geoffroyi	4	4	16	High	2	3	6	Low

Acanthastrea pachysepta

Field identification: Moderate

CAAB code: 11 307023

Industry name: Pachysepta

Quota code: DS34

PCC: 600 kg

Biology: Colonial, massive, broadcast spawner, 40–50 mm corallite width (Veron, 2000, Baird et al., 2009, Wolstenholme, 2004).

Distribution and abundance (Queensland): Widely distributed on the GBR (Industry representatives, pers. comm. 2026), primarily collected in the southern region. Abundance is unknown. Species described as uncommon (Carpenter et al., 2008).

Habitat and depth: Prefers sheltered reef habitats (upper slopes, lagoons) at depths of 1–30 m, avoiding strong wave action (Shlesinger et al., 2022, Veron et al., 2016m, Carpenter et al., 2008).

Figure 1 – *Acanthastrea pachysepta*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Species prioritisation: Key aquarium species, international trade restrictions.

Harvest: The 600 kg PCC was exceeded by ~1% in 2022–23 and 2023–24. From 2022–23 to 2024–25, the mean harvest was 602 kg, with 70% from the top three grids.

Regional harvest distribution: From 2022–23 to 2024–25, 0% far northern, ~2% northern, ~2% central, ~96% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Acanthastrea pachysepta is a slow-growing large polyp stony coral, making it vulnerable to harvesting impacts. Additional risk factors include its high accessibility, minor quota overruns reported in recent years and concentrated harvesting in certain areas – which should be investigated. Data gaps, particularly regarding bleaching susceptibility, abundance, and biomass, contribute to uncertainty and were considered in this assessment. This species is fragmented during harvest, which preserves the parent colony and enables it to regenerate. Management measures, including a provisional species-specific harvest limit, improved monitoring, and protected areas within the GBRMP, and a reduction in total harvest in recent years have reduced the likelihood of consequences to regional *A. pachysepta* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Acanthastrea pachysepta* has been assigned a moderate risk rating, based on evidence suggesting a **moderate consequence** is **possible** under the current fishing environment. Noticeable impacts on local populations are expected, while effects on regional populations are likely to be minimal.

Risk rating: Moderate

Table 5 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Acanthastrea pachysepta.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L4 = 8	Logbook, quota, spatial data.	PCC, spatial closures.	Quota overruns.	Harvest strategy.
Information gaps: Recruitment, growth, abundance, biomass.					

Acanthophyllia deshayesiana

Field identification: Easy

CAAB code: 11 307054

Industry name: Desh

Quota code: DS36

ITQ: 600 kg

Biology: Solitary, free-living, 100 mm corallite width (Pratchett, 2021, Darus et al., 2016).

Distribution and abundance (Queensland): Patchy distribution across the GBR (Industry representatives, pers. comm. 2026), primarily collected in the northern region. Recent surveys indicate low abundance (Pratchett, 2024b, Pratchett, 2024c), while earlier studies reported moderate densities and biomass in suitable habitats (Pratchett et al., 2020).

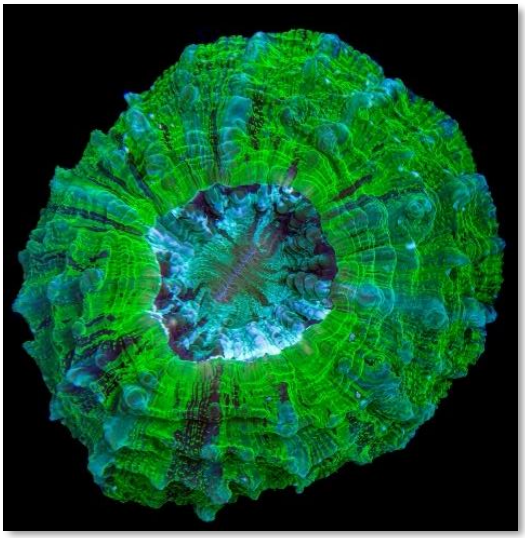


Figure 1 – *Acanthophyllia deshayesiana*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Inhabits protected reefs, overhangs, inter-reef areas, and deep soft substrates, typically found at depths ranging from 16 to 75 metres (Pratchett, 2024b, Pratchett, 2021, Veron J.E.N. et al., 2016, Reeflex, 2023).

Species prioritisation: Important aquarium species, international trade restrictions.

Harvest: The 600 kg PCC was exceeded by 3.7% in 2022–23. The mean annual harvest from 2022–23 to 2024–25 was 396 kg, with ~85.5% taken from the top three grids.

Regional harvest distribution: From 2022–23 to 2024–25, ~37% far northern, ~63% northern, 0% central, <1% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Acanthophyllia deshayesiana is a slow-growing, solitary species restricted to specific habitats, making it vulnerable to harvesting impacts. Additional risk factors include marine heatwaves, and concentrated harvesting in certain areas which should be investigated. Data gaps, particularly regarding abundance and biomass, contribute to uncertainty and were considered in this assessment. The implementation of a provisional species-specific ITQ system, enhanced monitoring and reporting mechanisms, the establishment of protected areas within the GBRMP, refuge at depth and harvest reductions have reduced the likelihood of significant consequences to *A. deshayesiana* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Acanthophyllia deshayesiana* has been assigned a **moderate risk** rating, based on evidence suggesting a **significant consequence** is **unlikely** under the current fishing environment. Significant impacts on populations that could affect stock recruitment or their capacity to increase and/or repopulate are considered unlikely.

Risk rating: Moderate

Table 6 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Acanthophyllia deshayesiana.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C3*L3 = 9	Logbook, quota, spatial data.	ITQ, spatial closures.	Concentrated harvest.	Harvest strategy.
Information gaps: Recruitment, growth, abundance, biomass.					

Acropora aff. *microclados*[6]

Field identification: Difficult

CAAB code: N/A

Industry name: Strawberry shortcake

Quota code: DO01

PCC: 19,500 kg (genus level).

Biology: Tabulate, hermaphroditic broadcast spawner, 0.6–1.2 mm corallite width (Wallace et al., 2012, Veron et al., 2016i, Reichert et al., 2018, Baird et al., 2009).[7]

Distribution and abundance (Queensland): *A.* aff. *microclados* is broadly distributed, ranging from north of Swains Reef to the Cairns region (Industry representatives, pers. comm. 2026), with reports extending as far as Cape York and Papua New Guinea (Dr Tom Bridge, pers. comm., 23 April 2026). While it is considered relatively common (Dr Tom Bridge, pers. comm., 23 April 2026), its abundance remains unknown.

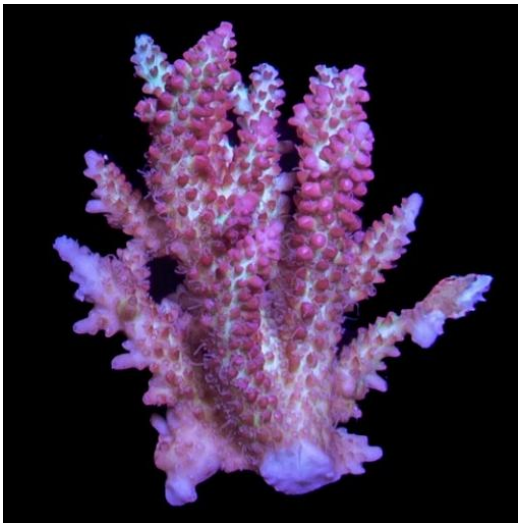


Figure 3 – *Acropora* aff. *microclados*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Inhabit a specialised ecological niche on upper reef slopes in clear, low-nutrient, high-energy water (Morton et al., 2022, Veron et al., 2016i, Chalias, 2019). Collected up to 20 metres.

Species prioritisation: Important aquarium species, moderate risk in previous ERA, most frequently harvested nominal species in the QCF.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 10,168 kg, with ~53% taken from the top three grids.

Regional harvest distribution: From 2022–23 to 2024–25, 0% far northern, 69% northern, 12% central and 19% southern.

Assessment summary

Vulnerability rating: Not assessed.

The taxonomy of *Acropora* aff. *microclados* is unclear, with evidence suggesting it may represent two to three distinct species. *A.* aff. *microclados* appears to be relatively common on the GBR. Industry typically harvests small fragments from the peripheral branches of the parent colony, with a preference for the pink and yellow colour

[6] *Acropora* aff. *microclados* is undergoing taxonomic revision, with preliminary genetic sequencing indicating at least 2–3 distinct types, possibly undescribed species, are being harvested by the QCF as "strawberry shortcake" (Pratchett, 2024a).

[7] The available data is for the species *Acropora microclados* (Ehrenberg, 1834) and has been used as a proxy.

variant. However, the absence of species-specific management measures, such as targeted monitoring and harvest limits, increases the risk of fishing-related impacts. This risk is further heightened by the species' high sensitivity to environmental disturbances and bleaching events, and unresolved taxonomic uncertainties. Despite their environmental sensitivity, they are also among the fastest to recover, especially tabular species including *A.* aff. *microclados*, which typically exhibit high recruitment (Dr Tom Bridge, pers. comm., 3 June 2026). Data gaps, particularly regarding abundance and biomass, contribute to uncertainty and were considered in this assessment. The implementation of genus-level harvest limits and the establishment of protected areas within the GBRMP have likely reduced the likelihood of significant consequences. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Acropora* aff. *microclados* has been assigned a **moderate risk** rating, based on evidence suggesting a **moderate consequence** is **possible** under the current fishing environment. Noticeable impacts on local populations are expected, while effects on regional populations are likely to be minimal.

Risk rating: Moderate

Table 7 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Acropora* aff. *microclados.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L4 = 8	Logbook, quota, spatial data.	PCC (genus), spatial closures.	Concentrated harvest.	Harvest strategy.
Information gaps: Taxonomy, recruitment, distribution, abundance, biomass.					

Blastomussa wellsi

Field identification: Easy

CAAB code: 11 307014

Industry name: Blasto

Quota code: DS78

PCC: 730 kg

Biology: Colonial, massive, hermaphroditic broadcast spawner, 9–18.9 mm corallite width (Baird et al., 2009, Veron, 2000, Wolstenholme, 2004).

Distribution and abundance (Queensland): Unknown. Species described as uncommon (Veron, 1993, Díaz and Madin, 2010). May display higher, localised abundance within suitable habitats across the GBR (Industry representatives, pers. comm. 2026).

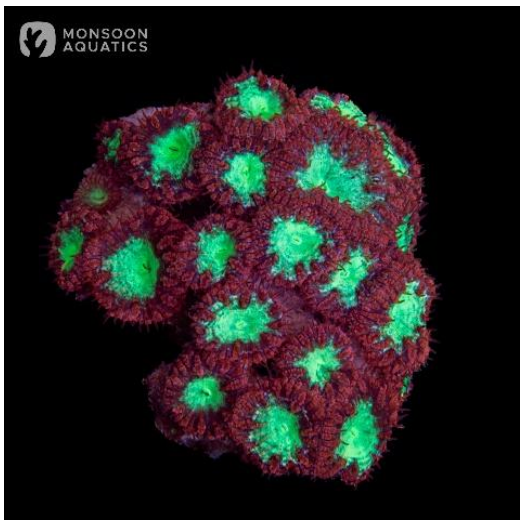


Figure 4 – *Blastomussa wellsi*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Found on sheltered lower reef slopes, turbid habitats, deep clear waters, and coastal reefs at depths of 2–40 metres (Industry representatives, pers. comm., 2026, Veron et al., 2016j, Carpenter et al., 2008).

Species prioritisation: International trade restrictions.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 363 kg, with 58% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, 33% northern, <1% central, 67% southern.

Assessment summary

Vulnerability rating: Low

(QCF VA – Appendix 6)

Blastomussa wellsi has medium-sized polyps with entire clusters collected during harvesting, and an inferred moderate susceptibility to bleaching, making it potentially vulnerable to environmental and harvesting pressures. The increasing frequency and severity of marine heatwaves pose a risk, particularly as the bleaching susceptibility of this species has not yet been assessed on the GBR. Data gaps, namely abundance and biomass, contribute to uncertainty and were considered in this assessment. However, the implementation of a species-specific harvest limit, enhanced monitoring and reporting mechanisms, the establishment of protected areas within the GBRMP, have lowered the likelihood of adverse impacts on *B. wellsi* populations. Reduced total harvest in recent years and the absence of evidence for concentrated harvesting further reduces risks. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Blastomussa wellsi* has been assigned a **low**-risk rating, based on evidence suggesting a **minor consequence** is **possible** under the current fishing environment. Minimal impact on localised population size may occur, with no impact on population dynamics.

Risk rating: Low

Table 8 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Blastomussa wellsi.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C1*L4 = 4	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, distribution, abundance, biomass, bleaching susceptibility.					

Catalaphyllia jardinei

Field identification: Easy

CAAB code: 11 327001

Industry name: Elegance coral, cat

Quota code: DS52

PCC: 1,772 kg

Biology: Colonial, massive, hermaphroditic broadcast spawner, 100–120 mm corallite width (Pratchett, 2021, Pratchett et al., 2020a, Baird et al., 2009, Veron, 2000, Pacey, 2024).

Distribution and abundance (Queensland): Widely distributed (Pratchett et al., 2020a). Species described as uncommon (Veron, 1986, Díaz and Madin, 2010). May display higher, localised abundance within suitable habitats across the GBR (Pratchett et al., 2020a, Pratchett, 2021).

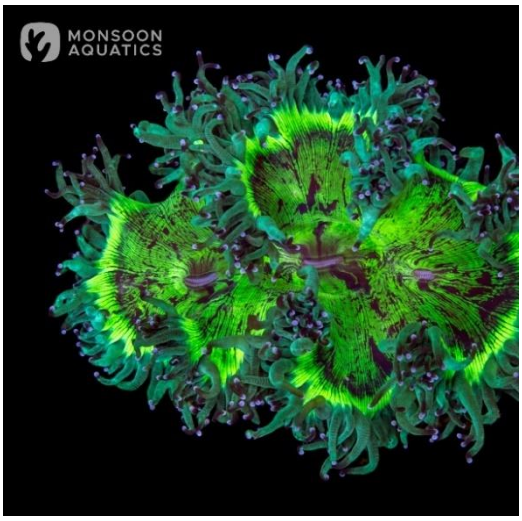


Figure 5 – *Catalaphyllia jardinei*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Typically found in sheltered, turbid waters, deeper clear waters, and inter-reef areas at depths of 0–40 metres (Veron J.E.N., 2016, Pratchett, 2021, Carpenter et al., 2008).

Species prioritisation: Important aquarium species (export), international trade restrictions.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 1075 kg, with 61% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, 24% northern, <1% central, 73% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Catalaphyllia jardinei is a free-living, large-polyp stony coral vulnerable to environmental and harvesting pressures due to its bleaching sensitivity and the collection of entire colonies. While increasing marine heatwaves pose a risk, its preference for deeper, inter-reef habitats may reduce potential impacts. Data gaps on abundance and biomass add uncertainty and were considered in the assessment. The implementation of species-specific harvest limits, enhanced monitoring and reporting mechanisms, and the establishment of protected areas within the GBRMP have reduced the likelihood of adverse impacts on *C. jardinei* populations. Moderate total harvest and reports of high localised abundance further reduce risks. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Catalaphyllia jardinei* has been assigned a **low**-risk rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 9 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Catalaphyllia jardinei.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

Dipsastraea rosaria[8]

Field identification: Difficult

CAAB code: 11 305033

Industry name: Prism coral

Quota code: DS56

PCC: 600 kg

Biology: Colonial, massive, submassive or encrusting, hermaphroditic broadcast spawner, 6.1–9.3 mm corallite width (Veron, 2000, Pratchett et al., 2015, Kuo, 2017, Shlesinger and van Woesik, 2021, Veron, 2002).

Distribution and abundance (Queensland): Unknown. Harvest primarily retained in the southern region. May display higher, localised abundance within suitable habitats across the GBR (Industry representatives, pers. comm. 2026).

Figure 6 – ***Dipsastraea rosaria*****,** Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Typically found in clear, sheltered reef environments, including shallow reef slopes and lagoons, at depths of 5–20 metres (Huang et al., 2024a, Veron et al., 2016b, Díaz and Madin, 2010, Carpenter et al., 2008).

Species prioritisation: Moderate to high total harvest.

Harvest: The 600 kg PCC was exceeded by <1% in 2023–24. From 2022–23 to 2024–25, the mean harvest was 490 kg, with 70% from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 4% northern, 1% central, 95% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Dipsastraea rosaria has medium-sized polyps, inferred moderate bleaching susceptibility, and can regenerate after fragmentation, potentially providing resilience to environmental and harvesting pressures. Quota overruns have been reported, and commercial collection occurs throughout the species' depth range, increasing its vulnerability. Limited data on distribution, abundance and biomass contribute to uncertainty and were considered in this assessment. The implementation of provisional species-specific

[8] This species is likely to be better represented as *Dipsastraea* cf. *rosaria* because current identification methods are insufficient to accurately identify this species on the GBR (Dr Tom Bridge, pers. comm., 3 June 2026). The use of "cf." acknowledges the uncertainty in its classification and suggests its resemblance to *Dipsastraea rosaria*. While this species has been recorded in Papua New Guinea, there are no confirmed records from the GBR. However, it is likely to occur in the region due to the geographic proximity of Milne Bay Province (Dr Tom Bridge, pers. comm., 3 June 2026).

harvest limits, enhanced monitoring and reporting mechanisms, and the establishment of protected areas within the GBRMP have likely reduced the potential of adverse impacts on *D. rosaria*. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Dipsastraea rosaria* has been assigned a **low-risk** rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 10 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Dipsastraea rosaria.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	Quota overruns.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

Duncanopsammia axifuga

Field identification: Moderate

CAAB code: 11 320003

Industry name: Duncan

Quota code: DS10

PCC: 966 kg

Biology: Colonial, tabular branching, attached or free-living, gonochoric broadcast spawner, corallite width 6.7–14 mm (Pratchett et al., 2020a, Pacey, 2024, Veron, 2000, Veron et al., 2016c).

Distribution and abundance (Queensland): Widespread on the GBR, abundant near Cairns and in shallow waters from Gladstone to Mackay (Industry representatives, pers. comm. 2026). Species described as rare (Veron, 1986, Díaz and Madin, 2010). May display higher, localised abundance within suitable habitats across the GBR (Industry representatives, pers. comm. 2026).

Figure 7 – *Duncanopsammia axifuga*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Industry reports indicate *D. axifuga* is typically found on soft sand or mud substrates, either unattached or attached to rubble, often forming large beds in deeper water. Its growth habit exhibits phenotypic plasticity, varying between shallow, turbid waters and clear reef environments, typically at depths of 8–30 metres (Carpenter et al., 2008, Veron et al., 2016c).

Species prioritisation: Important aquarium species (export), international trade restrictions, low–moderate risk in previous assessments.

Harvest: From 2022–23 to 2024–25, the mean harvest was 588 kg, with 59% from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 42% northern, <1% central, 58% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Duncanopsammia axifuga has medium-sized polyps, some ecological resilience, and the ability to regenerate after fragmentation, potentially providing resilience to environmental and harvesting pressures. However, the species grows in a specific ecological niche, and its entire depth range is accessible to commercial fishers. Limited data on its abundance and biomass introduces uncertainty, which was considered in this assessment. The implementation of a species-specific harvest limit, enhanced monitoring and reporting mechanisms, and the establishment of protected areas within the GBRMP, have lowered the likelihood of adverse impacts on *D. axifuga* populations. Total

harvest reductions in recent years and the absence of evidence for concentrated harvesting further reduces risks. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Duncanopsammia axifuga* has been assigned a **low**-risk rating, based on evidence suggesting a **minor consequence** is **unlikely** under the current fishing environment. Minimal impact on localised population size may occur in exceptional circumstances, with no impact on population dynamics.

Risk rating: Low

Table 11 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Duncanopsammia axifuga.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C1*L3 = 3	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

Euphyllia glabrescens

Field identification: Easy

CAAB code: 11 327005

Industry name: Torch

Quota code: DS22

ITQ: 926 kg

Biology: Colonial, massive, hermaphroditic brooder, 8–19 mm corallite width (Veron, 2000, Fan et al., 2006, Pratchett et al., 2020a, Toh and Ng, 2016, Pacey, 2024, Pacey et al., 2023).

Distribution and abundance (Queensland): Widespread on the GBR (Pratchett, 2024b). Species described as uncommon (Veron, 1986, Díaz and Madin, 2010) with a patchy abundance (Pacey et al., 2023). May display higher, localised abundance within the GBR (Pratchett et al., 2020a). There is evidence of decreasing abundance in certain fishing grounds within the GBR (Pratchett, 2024b).

Figure 8 – *Euphyllia glabrescens*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Found in a wide range of reef environments across various substrate types, at depths of 1–35 metres (Pratchett, 2024b, Veron et al., 2016h, Carpenter et al., 2008).

Species prioritisation: Important aquarium species (export), quota overrun in 2022–23, international trade restrictions, moderate-high risk in previous assessments.

Harvest: The 926 kg PCC was exceeded by <1% in 2022–23. The mean annual harvest from 2022–23 to 2024–25 was 564 kg, with 60% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 3% far northern, 16% northern, 14% central, 68% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Euphyllia glabrescens is a brooding, large-polyp stony coral and is highly accessible to commercial fishing, increasing its vulnerability to harvesting impacts. Marine heatwaves pose an additional and significant threat to *E. glabrescens* due to its high sensitivity to heat stress. The increasing frequency and intensity of these events elevate the risk of bleaching and mortality, particularly for local populations in affected areas. Limited data on abundance and biomass adds uncertainty to the assessment. The implementation of a species-specific ITQ, enhanced monitoring and reporting mechanisms, the establishment of protected areas within the GBRMP, and reduced total harvest in recent years have lowered the likelihood of adverse impacts on regional *E. glabrescens* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Euphyllia glabrescens* has been assigned a **low**-risk rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations have been observed, however, effects on regional populations are expected to remain minimal.

Risk rating: Low

Table 12 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Euphyllia glabrescens.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	ITQ, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

Favites pentagona

Field identification: Moderate

CAAB code: 11 305051

Industry name: War coral

Quota code: DS59

PCC: 600 kg

Biology: Colonial, submassive, encrusting, hermaphroditic broadcast spawner, 3.8–8.5 mm corallite width (Wolstenholme, 2004, Baird et al., 2009, Veron, 2000, Veron et al., 2016a).

Distribution and abundance (Queensland): Industry reports indicate that this species is commonly found around Yeppoon, the Keppel Islands, the Bunker Group, and Mackay, suggesting it may be widespread across the GBR (Industry representatives, pers. comm. 2026). Species described as common (Veron, 1986, Díaz and Madin, 2010). Abundance is unknown.

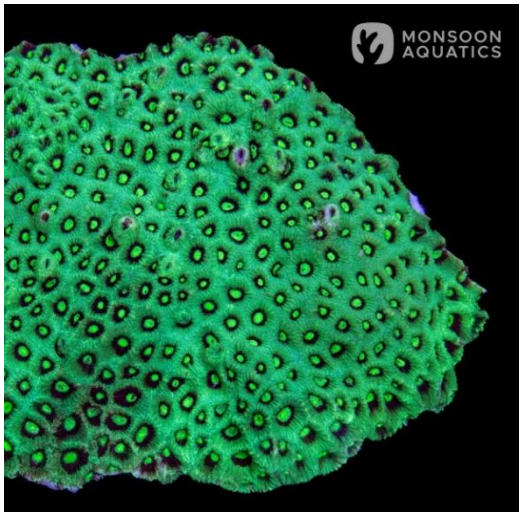


Figure 9 – *Favites pentagona*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Found on subtidal rock and rocky reefs, outer reef channels, and in lagoons (Huang et al., 2024d). While reportedly associated with shallow reef environments (Veron et al., 2016a), industry reports document its occurrence at depths of up to 50 metres.

Species prioritisation: Moderate catch rates, low risk in previous assessments.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 317 kg, with 59% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 18% northern, <1% central, 81% southern.

Assessment summary

Vulnerability rating: Low

(QCF VA – Appendix 6)

Favites pentagona has small to medium-sized polyps, inferred ecological resilience, the ability to regenerate after fragmentation, and is of lower value and of lower demand compared to other species, potentially reducing its vulnerability to environmental and harvesting pressures. However, its low growth rate and preference for depths that are highly accessible to commercial fishers may increase its susceptibility to harvest, despite the availability of refuge at greater depths. Limited data on its abundance and biomass contribute to uncertainty and were considered in this assessment. The implementation of species-specific harvest limits, enhanced monitoring and reporting mechanisms, and the establishment of protected areas within the GBRMP have likely reduced risks to this species. Combined with lower harvest rates, these measures have

reduced the likelihood of significant impacts to regional and local populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Favites pentagona* has been assigned a **low**-risk rating, based on evidence suggesting a **minor consequence** is **possible** under the current fishing environment. Minimal impact on localised population size is possible, with no impact on population dynamics.

Risk rating: Low

Table 13 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Favites pentagona*.

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C1*L4 = 4	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, distribution, abundance, biomass.					

Fimbriaphyllia ancora

Field identification: Easy

CAAB code: 11 327002

Industry name: Hammer

Quota code: DS23

ITQ: 1863 kg

Biology: Colonial, flabello-meandroid, gonochoric broadcast spawner, 16–45 mm corallite width (Baird et al., 2009, Veron, 2000).

Distribution and abundance (Queensland): Abundance and distribution is unknown. Species described as uncommon (Díaz and Madin, 2010, Veron, 1986). There is evidence of decreasing abundance in certain GBR fishing grounds (Pratchett, 2024b). In suitable conditions, *F. ancora* may be a dominant species on protected reefs and rocky outcrops in high-latitude regions (Pratchett, 2021).

Figure 10 – *Fimbriaphyllia ancora*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Typically found in reef and rocky habitats on hard substrata, with large colonies commonly occurring in shallow reef environments exposed to moderate wave action (Veron et al., 2016e, Pratchett, 2024b). It is generally observed at depths of 6–30 metres (Carpenter et al., 2008), though industry representatives report occurrences at greater depths within the GBR (Industry representatives, pers. comm. 2026).

Species prioritisation: Important aquarium species (value), quota overrun in 2022–23, international trade restrictions, low to moderate risk in previous assessments.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 1242 kg, with 50% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 13% northern, 2% central, 85% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Fimbriapyllia ancora is a large-polyp stony coral that is highly accessible to commercial fishers, making it vulnerable to harvesting impacts. This species is fragmented during harvest, which preserves the parent colony and enables it to regenerate. Limited species-specific data on its growth rates, bleaching susceptibility, abundance, and biomass contribute to uncertainty and were considered in this assessment. The implementation of species-specific harvest limits, improved monitoring and reporting systems, and the establishment of protected areas within the GBRMP, have reduced the likelihood of significant consequences to *F. ancora* populations. These management measures, coupled with harvest levels remaining below the allocated ITQ, suggest that

regional populations are likely to remain largely unaffected under the current fishing conditions. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Fimbriaphyllia ancora* has been assigned a **low-risk** rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 14 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Fimbriaphyllia ancora.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	ITQ, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass, growth rate, bleaching susceptibility.					

Fimbriaphyllia divisa

Field identification: Easy

CAAB code: 11 327004

Industry name: Frogspawn

Quota code: DS24

PCC: 600 kg

Biology: Colonial, flabello-meandroid, gonochoric broadcast spawner, 22 mm corallite width (Veron, 2000, Baird et al., 2009).

Distribution and abundance (Queensland): Unknown. Species has been described as uncommon (Veron, 1986, Díaz and Madin, 2010). There is evidence of decreasing abundance in certain fishing grounds within the GBR (Pratchett, 2024b). May display higher, localised abundance within suitable habitats (Industry representatives, pers. comm. 2026).

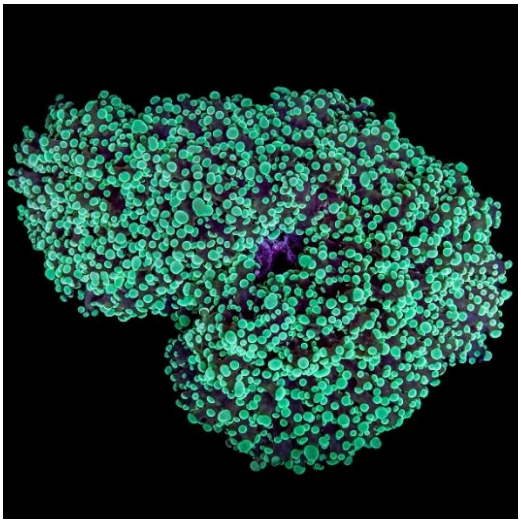


Figure 11 – *Fimbriaphyllia divisa*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Occurs in reef and rocky habitats on hard substratum, typically in shallow, turbid, and sheltered reef environments at depths of up to 35 metres (Johnson et al., 2024, Veron et al., 2016k, Pratchett, 2024b, Carpenter et al., 2008). Industry report observing it in most reef environments.

Species prioritisation: Important aquarium species (export), international trade restrictions, quota overrun in 2022–23, 2023–24 and 2024–25.

Harvest: The 600 kg PCC was exceeded by <1%, 7% and 4% in 2022–23, 2023–24 and 2024–25. The mean annual harvest from 2022–23 to 2024–25 was 612 kg, with 59% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, 13% northern, 3% central, 84% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Fimbriaphyllia divisa is a large-polyp stony coral with an inferred moderate growth rate. Increasing marine heatwaves pose a risk, particularly as its bleaching susceptibility on the GBR remains unknown. High accessibility, quota overruns, and a "race-to-fish" dynamic may exacerbate localised pressures. Limited data on bleaching susceptibility, abundance, and biomass add uncertainty and were considered in the assessment. Management measures, including species-specific harvest limits, improved monitoring, and protected areas within the GBRMP, have likely reduced risks to regional populations. However, consistent quota overruns, even at levels below 7%, has the potential to affect local populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Fimbriaphyllia divisa* has been assigned a moderate risk rating, based on evidence suggesting a **moderate consequence** is **possible** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Moderate

Table 15 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Fimbriaphyllia divisa.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L4 = 8	Logbook, quota, spatial data.	PCC, spatial closures.	Quota overruns.	Harvest strategy.
Information gaps: Recruitment, growth, abundance, biomass, bleaching susceptibility.					

Fimbriaphyllia paraancora

Field identification: Easy

CAAB code: 11 327006

Industry name: Paraancora

Quota code: DS25

PCC: 600 kg

Biology: Colonial, phaceloid, gonochoric broadcast spawner, 29–30 mm corallite width (Luzon et al., 2017, Veron, 2000).

Distribution and abundance: Unknown. Considered uncommon, but may display higher, localised abundance within suitable habitats across the GBR (Industry representatives, pers. comm. 2026).

Habitat and depth: Shallow to deep reef environments and found across most regions of the reef. Typically found at depths of up to 30 metres but occasionally occurring as deep as 70 metres (Luzon et al., 2024, Carpenter et al., 2008, Fujii et al., 2020).

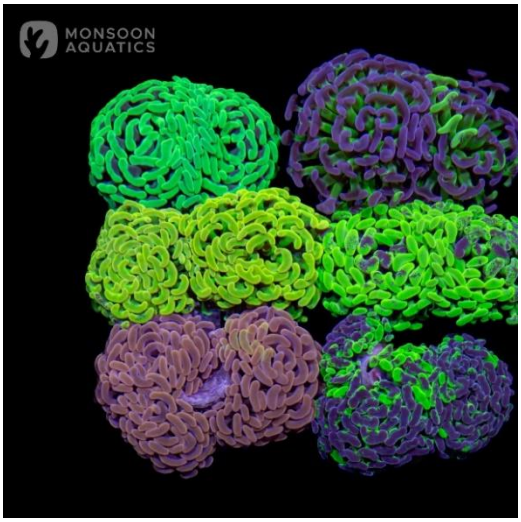


Figure 12 – *Fimbriaphyllia paraancora*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Species prioritisation: Important aquarium species (export), international trade restrictions.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 19 kg, with 95% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, 86% northern, 0% central, 14% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

F. paraancora is a large-polyp stony coral and is fragmented during harvest, which preserves the parent colony and enables it to regenerate. The increasing frequency and severity of marine heatwaves pose a risk, particularly as the bleaching susceptibility of this species has not yet been assessed on the GBR. Data gaps, namely abundance, biomass and distribution, contribute to uncertainty and were considered in this assessment. Management measures, including a species-specific harvest limit, enhanced monitoring, and the establishment of protected areas within the GBRMP, combined with very low harvest rates have reduced the likelihood of adverse impacts on local and regional populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Fimbriaphyllia paraancora* has been assigned a **low**-risk rating, based on evidence suggesting a **minor consequence** is **rare** under the current fishing environment. Minimal impact on localised population size may occur in exceptional circumstances, with no impact on population dynamics.

Risk rating: Low

Table 16 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Fimbriaphyllia paraancora.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C1*L2 = 2	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, distribution, abundance, biomass, bleaching susceptibility.					

Goniopora stokesi[9]

Field identification: Difficult

CAAB code: 11 325028

Industry name: Goni

Quota code: DS82

PCC: 600 kg

Biology: Colonial, free-living, gonochoric broadcast spawner, 2.7–6 mm corallite width (Crabbe et al., 2024, Veron, 2000, Yasuda et al., 2021, Kitano et al., 2013).

Distribution and abundance: Unknown. Species described as uncommon (Veron, 1986, Díaz and Madin, 2010). Industry report it is being commonly encountered in inter-reefs from Cairns to Princess Charlotte Bay. While difficult to quantify, this species may display a degree of site fidelity as it can be observed (regionally) in high abundance (Morton et al., 2022).

Figure 13 – *Goniopora stokesi*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Typically found on soft substrates in turbid waters at depths of up to 42 metres (Crabbe et al., 2024). However, industry reports indicate its presence across various reef environments, suggesting it is not confined to soft substrata.

Species prioritisation: Important aquarium species, quota overruns in 2022–23.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 521 kg, with 61% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 3% far northern, 57% northern, <1% central, 40% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Goniopora stokesi has small to moderate sized polyps and occupies a wide range of reef environments and depths, which may increase its resilience to environmental disturbances and harvest pressures. While the species is vulnerable to commercial collection due to the harvesting of entire colonies, its ability to produce dense populations through asexual reproduction provides further resilience. Data gaps on abundance and biomass add uncertainty and were considered in the assessment. Management measures, including species-specific harvest limits, enhanced monitoring, and

[9] *Goniopora stokesi* is likely to be better represented as *Goniopora* cf. *stokesi*, given the unresolved taxonomy of the genus *Goniopora* (Dr Tom Bridge, pers. comm. 3 June 2026). The current challenges in species-level identification make accurate classification difficult.

protected areas within the GBRMP, have further mitigated potential impacts on *G. stokesi* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Goniopora stokesi* has been assigned a **low**-risk rating, based on evidence suggesting a **moderate**[10] **consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 17 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Goniopora stokesi.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

[10] The vulnerability assessment for *Goniopora stokesi* was revised following the workshop, incorporating updated information provided during the discussions. This resulted in an increase in the vulnerability rating from low to medium. During the workshop, discussions on the consequence score began at "minor" (score of 1), based on the preliminary low vulnerability rating. With the revised information, these discussions would have commenced at a "moderate" consequence score (score of 2). Accordingly, the consequence score has been adjusted from 1 to 2 to reflect this change. The overall risk rating remains unchanged.

Heliofungia actiniformis

Field identification: Easy

CAAB code: 11 298036

Industry name: Helio

Quota code: DS30

PCC: 600 kg

Biology: Solitary, free-living, broadcast spawner and brooder, ~150 mm corallite width (Sayco et al., 2024, Veron, 2000, Baird et al., 2009).

Distribution and abundance (Queensland): Widespread, found from the Capricorn and Bunker Group up to Cairns (Industry representatives, pers. comm. 2026). Species described as common (Veron, 1986, Díaz and Madin, 2010).

Figure 14 – *Heliofungia actiniformis*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Typically found in turbid, sheltered reef environments at depths of up to 25 metres (Veron, 2000, Díaz and Madin, 2010, Carpenter et al., 2008). This species is also reported by industry to occur in high densities in deeper, clear-water habitats.

Species prioritisation: Important aquarium species (export), international trade restrictions.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 231 kg, with 70% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 19% northern, 6% central, 75% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Heliofungia actiniformis is a solitary, large-polyp stony coral that is vulnerable to commercial collection as the entire colony is harvested and fishing occurs across its preferred depth range. However, this species exhibits multiple reproductive modes that may result in high fecundity, has an inferred moderate growth rate, is considered common on the GBR and harvesting is highly selective. These factors, combined with its potential stress tolerance and low harvests, reduce the risk posed to this species. Data gaps, particularly regarding abundance and biomass, add uncertainty and were considered in this assessment. Management measures, including species-specific harvest limits, enhanced monitoring, and protected areas within the GBRMP, have further reduced the likelihood of adverse impacts on *H. actiniformis* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Heliofungia actiniformis* has been assigned a **low**-risk rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 18 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Heliofungia actiniformis.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass.					

Homophyllia bowerbanki[11]

Field identification: Moderate

CAAB code: 11 307001

Industry name: Bowerbanki

Quota code: DS40

PCC: 600 kg

Biology: Colonial, massive or encrusting, 20–25 mm corallite width (Veron, 2000, Veron et al., 2016f), hermaphroditic broadcast spawner (pers. comm. industry member).

Distribution and abundance (Queensland): This species is more abundant in subtropical locations in Queensland (Dr Tom Bridge, pers. comm., 3 June 2026). A localised status assessment found little difference in its abundance between fished and no-take zones on the Great Barrier Reef, with no evidence of localised depletion (Pratchett, 2024b).

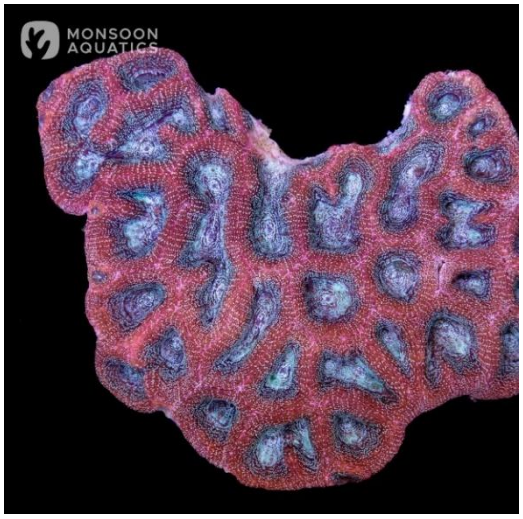


Figure 15 – *Homophyllia bowerbanki*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Found in reef and rocky habitats on hard substrata and along protected lower reef slopes, typically at depths of 2–20 metres (Pratchett, 2024b, Veron et al., 2016f, Carpenter et al., 2008). Reported to occur at depths of up to 25 metres (Industry representatives, pers. comm. 2026).

Species prioritisation: Higher catch rates, low to moderate risk in previous assessments.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 550 kg, with 63% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, <1% northern, <1% central, 99% southern.

Assessment summary

Vulnerability rating: Medium
(QCF VA – Appendix 6)

Homophyllia bowerbanki is a large-polyp stony coral that is highly accessible to commercial fishing due to its narrow depth range, which increases its vulnerability to harvesting pressures. The species has been reported to exhibit a high incidence of partial mortality on the GBR, and limited data on its bleaching susceptibility adds uncertainty regarding its resilience. However, *H. bowerbanki* occurs across a range of reef environments and total harvest is within the provisional quota limit. Management measures, including species-specific harvest limits, enhanced monitoring and reporting mechanisms,

[11] *Homophyllia bowerbanki* is likely to be better represented as *Homophyllia* cf. *bowerbanki* due to considerable taxonomic uncertainty surrounding this species (Dr Tom Bridge, pers. comm. 3 June 2026). The use of "cf." reflects the unresolved classification and acknowledges the challenges in accurately identifying this species.

and the establishment of protected areas within the GBRMP, have likely reduced the potential for adverse impacts on *H. bowerbanki* populations. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Homophyllia bowerbanki* has been assigned a **low-risk** rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 19 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Homophyllia bowerbanki.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, abundance, biomass, bleaching susceptibility.					

Homophyllia cf. *australis*[12]

Field identification: Moderate

CAAB code: N/A

Synonym/s: *Scolymia australis*

Industry name: Scoly

Quota code: DS39

ITQ: 1,065 kg

Biology: Solitary, massive, free-living or attached, hermaphroditic broadcast spawner, 50–75 mm corallite width (Pratchett, 2021, Veron et al., 2016n, Veron, 2000, Pratchett et al., 2020a, Pratchett and Kelley, 2020).

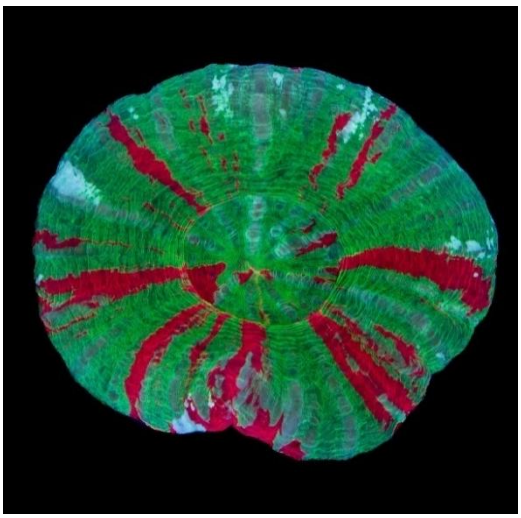


Figure 16 – *Homophyllia* cf. *australis*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Distribution and abundance (Queensland): Genetic analysis suggests that the distribution of *H.* cf. *australis* is predominantly confined to the southern region of the GBR and potentially endemic, or at the very least, to the south-west Pacific (Pratchett, 2024b, Pratchett et al., 2020a). There is evidence of decreasing abundance in certain fishing grounds within the GBR (Pratchett, 2024b).

Habitat and depth: Specialist species found in reef and rocky environments at higher latitudes, typically inhabiting cooler ocean temperatures at depths ranging from 10 to 40 metres (Pratchett, 2024b, Veron et al., 2016n, Roche et al., 2024, Carpenter et al., 2008).

Species prioritisation: Important aquarium species (export), quota overruns in 2022–23, international trade restrictions, moderate to extreme risk in previous assessments.

Harvest: The 1,065 kg PCC was exceeded by 17% in 2022–23. The mean annual harvest from 2022–23 to 2024–25 was 821 kg, with 75% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, <1% northern, <1% central, 99% southern.

Assessment summary

Homophyllia cf. *australis* is a slow-growing, solitary, large polyp stony coral with a restricted range and a

Vulnerability rating: High

(QCF VA – Appendix 6)

[12] The taxonomy of *Homophyllia australis* remains unresolved, with genetic analyses suggesting that up to three distinct species may be harvested under this name in Australia. This report focuses specifically on *Homophyllia* cf. *australis*, a species associated with the southern GBR (Pratchett et al., 2020a). Emerging evidence indicates that *Homophyllia australis* may be reclassified into a new genus that does not occur in Queensland (Dr Tom Bridge, pers. comm., 2026). However, recent research on *H.* cf. *australis* on the GBR remains relevant despite the potential for future taxonomic revisions. The species *Homophyllia* cf. *australis* may be distributed across the south-west Pacific, from Lord Howe Island to New Caledonia, with no confirmed records north of the southern GBR.

reliance on specific habitats, making it highly vulnerable to harvesting impacts. Additional risk factors include its high sensitivity to heat stress, and the increasing frequency and intensity of marine heatwaves, which pose a threat to local and regional populations. Data gaps, particularly abundance and biomass, contribute to uncertainty and were considered in this assessment. Concentrated harvesting in certain areas exacerbates the vulnerability of *H.* cf. *australis* and warrants further investigation. The implementation of a species-specific ITQ system, enhanced monitoring and reporting mechanisms, the establishment of protected areas within the GBRMP, and a reduction in the total harvest of this species in recent years have reduced the likelihood of significant consequences to *H.* cf. *australis*. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Homophyllia* cf. *australis* has been assigned a **high**-risk rating, based on evidence suggesting a **significant consequence** will be **occasional** under the current fishing environment. Significant impacts on populations that could affect stock recruitment or their capacity to increase and/or repopulate will probably occur. The 2026 risk rating for *H.* cf. *australis* is lower than that assigned to the species in the 2022 assessment (Morton et al., 2022).

Risk rating: High

Table 20 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Homophyllia* cf. *australis*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C3*L5 = 15	Logbook, quota, spatial data.	ITQ, spatial closures.	Concentrated harvest.	Harvest strategy.
Information gaps: Recruitment, taxonomy, abundance, biomass.					

Lobophyllia hemprichii

Field identification: Moderate

CAAB code: 11 307022

Industry name: Lobo

Quota code: DS42

PCC: 600 kg

Biology: Colonial, flabello-meandroid, hermaphroditic broadcast spawner, 16.5–26.8 mm corallite width (Baird et al., 2009, Veron, 2000).

Distribution and abundance (Queensland): Widespread. Species described as common and often a dominant species in reef habitats (Veron, 1986, Díaz and Madin, 2010, Veron et al., 2016l). There is evidence of decreasing abundance in certain fishing grounds within the GBR (Pratchett, 2024b). May display higher, localised abundance within suitable habitats (Industry representatives, pers. comm. 2026).

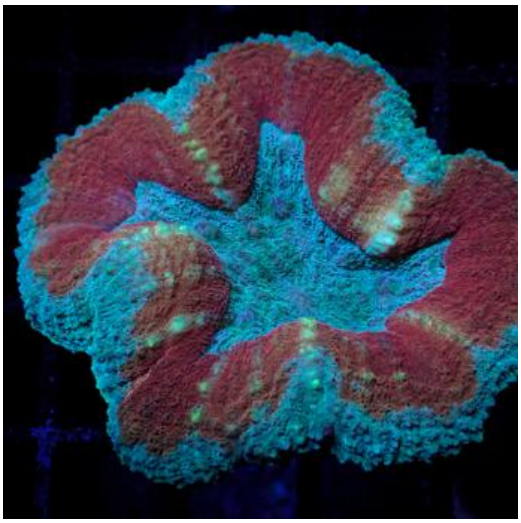


Figure 17 – *Lobophyllia hemprichii*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Generalist species, found in various reef environments, including upper reef slopes and lagoons and exposed walls on hard substratum in depths up to 50 metres (Porter et al., 2022, Veron et al., 2016l, Pratchett, 2024b).

Species prioritisation: Important aquarium species, quota overruns, international trade restrictions.

Harvest: The 600 kg PCC was exceeded by 6%, 2% and <1% in 2022–23, 2023–24, and 2024–25 respectively. The mean annual harvest from 2022–23 to 2024–25 was 616 kg, with 60% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, 20% northern, <1% central, 80% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Lobophyllia hemprichii is a large-polyp stony coral with consistent quota overruns, making it vulnerable to harvesting impacts. However, *L. hemprichii* is a generalist species with a broad distribution across the GBR, with refuge in deeper waters beyond the typical fishing depth profile, which may offer some resilience to harvesting pressures. The lack of species-specific data on growth rates, bleaching susceptibility, abundance, and biomass contribute to uncertainty and were considered in the assessment. Management measures, including provisional species-specific harvest limits, enhanced monitoring and reporting systems, and the establishment of protected areas within the GBRMP, have likely reduced the risk of significant impacts on regional *L. hemprichii* populations. Despite these efforts, the ongoing quota overruns of this species should be

further managed to mitigate risk. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Lobophyllia hemprichii* has been assigned a moderate risk rating, based on evidence suggesting a **moderate consequence** is **possible** under the current fishing environment. Noticeable impacts on local populations are expected, while effects on regional populations are likely to be minimal.

Risk rating: Moderate

Table 21 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Lobophyllia hemprichii.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L4 = 8	Logbook, quota, spatial data.	PCC, spatial closures.	Quota overruns.	Harvest strategy.
Information gaps: Recruitment, growth, bleaching susceptibility, abundance, biomass.					

Micromussa lordhowensis[13]

Field identification: Moderate

CAAB code: 11 307008

Industry name: Acan

Quota code: DS48

ITQ: 3,715 kg

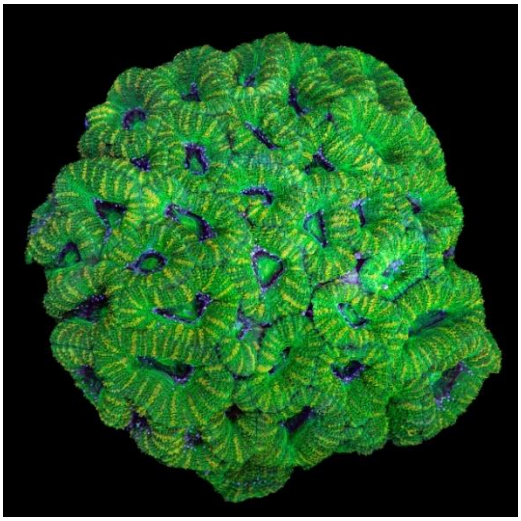


Figure 18 – *Micromussa lordhowensis*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Biology: Colonial, massive, hermaphroditic broadcast spawner, 7.5–13.5 mm corallite width (Wilson and Harrison, 2003, Pratchett, 2021, Pacey, 2024, Veron, 2000).

Distribution (Australia): Endemic to south-eastern Australia, with its distribution limited to the southern GBR, south-east Queensland, northern New South Wales, and the Tasman Sea (Dr Tom Bridge, pers comm., 2026), as supported by molecular studies (Arrigoni et al., 2016). It is found across the southern GBR and northern New South Wales, including the Solitary Islands, as well as Norfolk Island and Lord Howe Island. Species described as common (Veron, 1986, Díaz and Madin, 2010). However, Pratchett (2021) notes that it is generally uncommon on the GBR, with abundance limited to certain areas. There is evidence of decreasing abundance in certain fishing grounds within the GBR (Pratchett, 2024b).

Habitat and depth: Found on exposed walls on hard substratum (Pratchett, 2024b), and shallow, turbid reef habitats (Veron et al., 2016g, Pratchett, 2021). This species is found in highest abundance on high latitude (e.g. subtropical) reefs in cooler waters, from 1–30 metres (Arrigoni et al., 2016, Huang et al., 2024b, Carpenter et al., 2008).

Species prioritisation: Important aquarium species (export), quota overrun in 2022–23, moderate to extreme risk in previous assessments.

Harvest: The 3,715 kg PCC was exceeded by <1% in 2022–23. The mean annual harvest from 2022–23 to 2024–25 was 2532 kg, with 60% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, 0% far northern, <1% northern, <1% central, 99% southern.

Assessment summary

Vulnerability rating: High

(QCF VA – Appendix 6)

Micromussa lordhowensis is an endemic, large-polyp stony coral with a low growth rate (observed in the

[13] Recent taxonomic research suggests that specimens referred to as *Micromussa lordhowensis* comprises two distinct species, one predominantly found in tropical regions and the other in subtropical regions (Dr Tom Bridge, pers. comm., 2026). This ERA focuses on the sub-tropical species collected in the QCF.

field and in captivity), making it particularly vulnerable to harvesting impacts. Additional risk factors include its high accessibility, it is a specialist species – only found in suitable habitats, and it has a restricted distribution within Queensland. The species is reportedly highly sensitive to environmental changes, with evidence of localised declines in abundance due to fishing pressures. Management measures, such as the implementation of a species-specific ITQ system, improved monitoring and reporting systems, and the establishment of protected areas within the GBRMP, have reduced the likelihood of significant consequences to regional populations in the current fishing environment. However, the quota allocated for this species may be too high (when compared with other specialty corals) and should be reviewed. A large proportion of the harvest is also sourced from a small number of grids. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Micromussa lordhowensis* has been assigned a **high**-risk rating, based on evidence suggesting a **major consequence** is **possible** under the current fishing environment. There is some evidence to suggest that that harvests rates will have a long-term, detrimental impact on regional coral species or assemblages if continued.

Risk rating: High

Table 22 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Micromussa lordhowensis.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C4*L4 = 16	Logbook, quota, spatial data.	ITQ, spatial closures.	Spatial harvest, concentrated harvest.	Harvest strategy.
Information gaps: Recruitment, taxonomy, abundance, biomass.					

Plerogyra sinuosa

Field identification: Easy

CAAB code: 11 327011

Industry name: Plero

Quota code: DS80

PCC: 600 kg

Biology: Colonial, flabello-meandroid, gonochoric broadcast spawner, 15–30 mm corallite width (Veron, 2000, Baird et al., 2009).

Distribution and abundance (Queensland): Distribution and abundance are unknown. Species described as uncommon (Veron, 1986, Díaz and Madin, 2010). May display higher, localised abundance within suitable habitats, particularly around the islands near Mackay (Industry representatives, pers. comm. 2026).

Figure 19 – *Plerogyra sinuosa*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Habitat and depth: Found in protected reef environments, often in turbid conditions (Bayley et al., 2024). Industry feedback indicates it is found from coastal outer islands to clear, deep reef edges, at depths of up to 35 metres on the GBR (Industry representatives, pers. comm. 2026).

Species prioritisation: Moderate total harvest, international trade restrictions.

Harvest: The mean annual harvest from 2022–23 to 2024–25 was 335 kg, with 57% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 25% northern, 1% central, 74% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Plerogyra sinuosa is a large-polyp stony coral that is vulnerable to commercial collection, as entire colonies are harvested, and fishing activities overlap with its preferred depth range. However, the overall risk to the species is likely moderated as it is a generalist – occupying a range of reef habitats, moderate harvest levels, and limited evidence of concentrated harvesting. Additionally, *P. sinuosa* is potentially resilient to disturbances due to its stress tolerance, which may reduce risks to local and regional populations. Data gaps, particularly regarding growth rates, abundance, and biomass, contribute to uncertainty and were considered during the assessment. Management measures, such as species-specific harvest limits, enhanced monitoring and reporting mechanisms, and the establishment of protected areas within the GBRMP, have further

reduced the likelihood of adverse impacts on *P. sinuosa* populations in the current fishing environment. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Plerogyra sinuosa* has been assigned a **low-risk** rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 23 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Plerogyra sinuosa.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	None identified.	Harvest strategy.
Information gaps: Recruitment, growth rates, abundance, biomass, bleaching susceptibility.					

Trachyphyllia geoffroyi

Field identification: Easy

CAAB code: 11 305116

Industry name: Trachy

Quota code: DS74

ITQ: 701 kg

Biology: Flabello-meandroid, free-living and solitary, hermaphroditic broadcast spawner, 60–100 mm corallite width (Pratchett and Kelley, 2020, Pratchett et al., 2020a, Baird et al., 2009, Pratchett, 2021, Veron et al., 2016d, Veron, 2000).

Figure 20 – *Trachyphyllia geoffroyi*, Monsoon Aquatics.

Image: Juno Siu and Mark Tate.

Distribution and abundance (Queensland): *Trachyphyllia geoffroyi* is widely distributed across the GBR but has a patchy abundance, with high population densities observed in favourable conditions (Pratchett et al., 2020a, Huang et al., 2024c). While this species has been described as rare (Veron, 1986, Díaz and Madin, 2010), it can occur in high abundance within suitable habitats and specific areas of the GBR (Pratchett, 2021, Pratchett, 2024c). However, its overall biomass is likely low due to its patchy distribution, preference for non-reef habitats, and the small size of individual colonies (Pratchett et al., 2020a).

Habitat and depth: *Trachyphyllia geoffroyi* is a specialist species typically found in inter-reef environments on soft substratum, particularly around continental islands (Veron et al., 2016d, Pratchett, 2021, Huang et al., 2024c, Pratchett, 2024b). It commonly occurs in depths to 40 metres but has also been reported at depths reaching 65 metres (Huang et al., 2024c).

Species prioritisation: Important aquarium species (export), quota overrun in 2022–23, moderate to high risk in previous assessments, international trade restrictions, localised depletion concerns in the southern GBR.

Harvest: The 701 kg PCC was exceeded by 6% in 2022–23. The mean annual harvest from 2022–23 to 2024–25 was 498 kg, with 86% taken from the top three grids.

Regional catch distribution: From 2022–23 to 2024–25, <1% far northern, 16% northern, 0% central, 84% southern.

Assessment summary

Vulnerability rating: Medium

(QCF VA – Appendix 6)

Trachyphyllia geoffroyi is a solitary, large-polyp stony coral and a reliance on specific habitats, making it particularly vulnerable to harvesting impacts. Harvesting is highly concentrated in certain areas; however, total harvest remains within the allocated quota. The implementation of species-specific harvest limits, enhanced monitoring

and reporting mechanisms, and the establishment of protected areas within the GBRMP have reduced the likelihood of adverse impacts on *T. geoffroyi* populations. Moderate total harvest and reports of high localised abundance further reduce risks. For detailed justifications regarding this species, refer to Appendix 7.

Risk rating: *Trachyphyllia geoffroyi* has been assigned a **low-risk** rating, based on evidence suggesting a **moderate consequence** is **unlikely** under the current fishing environment. Noticeable impacts on localised populations may occur, with minimal effects on regional populations.

Risk rating: Low

Table 24 Summary of the 2026 assessment rating, current and future monitoring and risk mitigation and information gaps for *Trachyphyllia geoffroyi.*

Assessment	2026	Current		Identified needs	
		Monitoring	Risk mitigation	Monitoring	Risk mitigation
C x L	C2*L3 = 6	Logbook, quota, spatial data.	PCC, spatial closures.	Concentrated harvest.	Harvest strategy.
Information gaps: Recruitment					

Discussion

The QCF ERA assessed the risk to 20 Scleractinia species in the current fishing environment, while the broader assessment considered over 200 coral species, including all those listed under CITES. Of the 20 species assessed, 18 were assigned risk ratings of low (*n* = 13), or moderate (*n* = 5). Considerable weighting was placed on the effectiveness of risk mitigation measures implemented since the previous assessment (Morton et al., 2022). The results of the species prioritisation process and ERA indicate that the QCF is a lower-risk fishery within the broader context of the GBRMP. However, two species received risk ratings of high (*n* = 2) due to their biological and ecological characteristics combined with high market demand.

Management reforms

The QCF operates under a stringent management framework integrating input and output controls and requires compliance with regulations governing the use of marine resources within the World Heritage Area (Department of Agriculture and Fisheries, 2022, Great Barrier Reef Marine Park Authority, 2022c, Great Barrier Reef Marine Park Authority, 2018). This includes the requirement to comply with Great Barrier Reef Marine Park Zoning Plan 2003, which restricts or prohibits fishing activities within certain zones across a considerable portion of the marine park (Great Barrier Reef Marine Park Authority, 2004). For example, commercial coral collection is not permitted in around 36 per cent of the GBRMP *i.e.* special management areas, the Buffer (Olive Green) Zones, Scientific Research (Orange) Zones, Marine National Park (Green) Zone and Preservation (Pink) Zones (Appendix 2). While commercial harvesting is allowed outside these zones, operators must have a marine parks permit issued under the *Great Barrier Reef Marine Park Act 1975* (Commonwealth) and *Marine Parks Act 2004* (Queensland) to legally fish within the GBRMP. Similarly, non-commercial coral harvesting is prohibited throughout the entire GBRMP unless authorised by a relevant marine parks permit (Great Barrier Reef Marine Park Authority, 2022b, Great Barrier Reef Marine Park Authority, 2020).

The *Queensland coral fishery harvest strategy: 2021–2026* was implemented in September 2021, to sustainably manage Queensland coral resources through the use of decision rules, trigger limits, and reference points (Department of Agriculture and Fisheries, 2021a) . The management framework for this fishery has evolved over time, with significant enhancements made to reporting and management systems. Many of these improvements were implemented to meet conditions in previous WTO accreditations and directly address recommendations from the previous ERA, which identified strategies to better understand, manage, and mitigate risks within the QCF (Morton et al., 2022).

Since the last ERA, the reporting requirements for the QCF have been reviewed, with a stronger focus on species-specific management and reporting. The logbook reporting system now includes over 100 distinct catch categories, with a significant proportion of the coral harvest reported at the species level. This shift away from broader reporting categories, such as family levels, provides fisheries management with improved oversight of long-term catch trends and emerging harvest patterns. From a risk management perspective, this refinement ensures that increases in the harvest of individual species are more accurately defined, reducing the likelihood of trends becoming obscured within aggregated datasets.

The logbook reporting system was updated alongside substantial reforms to the QCF harvesting regulations. These reforms include the introduction of nine individual transferrable quota (ITQ) categories. These consist of seven species-specific ITQs for *Euphyllia glabrescens*, *Fimbriaphyllia ancora*, *Cycloseris cyclolites*, *Acanthophyllia deshayesiana*, *Homophyllia* cf. *australis*, *Micromussa lordhowensis* and *Trachyphyllia geoffroyi*. In addition to the seven species-specific ITQs, the QCF has two over-arching, basket quota categories for Specialty Coral (DS-ITQ) and Other Coral (DO-ITQ). Within the two basket categories, there are 99 coral CITES-listed species or species groups that are managed under prescribed commercial catch (PCC) limits.

Regulatory reforms established harvest limits across a wide range of stony coral species, resulting in significant reductions to harvest levels. Importantly, these changes addressed one of the key risk areas in the previous QCF ERA: the potential for uncontrolled increases in the harvest of high-value or frequently targeted species (Morton et al., 2022). For context, when last assessed, all coral species were managed under a combined harvest limit (Morton et al., 2022, Department of Agriculture and Fisheries, 2022).

Risk assessment outcomes

Over 200 corals were considered for inclusion in the ecological risk assessment including all relevant corals listed under the CITES. Species were then reviewed based on recent harvest contributions, instances of PCC limit overruns, previous risk assessment ratings, findings from recent research (Pratchett, 2024a, Pratchett, 2024b), and the current fishery management arrangements. Following a comprehensive review and consultation with the Marine Aquarium Fish and Coral Fisheries Working Group, 20 species were identified as priorities for assessment. The review determined that the QCF posed a very low risk to the majority of coral species, resulting in their exclusion from further analysis.

Of the 20 species that underwent detailed assessment, 18 were assigned risk ratings of low (n = 13) or moderate (n = 5). In these cases, significant emphasis was placed on the effectiveness of risk mitigation measures implemented since the previous assessment, during the ERA workshop and in determining the final risk ratings. The results of the species prioritisation process and the ERA support the inference that the QCF operates as a lower-risk fishery in the context of the entire area of the GBRMP.

The risk profiles of the two remaining species, *Homophyllia* cf. *australis* (high) and *Micromussa lordhowensis* (high), share several key similarities. Both are corals with low growth rates, restricted distributions and specialised habitat requirements, making them particularly susceptible to fishing pressures. Additionally, concentrated harvesting within a limited number of fishing grids increases the risk of localised depletion. These risks are compounded by significant uncertainties surrounding regional biomass and abundance estimates. From an ERA perspective, such data gaps necessitate a precautionary approach, which contributed to *Homophyllia* cf. *australis* and *Micromussa lordhowensis* receiving higher risk ratings. Encouragingly, the risk ratings for both species have declined from very-high since the last assessment, which can be attributed to improved management arrangements (Morton et al., 2022).

Mitigation strategies implemented in the QCF have demonstrably improved the risk profiles of key target species. However, most of these reforms were introduced in 2022–23 and the relatively short implementation period make it difficult to determine if observed fishing

trends and patterns will persist over time. For species managed under ITQs, significant changes in fishing patterns are less likely, as maximum harvest levels are capped and strictly regulated. Certain high-value and/or high-demand species managed under competitive PCC limits, such as *Fimbriaphyllia divisa*, are prone to a race-to-fish scenario, with quotas often exhausted and exceeded within the first three months of the fishing season. Alternative management measures should be considered to address this issue. While PCC limits for each CITES-listed species or genus are precautionary (Pratchett, 2021), transitioning to ITQs may be suitable in reducing the risk of overruns by equitably distributing quotas among licence holders. Nonetheless, long-term data collection may reveal shifts in fishing effort towards species not currently included in this assessment. One of the benefits of the current ERA is that, if harvest patterns were to change e.g. due to changing market demand, the assessment could be expanded to incorporate additional species.

While the ERA workshop acknowledged the overall benefits of recent reforms, it also highlighted several areas where future assessments could be strengthened through further research and data collection. Knowledge gaps remain for many coral species, particularly regarding biomass, abundance, distribution, recruitment, recovery and taxonomy. Existing studies are often limited in spatial scope and do not provide comprehensive coverage of the entire GBR, contributing to assessment uncertainty. Data on the recruitment, growth, reproduction, and recovery rates of target coral species following collection also provides valuable insight into their capacity to replenish and sustain populations under cumulative pressure. Similarly, comprehensive data on the distribution, abundance, and biomass of these species would support the establishment of scientifically robust and evidence-based harvest limits. Knowledge gaps should be recognised when interpreting risk ratings and reviewing harvest limits, particularly where provisional limits are in place. As additional information becomes available through monitoring, targeted assessments, industry observations, or broader reef programs, it can be used to refine management and improve the accuracy of future assessments.

One of the key risks identified is the potential for concentrated harvesting to lead to localised depletion in areas of high concentrations of effort, though the extent of this impact has not been quantified. This must be considered in a broader spatial and ecological context, as high harvest concentrations in a small number of 30 nautical mile by 30 nautical mile grids may reflect where collection is operationally viable, not simply coral abundance (Lyle Squire Jnr., pers. comm., 2 June 2026). Legal access, safe anchorages and working conditions, depth and zoning constraints, and operators' use of known workable and productive sites all shape where effort concentrates. The natural patchiness of targeted coral species is one contributing factor among several, and productive areas for specialty corals are in any case unevenly distributed across the Marine Park.

Additionally, environmental disturbances affecting the GBR, such as marine heatwaves, pose further risks to coral species targeted by the QCF. These impacts are difficult to measure due to species-specific and regional variations in response to such disturbances. These risks are expected to be addressed through forthcoming updates to the QCF harvest strategy and the development and implementation of a severe event response plan, both scheduled for release in late 2026. These updates aim to establish a more robust framework for managing the fishery and mitigating potential risks to coral species and their habitats.

The recent reforms represent a significant advancement in the long-term risk management of the QCF. These measures reduce the risk of unsustainable harvest growth. While some

risks remain, the current management system provides a strong foundation that can be reviewed and enhanced as needed.

Additional considerations for coral harvesting

Condition 5 of the QCF WTO requires Queensland Department of Primary Industries to publish an updated ERA by 30 June 2026 that considers *'impacts the fishery may have on habitats, the physical environment, ecosystem functions, as well as on coral and coral-dependent ecosystems*.' The condition also notes that the ERA should consider the potential impacts of harvesting at a regional level.

The impacts of climate change and regional harvesting were taken into consideration as part of the LCA and the supporting vulnerability assessment (i.e. the productivity and susceptibility analysis or PSA). Consequently, this section will focus more specifically on the broader effects and potential impacts of coral harvesting. These components are more difficult to incorporate into a fisheries-based risk assessment as the viability of these processes will be influenced by a wide range of factors outside the control of fisheries management. From an ERA perspective, this makes it difficult to quantify the level of impact an individual fishery is having on broader ecological components and by extension the accurate assignment of risk ratings. It is recognised though that the QCF primarily operates within the GBRMP.

The GBR encompasses a diverse range of ecologically significant marine environments, communities and processes. At the whole-of-fishery level, the QCF is unlikely to have a significant, large-scale impact on habitats, physical environments, communities, or ecosystem functions, including coral and coral-dependent ecosystems. The QCF continues to operate as a small-scale, limited entry fishery meaning new licences cannot be issued beyond its current operating potential (n = 59, D fishing symbols) which prevents the fishery expanding. The effort footprint of the fishery is also restricted through limitations applied through the Great Barrier Reef Marine Park Zoning Plan 2003 (Great Barrier Reef Marine Park Authority, 2022b, Great Barrier Reef Marine Park Authority, 2022c, Great Barrier Reef Marine Park Authority, 2020, Great Barrier Reef Marine Park Authority, 2004). In areas where commercial coral collection is legally permissible, operational constraints including dive times, quota holdings, equipment restrictions, and accessibility, place further limits on the where licence holders can operate.

At the regional and local level, the impacts of coral harvesting will be more nuanced and potentially more pronounced, particularly in areas subject to concentrated harvesting. Collection of coral fragments and whole colonies may have the greatest impact on regional habitats and processes as it involves the removal of organisms and/or substrate (including live rock). Harvesting fragments of reef-building stony corals can alter the structure and framework of reefs on a local level which will degrade habitats to some extent. Removing whole colonies, solitary or free-living species, for example, may result in a localised loss of biodiversity and genetic diversity. These impacts can reduce the ability of corals to recover and adapt to environmental disturbances and stressors, which may compromise the resilience of coral populations. However, quantifying the fine-scale risks of coral harvesting is challenging, as impacts are often spatially limited and may not reflect conditions across an entire reef or region. While the fishery remains low-risk overall, these issues underscore the need for targeted monitoring, adaptive management, and regular review through existing

strategies. Information from future monitoring and assessments can be used to refine management over time.

Between 2022–23 and 2024–25, coral harvest was regionally distributed as less than 1% in the far northern region, approximately 40% in the northern region, 5% in the central region, and 54% in the southern region (Appendix 3). Of the total harvest, 77% consisted of stony corals, while the remaining 23% comprised soft corals, anemones, live rock, and coral rubble. The coral fishery is anticipated to have the greatest relative impact on the northern and southern regions, while the far northern and central regions are expected to experience lower levels of impact. While a total allowable commercial catch (TACC) limit of 200t per year is permitted, 61.3 t was harvested in 2022-23, 40.7 t in 2023-24 and 41.7 t in 2024-25.

Of notable importance, the spatial and temporal impacts of regional fishing activities will vary and depend on a range of factors including the resilience and life-history of a species (e.g. growth rate, recruitment potential), the type of collection involved (e.g. fragmented from a colony or collection of whole colonies) and the health, size and composition of the surrounding communities, habitats and ecosystems. For example, most coral species permitted for harvest are collected as fragments with the majority of the colony being left *in-situ*. The premise being that the health of the colony has not been compromised and, with time, will recover. This inference is supported by anecdotal evidence of operators harvesting from healthy, localised reefs or colonies over an extended time (20 plus years). However, it is important to recognise that not all reefs, ecosystems and individual colonies will respond in the same way to the impacts of harvesting.

Market demand for vibrant and rare colour morphs influences harvesting practices, raising concerns about the ecological impacts of selectively removing specific phenotypes. Pratchett (2024b) provides evidence that such practices can alter coral populations, including size structure and colour variations, but the broader implications remain unclear. In particular, the effects of selective harvesting on genetic diversity, source-sink reef dynamics, and the long-term sustainability of coral populations. Further research would be needed to address these knowledge gaps, especially to determine the relationship between colour phenotypes and genetic diversity, as well as the potential consequences for the genetic resilience and adaptability of coral populations.

Outside of harvesting, discarding, contact without capture, loss of fishing gear, travel to and from fishing grounds, disturbance due to presence in the area and boat maintenance and emissions are some of the more common fishing activities considered in risk assessments (Department of Agriculture and Fisheries, 2018, Morton and Jacobsen, 2023). Of these activities, harvesting will be the main driver of risk with ‘contact without capture’ and ‘disturbance due to presence in the area’ viewed as secondary factors of influence. As it is a hand collection fishery with high selectivity, discarding presents as a comparatively low risk in this fishery. Discarding in the QCF refers to the removal of substrate attached to coral fragments. This substrate is often trimmed off prior to sale, and the removed material is classified as ‘rubble’. Discarded fragments are recorded under the ‘Other Coral’ quota management unit as ‘rubble’ to ensure this component of the harvest is reported. Discarded substrate accounts for approximately 25 per cent of the corals weight, a figure pre-determined and based on scientific advice (Pratchett and Messmer V., 2017).

The QCF operates within sensitive marine habitats, including coral reefs, inter-reef areas, and associated ecosystems that support diverse marine life. Harvesting corals can alter the

physical structure of coral reefs, destabilise sediments, and increase turbidity, which may affect water quality and light penetration. The immediate fished area will experience a degree of on-site disturbance and non-target species will likely be impacted by QCF activities. This is particularly relevant to species that depend on coral and anemones for survival, i.e. corallivores and anemonefishes. However, these impacts, as a whole, are likely to be localised, short in duration and temporary in nature *i.e.* disturbed animals are likely to return to the region once the collection period has been completed.

Overall, there is a very low probability of the QCF having a significant, large-scale or wide-spread impact on habitats, the physical environment, ecosystem functions and coral / coral-dependent ecosystems in the GBRMP. The potential for this fishery to impact regional and local ecosystems and habitats is higher. The extent of these regional impacts (none, small, medium or large) will vary, as will the state of the change (reversable or permanent) and temporal scale (short-, medium- or long-term recovery). While noting this potential, the scale and extent of any potential impact will be limited by the size of the QCF and management arrangements already in place for this fishery. This inference is supported by the outputs of this ERA which shows the fishery poses a comparatively low risk to most of the species assessed.

When considering habitats, the physical environment, ecosystem functions and coral / coral-dependent ecosystems, it is more likely that the QCF is a contributor of risk rather than the main driver of risk. These risks and impacts may be exacerbated by other phenomena including severe weather events. These cumulative impacts will be considered as part of key processes including the updated QCF harvest strategy and Severe Event Response Plan being developed as part of the Queensland coral fishery Wildlife Trade Approval (Commonwealth of Australia, 2025).

References

ARAFAT, D., SOEDHARMA, D., SUBHAN, B., MADDUPPA, H., ERVINA, A., SANTOSO, P., MARGONO, W., HIDAYAT, S. A. & ANGGRAENY, B. 2022. Development and growth of massive coral Lobophyllia hemprichii transplanted on Pramuka Island, Thousand Islands, Jakarta. *IOP Conference Series: Earth and Environmental Science*.

ARRIGONI, R., BENZONI, F., HUANG, D., FUKAMI, H., CHEN, C. A., BERUMEN, M. L., HOOGENBOOM, M., THOMSON, D. P., HOEKSEM, B. W., BUDD, A. F., ZAYASU, Y., TERRANEO, T. I., KITANO, Y. F. & BAIRD, A. H. 2016. When forms meet genes: revision of the scleractinian genera *Micromussa* and *Homophyllia* (Lobophylliidae) with a description of two new species and one new genus. *Contributions to Zoology,* 85**,** 387-422.

AUSTRALIAN FISHERIES MANAGEMENT AUTHORITY 2020. Management of Coral Harvest (Acroporidae). Australian Government.

BAIRD, A. H., GUEST, J. R. & WILLIS, B. L. 2009. Systematic and Biogeographical Patterns in the Reproductive Biology of Scleractinian Corals. *Annual Review of Ecology, Evolution, and Systematics,* 40**,** 551–71.

BAYLEY, D., PORTER, S. N., HUANG, D., BLUEMEL, J., CRABBE, J. & NG, L. 2024. *Plerogyra sinuosa. The IUCN Red List of Threatened Species 2024.* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133258/165799761 [Accessed 9 March 2026].

BLUEMEL, J., WILSON, B., SANTODOMINGO, N., NUÑEZ LENDO, C. I., CROQUER, A., SAMIMI NAMIN, K. & SHLESINGER, T. 2024. *Heliofungia actiniformis. The IUCN Red List of Threatened Species 2024.* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133269/165805530 [Accessed 2026 9 March].

BRUNO, J., SIDDON, C., WITMAN, J., COLIN, P. & TOSCANO, M. 2001. El Niño related coral bleaching in Palau, Western Caroline Islands. *Coral Reefs,* 20**,** 127–136.

BURN, D., HOEY, A. S., MATTHEWS, S., HARRISON, H. B. & PRATCHETT, M. S. 2023. Differential bleaching susceptibility among coral taxa and colony sizes, relative to bleaching severity across Australia's Great Barrier Reef and Coral Sea Marine Parks. *Marine Pollution Bulletin*.

CARPENTER, K. E., ABRAR, M., AEBY, G., ARONSON, R. B., BANKS, S., BRUCKNER, A., CHIRIBOGA, A., CORTES, J., DELBEEK, J. C., DE VANTIER, L., EDGAR, G. J., EDWARDS, A. J., FENNER, D., GUZMAN, H. M., HOEKSEMA, B. W., HODGSON, G., JOHAN, O., LICUANAN, W. Y., LIVINGSTONE, S. R., LOVELL, E. R., MOORE, J. A., OBURA, D. O., OCHAVILLO, D., POLIDORO, B. A., PRECHT, W. F., QUIBILAN, M. C., REBOTON, C., RICHARDS, Z. T., ROGERS, A. D., SANCIANGCO, J., SHEPPARD, A., SHEPPARD, C., SMITH, J., STUART, S., TURAK, E., VERON, J. E. N., WALLACE, C., WEIL, E. & WOOD, E. 2008. One-Third of Reef-Building Corals Face Elevated Extinction Risk from Climate Change and Local Impacts. *Science,* 321**,** 560-563.

CHALIAS, V. 2019. *You Won't Believe Where Strawberry Shortcake Acros Live* [Online]. reef builders. Available: https://reefbuilders.com/2019/06/24/you-wont-believe-where-strawberry-shortcake-acros-live/ [Accessed 30 May 2025].

COMMONWEALTH OF AUSTRALIA 2025. Declaration of an Approved Wildlife Trade Operation – Queensland Coral Fishery, December 2025. *In:* DEPARTMENT OF CLIMATE CHANGE, E., THE ENVIRONMENT AND WATER (ed.). Australian Government.

CRABBE, J., WAHEED, Z., NUÑEZ LENDO, C. I., COUCE, E. & ROCHE, R. 2024. *Goniopora stokesi. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133668/166003906 [Accessed 9 March 2026].

DARLING, E. S., ALVAREZ FILIP, L., OLIVER, T. A., MC CLANAHAN, T. R. & CÔTÉ, I. M. 2012. Evaluating life-history strategies of reef corals from species traits. *Ecology Letters,* 15**,** 1378-1386.

DARUS, R. F., ZAMANI, N. P. & SUHARSONO, S., D. D. 2016. Acanthophyllia deshayesiana (Michelin, 1850) Coral Species Is Not Synonym With Cynarina lacrymalis (Milne Edwards & Haime, 1848). *ILMU KELAUTAN: Indonesian Journal of Marine Sciences,* 21**,** 107-116.

DELLISANTI, W., HUANG, D., PORTER, S. N., CRABBE, J., BLUEMEL, J. & NG, L. 2024. *Blastomussa wellsi. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133253/165797170 [Accessed 9 March 2026].

DEPARTMENT OF AGRICULTURE AND FISHERIES. 2018. *Ecological Risk Assessment Guidelines* [Online]. Brisbane, Queensland. Available: https://www.daf.qld.gov.au/business-priorities/fisheries/monitor/stock/ecological-risk-assessments [Accessed 9 January 2025].

DEPARTMENT OF AGRICULTURE AND FISHERIES 2021a. Coral Fishery Harvest Strategy: 2021-2026. Brisbane, Queensland: Queensland Government.

DEPARTMENT OF AGRICULTURE AND FISHERIES. 2021b. *Marine Aquarium Fish and Coral Fisheries Working Group* [Online]. Available: https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups [Accessed 7 May 2022].

DEPARTMENT OF AGRICULTURE AND FISHERIES 2022. Scoping Study - Queensland Coral Fishery. Brisbane, Australia: Department of Agriculture and Fisheries, Queensland Government.

DEPARTMENT OF AGRICULTURE AND FISHERIES. 2024. *Ecological Risk Assessment* [Online]. Available: https://www.daf.qld.gov.au/business-priorities/fisheries/monitor/stock/ecological-risk-assessments [Accessed 9 January 2025].

DÍAZ, M. & MADIN, J. 2010. Macroecological relationships between coral species' traits and disease potential. *Coral Reefs,* 30**,** 73–84.

DOROPOULOS, C., ALVAREZ-NORIEGA, M., FABRICIUS, K., FERRARI, K., FERRARI, R., MUMBY, P. J., NOONAN, S. H. C., ORR, M. & SALEE, K. 2025. Impact of environmental gradients on juvenile coral demography across the Great Barrier Reef and Torres Strait. *Coral Reefs,* 44**,** 1875–1891.

FAN, T. Y., LIN, K. H., KUO, F. W., SOONG, K., LIU, L. L. & FANG, L. S. 2006. Diel patterns of larval release by five brooding scleractinian corals. *Marine Ecology Progress Series,* 321**,** 133-142.

FLETCHER, N., BATJAKAS, I. & PIERCE, G. 2013. Diet of the Atlantic bonito Sarda sarda (Bloch, 1793) in the Northeast Aegean Sea. *Journal of Applied Ichthyology,* 29.

FLETCHER, W. J. 2015. Review and refinement of an existing qualitative risk assessment method for application within an ecosystem-based management framework. *ICES Journal of Marine Science,* 72**,** 1043-1056.

FLETCHER, W. J., CHESSON, J., SAINSBURY, K. J., HUNDLOE, T. J. & FISHER, M. 2005. A flexible and practical framework for reporting on ecologically sustainable development for wild capture fisheries. *Fisheries Research,* 71**,** 175-183.

FUJII, T., KITANO, Y. & TACHIKAWA, H. 2020. New Distributional Records of Three Species of Euphylliidae (Cnidaria, Anthozoa, Hexacorallia, Scleractinia) from the Ryukyu Islands, Japan. *Species Diversity,* 25**,** 275-282.

GILMOUR, J. P., SMITH, L. D., HEYWARD, A. J., BAIRD, A. H. & PRATCHETT, M. S. 2013. Recovery of an isolated coral reef system following severe disturbance. *Science,* 340**,** 69-71.

GREAT BARRIER REEF MARINE PARK AUTHORITY. 2004. *Great Barrier Reef Marine Park ZONING PLAN 2003* [Online]. Queensland: Great Barrier Reef Marine Park Authority. Available: https://elibrary.gbrmpa.gov.au/entities/publication/c7320a88-702e-4a10-a462-b3ad7acacc19 [Accessed 15 June 2026].
GREAT BARRIER REEF MARINE PARK AUTHORITY. 2018. *Overview of the RAP* [Online]. Available: http://www.gbrmpa.gov.au/our-work/our-programs-and-projects/rap [Accessed 30 May 2019].
GREAT BARRIER REEF MARINE PARK AUTHORITY. 2020. *Zoning* [Online]. Available: http://www.gbrmpa.gov.au/access-and-use/zoning [Accessed 4 September 2020].
GREAT BARRIER REEF MARINE PARK AUTHORITY. 2022a. *Collecting* [Online]. Available: https://www.gbrmpa.gov.au/access-and-use/responsible-reef-practices/collecting#:~:text=You%20must%20not%20damage%2C%20collect,have%20a%20Marine%20Parks%20permit [Accessed 30 March 2022].
GREAT BARRIER REEF MARINE PARK AUTHORITY. 2022b. *Interpreting Zones* [Online]. Available: https://www.gbrmpa.gov.au/access-and-use/zoning/interpreting-zones [Accessed 9 May 2022].
GREAT BARRIER REEF MARINE PARK AUTHORITY. 2022c. *Special Management Areas* [Online]. Available: http://www.gbrmpa.gov.au/access-and-use/zoning/special-management-areas [Accessed 10 March 2023].
GREAT BARRIER REEF MARINE PARK AUTHORITY 2024. Great Barrier Reef Outlook Report 2024.
HOOGENBOOM, M. O., FRANK, G. E., CHASE, T. J., JURRIAANS, S., ÁLVAREZ-NORIEGA, M., PETERSON, K., CRITCHELL, K., BERRY, K. L. E., NICOLET, K. J., RAMSBY, B. & PALEY, A. S. 2017. Environmental Drivers of Variation in Bleaching Severity of Acropora Species during an Extreme Thermal Anomaly. *Frontiers in Marine Science,* 4**,** 16.
HUANG, D., CRABBE, J., PORTER, S. N., NG, L. & BLUEMEL, J. 2024a. *Dipsastraea rosaria. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/132899/165620922 [Accessed 9 March 2026].
HUANG, D., PORTER, S. N., COWBURN, B., CAVADA-BLANCO, F., AEBY, G., ALLIJI, K., COUCE, E. & OBURA, D. O. 2024b. *Micromussa lordhowensis. The IUCN Red List of Threatened Species 2024* [Online]. Available: https://www.iucnredlist.org/species/133366/165852855 [Accessed 2025 23 March].
HUANG, D., PORTER, S. N., CRABBE, J., BLUEMEL, J. & NG, L. 2024c. *Trachyphyllia geoffroyi. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133260/165801011 [Accessed 24 April 2025].
HUANG, D., PORTER, S. N., CRABBE, J., NG, L. & BLUEMEL, J. 2024d. *Favites pentagona. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133209/165772891 [Accessed 9 March 2026].
JOHAN, O., GINANJAR, R., BUDIYANTO, A., ARDI, I., PRIYADI, A. & KUNZMANN, A. 2023. The success of ornamental coral propagation in Banyuwangi East Java, Indonesia: observation of different depths and species. *Frontiers in Marine Science,* 10.
JOHNSON, J., LUZON, K., DELLISANTI, W., COWBURN, B. & LEWIS, C. 2023. *Duncanopsammia axifuga. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133114/165728077 [Accessed 9 March 2026].
JOHNSON, J., LUZON, K., DELLISANTI, W., COWBURN, B. & LEWIS, C. 2024. *Fimbriaphyllia divisa. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133225/165781677 [Accessed 18 June 2025].

KITANO, Y., OBUCHI, M., UYENO, D. & MIYAZAKI, K. 2013. Phylogenetic and taxonomic status of the coral Goniopora stokesi and related species (Scleractinia: Poritidae) in Japan based on molecular and morphological data. *Zoological Studies,* 52**,** 1-16.

KUO, C.-Y. 2017. *Adaptive strategies in reef-building corals.* Doctor of Philosophy, James Cook University.

LUZON, K., JOHNSON, J., COWBURN, B., DELLISANTI, W., LEWIS, C. & DE LA ROSA, G. 2024. *Fimbriaphyllia paraancora. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133289/165814415 [Accessed 2026 9 March].

LUZON, K., LIN, M., LAGMAN, C. C. A., LICUANAN, W. R. Y. & CHEN, C. A. 2017. Resurrecting a subgenus to genus: Molecular phylogeny of Euphyllia and Fimbriaphyllia (order Scleractinia; family Euphyllidae; clade V). *Peer J,* 5**,** 24.

MEZIERE, A., PRATA, K., LECHENE, M., FERRARI, R., POPOVIC, I. & RIGINOS, C. 2025. Connectivity differs by orders of magnitude among co-distributed corals, affecting spatial scales of eco-evolutionary processes. *Science Advances,* 11.

MORTON, J. & JACOBSEN, I. 2023. Marine Aquarium Fish Fishery Level 1 Ecological Risk Assessment. Brisbane, Australia: Department of Agriculture and Fisheries, Queensland Government.

MORTON, J., JACOBSEN, I. & DEDINI, E. 2022. Queensland Coral Fishery Ecological Risk Assessment Update: Phase 1. Brisbane, Queensland: Queensland Government.

PACEY, K. 2024. *The biology, ecology, and management of corals targeted for commercial harvest by Australian coral fisheries.* Doctor of Philosophy, James Cook University.

PACEY, K. I., CABALLES, C. F. & PRATCHETT, M. S. 2022. Size-weight relationships for estimating harvestable biomass of *Acropora* corals on Australia's Great Barrier Reef. *Marine Environmental Research,* 177**,** 8.

PACEY, K. I., CABALLES, C. F. & PRATCHETT, M. S. 2023. Using size-weight relationships to estimate biomass of heavily targeted aquarium corals by Australia's coral harvest fisheries. *Scientific Reports,* 13**,** 11.

PORTER, S. N., BAYLEY, D., CRABBE, J., COWBURN, B., CAVADA-BLANCO, F., AEBY, G., ALLIJI, K., COUCE, E. & OBURA, D. O. 2022. *Lobophyllia hemprichii. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/133419/165880675 [Accessed 30 June 2025].

PORTER, S. N., BLUEMEL, J., CRABBE, J., NG, L. & HUANG, D. 2024. *Catalaphyllia jardinei. The IUCN Red List of Threatened Species 2024* [Online]. IUCN Red List. Available: https://www.iucnredlist.org/species/132890/165616621 [Accessed 3 March 2026].

PRATCHETT, M. 2021. *Expert advice for the assessment of Australian coral fisheries – Queensland Coral Fishery 2006-2007 to 2019-2020. In:* OFFICE, W. T. A. S. O. T. W. T. (ed.). Canerra, Australia: Department of Agriculture, Water and the Environment.

PRATCHETT, M., CABALLES, C., MESSMER, V., WILSON, S., ROELOFS, A., PENNY, S., KELLEY, R. & NEWMAN, S. 2020a. Vulnerability of commercially harvested corals to fisheries exploitation versus environmental pressures. Townsville: James Cook University.

PRATCHETT, M. & KELLEY, R. 2020. Guide to some harvested aquarium corals. 1.3 ed. Townsville: James Cook University.

PRATCHETT, M. P. 2024a. Characterising species composition of Acropora corals harvested by the Queensland coral fishery (QCF). Queensland Government.

PRATCHETT, M. S. 2024b. Localised status assessment for specialty coral harvest species on the Great Barrier Reef. Department of Climate Change, Energy, the Environment and Water.

PRATCHETT, M. S. 2024c. Population size and growth estimates for Trachyphyllia geoffroyi and other specialty coral harvest species to underpin improved fishery management. James Cook University.
PRATCHETT, M. S., ANDERSON, K. D., HOOGENBOOM, M. O., WIDMAN, E., BAIRD, A. H., PANDOLFI, J. M., EDMUNDS, P. J. & LOUGH, J. M. 2015. Spatial, temporal and taxonomic variation in coral growth: implications for the structure and function of coral reef ecosystems. *Oceanography and Marine Biology: An Annual Review,* 53**,** 215-295.
PRATCHETT, M. S., CABALLES, C. F., NEWMAN, S. J., WILSON, S. K., MESSMER V. & PRATCHETT, D. J. 2020b. Bleaching susceptibility of aquarium corals collected across northern Australia. *Coral Reefs***,** 663-673.
PRATCHETT, M. S. & MESSMER V. 2017. Determining amount of substrate that is trimmed from stony corals in the Specialty Coral quota category. Townsville: James Cook University.
REEFLEX. 2023. *Acanthophyllia deshayesiana Flat Cup Coral* [Online]. Available: https://www.reeflex.net/tiere/15501_Acanthophyllia_deshayesiana.htm [Accessed 26 March 2026].
REICHERT, J., SCHELLENBER, J., SCHUBERT, P. & WILKE, T. 2018. Responses of reef building corals to microplastic exposure. *Environmental Pollution,* 237**,** 955-960.
ROCHE, R., HUANG, D., PORTER, S. N., COWBURN, B., CAVADA-BLANCO, F., AEBY, G., ALLIJI, K., COUCE, E. & OBURA, D. O. 2024. *Homophyllia australis. The IUCN Red List of Threatened Species 2024* [Online]. Available: https://www.iucnredlist.org/species/133566/165952413 [Accessed 24 February 2024].
ROELOFS, A. 2008. Ecological Risk Assessment of the Queensland Coral Fishery. Brisbane, Australia: Department of Primary Industries and Fisheries.
ROELOFS, A. 2013. A review of the vulnerability assessment of coral taxa collected in the Queensland Coral Fishery. Brisbane, Australia: Department of Agriculture and Fisheries.
ROELOFS, A. 2018. Ecological Risk Assessment of the Queensland Coral Fishery 2013. Brisbane, Australia: Queensland Department of Agriculture and Fisheries.
SAYCO, S. L. G., PRASETIA, R., TODD, P. A., LOYA, Y., VALENCIA, B., CALLE, L. G. & CABAITAN, P. C. 2024. Reproductive biology and early life history of the solitary coral Heliofungia actiniformis from Singapore and the Philippines. *Marine Biology,* 171.
SHLESINGER, T., HUANG, D., PORTER, S. N., COWBURN, B., AEBY, G., ALLIJI, K. & OBURA, D. O. 2022. *Acanthastrea pachysepta. The IUCN Red List of Threatened Species 2024.* [Online]. IUCN Red List. Available: https://apistaging.iucnredlist.org/en/species/133152/165743786 [Accessed 3 July 2025].
SHLESINGER, T. & VAN WOESIK, R. 2021. Different population trajectories of two reef-building corals with similar life-history traits. *Journal of Animal Ecology,* 90**,** 1379–1389.
THOMAS, L., UNDERWOOD, J. N., ADAM, A. A. S., RICHARDS, Z. T., DUGAL, L., MILLER, K. J. & GILMOUR, J. P. 2019. Contrasting patterns of genetic connectivity in brooding and spawning corals across a remote atoll system in northwest Australia. *Coral Reefs,* 39**,** 55–60.
TOH, T. C. & NG, C. S. L. N. 2016. Tentacular autotomy and polyp regeneration in the scleractinian coral Euphyllia glabrescens. *Coral Reefs,* 35**,** 819.
VERON J.E.N., STAFFORD-SMITH M.G., TURAK E. & DEVANTIER L.M. 2016. *Acanthophyllia deshayesiana* [Online]. Corals of the World. Available:

https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/acanthophyllia-deshayesiana/ [Accessed 9 April 2026].
VERON J.E.N., S.-S. M. G., TURAK E. AND DEVANTIER L.M.,. 2016. *Catalaphyllia jardinei* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/catalaphyllia-jardinei/ [Accessed 8 April 2026].
VERON, J. E. N. 1986. *Corals of Australia and the Indo-Pacific*, University of Hawaii Press.
VERON, J. E. N. 1993. *Corals of Australia and the Indo-Pacific,* Honolulu, University of Hawaii Press.
VERON, J. E. N. 2000. *Corals of the World,* Townsville, Australian Institute of Marine Science and CRR Ald Pty Ltd.
VERON, J. E. N. 2002. New species described in corals of the world. Australian Institute of Marine Science.
VERON, J. E. N., STAFFORD-SMITH M. G., TURAK , E. & L.M., D. 2016a. *Favites pentagona* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/favites-pentagona/ [Accessed 13 April 2026].
VERON, J. E. N., STAFFORD-SMITH M. G., TURAK , E. & L.M., D. 2016b. *Favites rosaria* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/favia-rosaria/ [Accessed 10 April 2026].
VERON, J. E. N., STAFFORD-SMITH M. G., TURAK E. & M, D. L. 2016c. *Duncanopsammia axifuga* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/duncanopsammia-axifuga/ [Accessed 10 April 2026].
VERON, J. E. N., STAFFORD-SMITH M. G., TURAK E. & M, D. L. 2016d. *Trachyphyllia geoffroyi* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/trachyphyllia-geoffroyi/ [Accessed 29 April 2025].
VERON, J. E. N., STAFFORD-SMITH M.G., TURAK, E. & DEVANTIER, L. M. 2016e. *Euphyllia ancora* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/euphyllia-ancora/ [Accessed 19 June 2025].
VERON, J. E. N., STAFFORD-SMITH M.G., TURAK E. & L.M., D. 2016f. *Acanthastrea bowerbanki* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/acanthastrea-bowerbanki/ [Accessed 20 April 2026].
VERON, J. E. N., STAFFORD-SMITH M.G., TURAK E. & L.M., D. 2016g. *Acanthastrea lordhowensis* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/acanthastrea-lordhowensis/ [Accessed 23 March 2025].
VERON, J. E. N., STAFFORD-SMITH M.G., TURAK E. & L.M., D. 2016h. *Euphyllia glabrescens* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/euphyllia-glabrescens/ [Accessed 5 February 2025].
VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & DEVANTIER, L. M. 2016i. *Acropora microclados* [Online]. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/acropora-microclados/ [Accessed 16 May 2025].

VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & DEVANTIER, L. M. 2016j. *Blastomussa wellsi* [Online]. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/blastomussa-wellsi/ [Accessed 18 February 2026].
VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & DEVANTIER, L. M. 2016k. *Euphyllia divisa* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/euphyllia-divisa/ [Accessed 25 June 2025].
VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & DEVANTIER, L. M. 2016l. *Lobophyllia hemprichii* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/lobophyllia-hemprichii/ [Accessed 30 June 2025].
VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & L.M., D. 2016m. *Lobophyllia pachysepta* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/lobophyllia-pachysepta/ [Accessed 3 July 2025].
VERON, J. E. N., STAFFORD-SMITH, M. G., TURAK, E. & L.M., D. 2016n. *Parascolymia australis* [Online]. Corals of the World. Available: https://www.coralsoftheworld.org/species_factsheets/species_factsheet_summary/parascolymia-australis/ [Accessed 24 February 2025].
WALLACE, C. C., DONE, B. J. & MUIR, P. R. 2012. Revision and catalogue of worldwide staghorn corals *Acropora* and *Isopora* (Scleractinia: Acroporidae) in the Museum of Tropical Queensland. *Nature,* 57**,** 1–255.
WILSON, J. & HARRISON, P. 2005. Post-settlement mortality and growth of newly settled reef corals in a subtropical environment. *Coral Reefs,* 24**,** 418–421.
WILSON, J. R. & HARRISON, P. L. 2003. Spawning patterns of scleractinian corals at the Solitary Islands — a high latitude coral community in eastern Australia. *Marine Ecology Progres Series,* 260**,** 115-123.
WOLSTENHOLME, J. 2004. Scleractinian Reef Corals: Identification Notes. James Cook University.
YASUDA, N., KITANO, Y. F., TANINAKA, H., NAGAI, S., MEZAKI, T. & YAMASHITA, H. 2021. Genetic Structure of the Goniopora lobata and G. djiboutiensis Species Complex Is Better Explained by Oceanography Than by Morphological Characteristics. *Frontiers in Marine Science,* 8.

Appendices

Appendix 1 – Prescribed area of the D coral fishery symbol

Appendix 2 – Overview of the Great Barrier Reef Marine Park (GBRMP) zones and the Queensland coral fishery

Appendix 3 – Total coral harvest weight (kg) from 2022–23 to 2024–25 by fishing grid in the QCF

Appendix 4 – Fishing effort (days fished) from 2022–23 to 2024–25 by fishing grid in the QCF

Appendix 5 – Queensland coral fishery quota data from the 2022–23 to 2024–25 fishing seasons

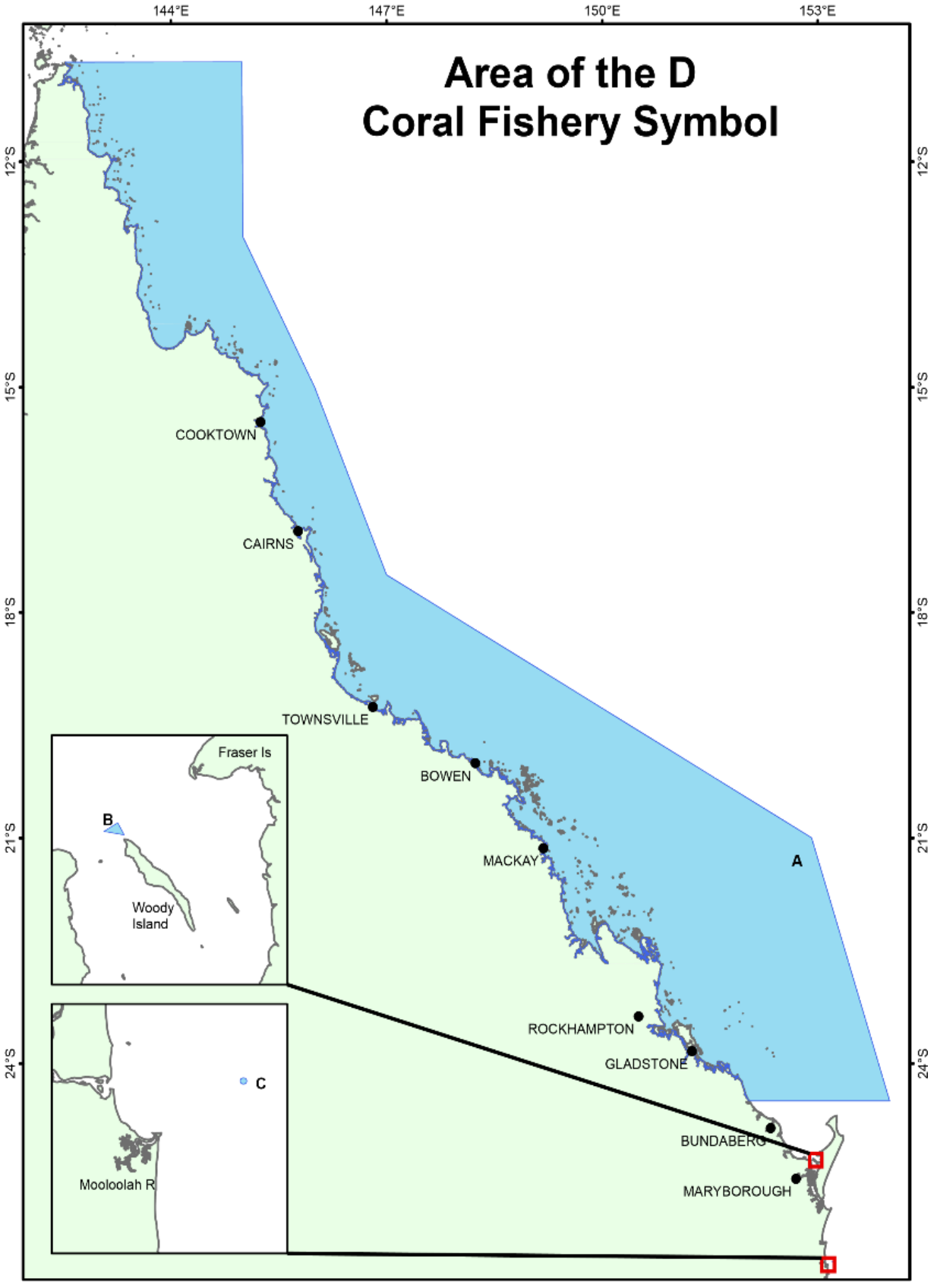
Appendix 6 – Queensland coral fishery vulnerability assessment results

Appendix 7 – Assessment justifications

Appendix 8 – Workshop attendees, 23 April 2026, Cairns

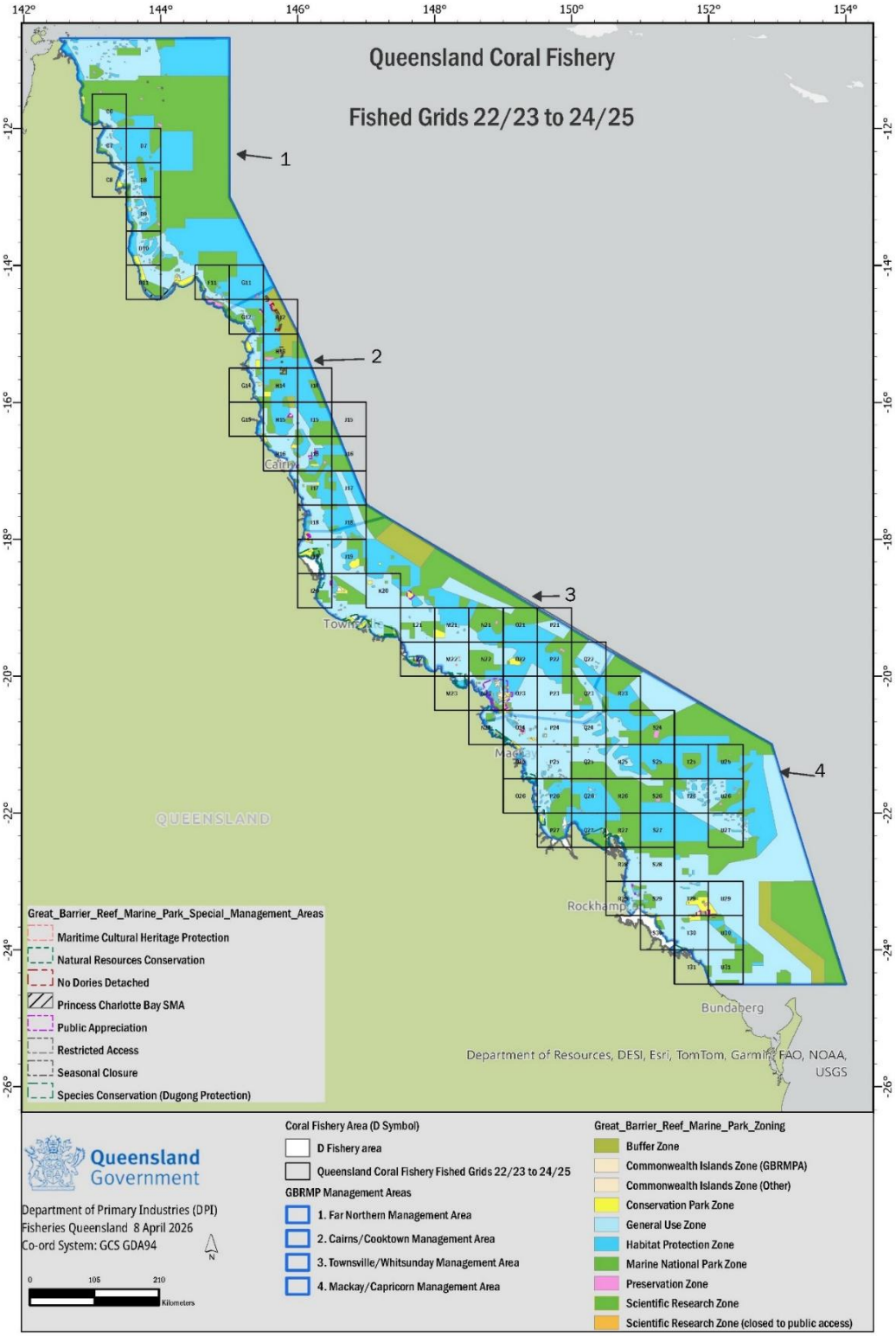
Appendix 1 – Prescribed area of the D coral fishery symbol

The prescribed fishing area for the Queensland coral fishery. Refer to the Fisheries (Commercial Fisheries) Regulation 2019 for more information.



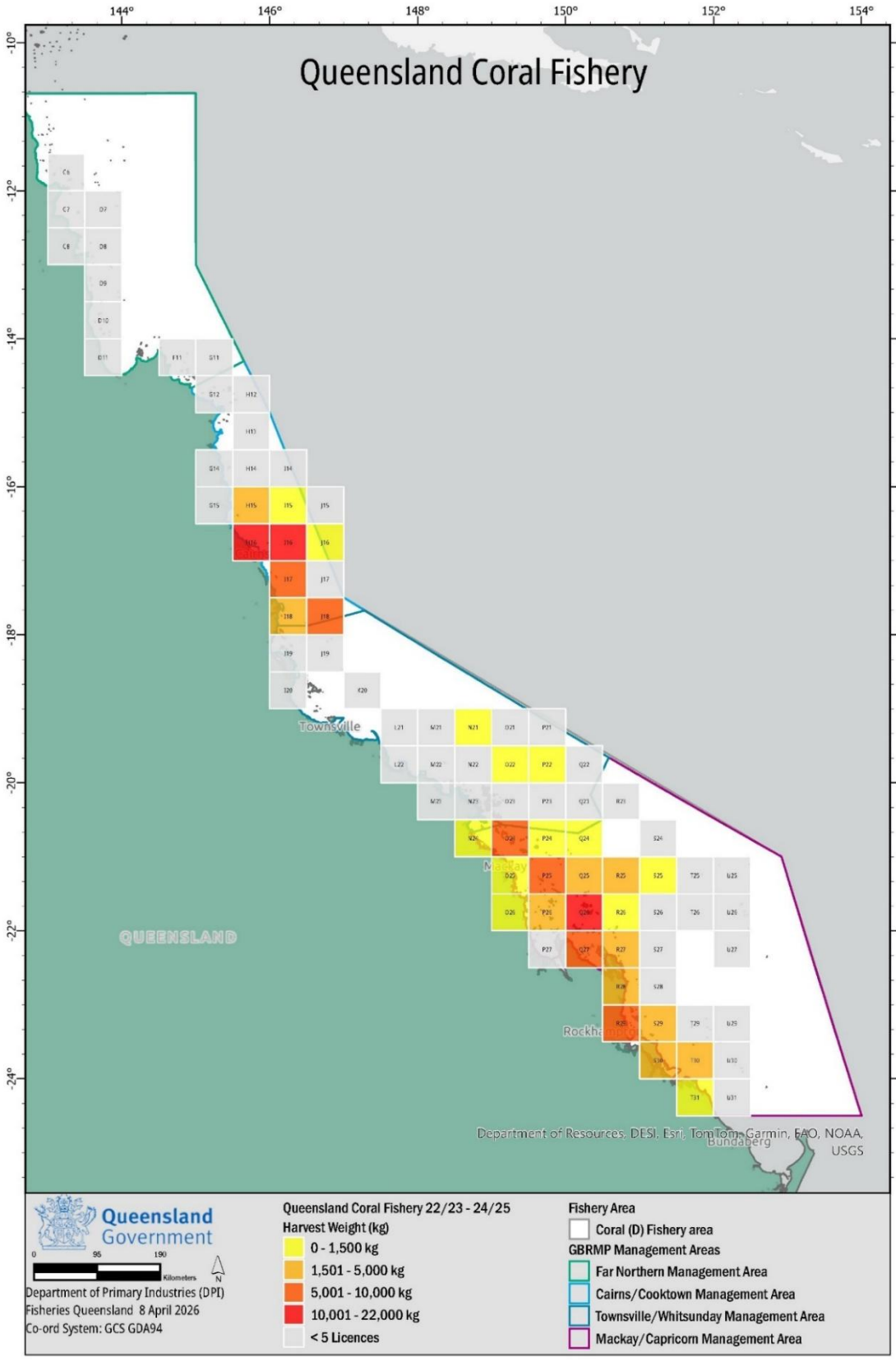
Appendix 2 – Overview of the Great Barrier Reef Marine Park (GBRMP) zones and the Queensland coral fishery

This map illustrates the GBRMP zoning including special management areas, and the D fishery area. It also shows the grids where fishing occurred in the QCF during the 2022–23 to 2024–25 fishing seasons. This map provides a comprehensive illustration of the spatial management and utilisation of the marine park by the QCF within the GBRMP. Coral fishers are only permitted to collect coral in the General Use Zone (subject to permits and quotas), which represents approximately 33% of the marine park. Collection in the Habitat Protection Zone and Conservation Park Zone is highly restricted. All other zones are no-take.



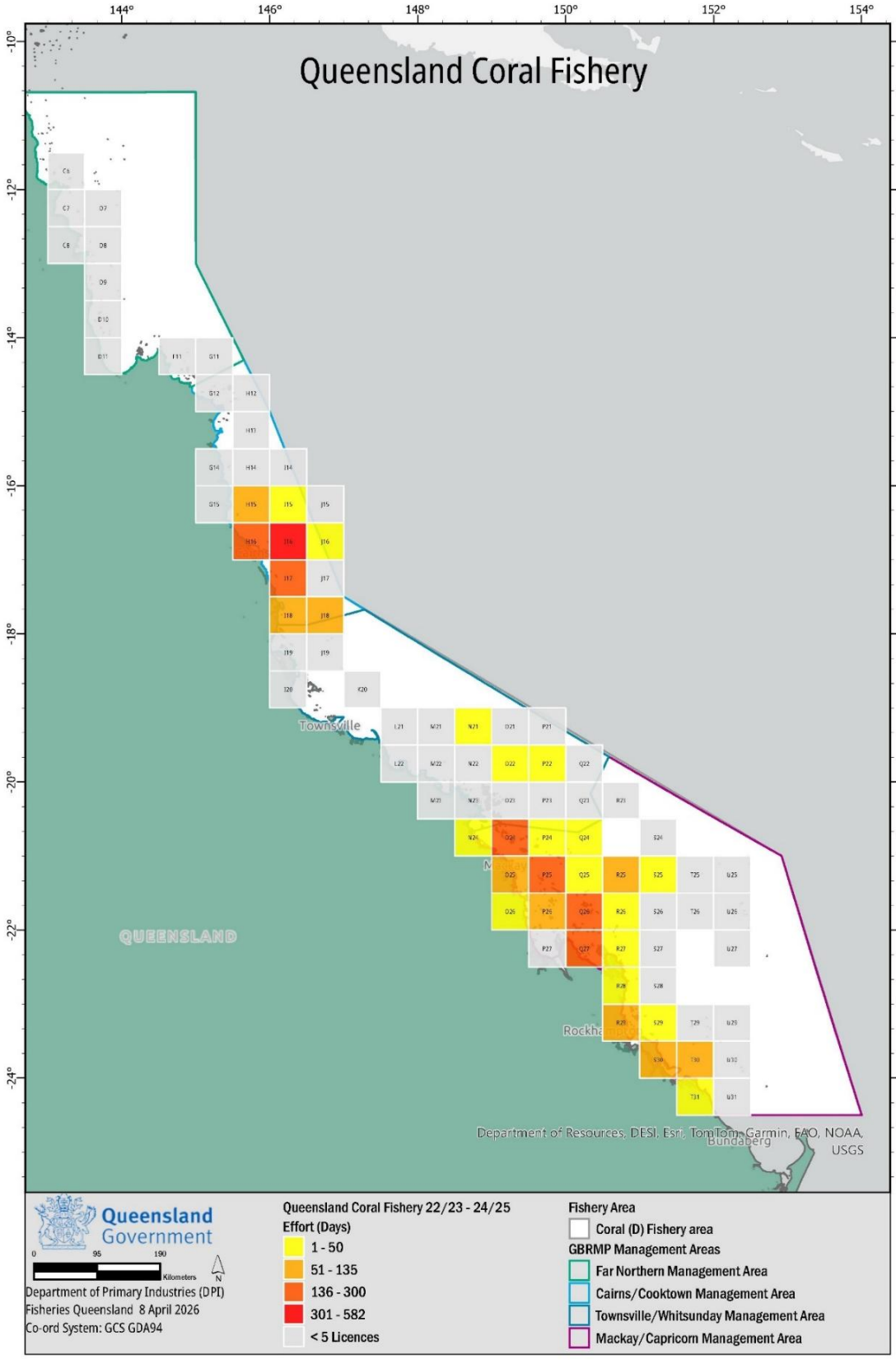
Appendix 3 – Total coral harvest weight (kilograms) from 2022–23 to 2024–25 by fishing grid in the QCF

This heat map representing the distribution of total coral harvest (in kilograms) across fishing grids within the QCF (D symbol area) over the 2022–23 to 2024–25 period. It also highlights the main GBRMP management areas, providing insights into spatial harvesting.



Appendix 4 – Fishing effort (days fished) from 2022–23 to 2024–25 by fishing grid in the QCF

Heat map displaying the distribution of fishing effort, measured in days fished, across fishing grids within the QCF during the 2022–23 to 2024–25 period. The map also highlights the main GBRMP management areas, providing insights into spatial effort distribution.



Appendix 5 – Queensland coral fishery quota data by fishing seasons (2022–23 to 2024–25)

Table A1. Quota usage in kilograms and percentages for coral harvested in the QCF from 2022–23 to 2024–25.

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DO01 - *Acropora* spp.	19,500	15,422	79.1	7,430	38.1	7,652	39.2
DO02 - *Alveopora* spp.	1,767	905	51.2	619	35.0	767	43.4
DO03 - *Anacropora* spp.	600	-	0.0	6	1.0	3	0.5
DO04 - *Astreopora* spp.	600	18	3.0	10	1.7	62	10.3
DO05 - *Isopora* spp.	600	45	7.5	-	0.0	2	0.3
DO06 - *Montipora* spp.	1,099	653	59.4	413	37.6	409	37.2
DO07 - *Pocillopora damicornis*	600	13	2.2	53	8.8	25	4.2
DO08 - *Pocillopora grandis*	600	-	0.0	-	0.0	-	0.0
DO09 - *Pocillopora meandrina*	600	1	0.2	-	0.0	1	0.2
DO10 - *Pocillopora verrucosa*	600	46	7.7	6	1.0	2	0.3
DO11 - *Pocillopora woodjonesi*	600	-	0.0	-	0.0	-	0.0
DO12 - *Pocillopora* spp. excluding those already listed	600	151	25.2	4	0.7	15	2.5
DO13 - *Seriatopora caliendrum*	600	2	0.3	-	0.0	-	0.0
DO14 - *Seriatopora hystrix*	600	23	3.8	14	2.3	12	2.0
DO15 - *Seriatopora* spp. excluding those already listed	600	-	0.0	3	0.5	-	0.0
DO16 - *Stylophora* pistillata	600	7	1.2	4	0.7	18	3.0
DO17 - *Stylophora* spp. excluding those already listed	600	3	0.5	8	1.3	2	0.3
DO18 - Soft Coral - Alcyoniidae - All Genus	140,000	1,503	1.1	1,011	0.7	1,311	0.9
DO19 - Soft Coral - Clavulariidae - All Genus	140,000	167	0.1	110	0.1	163	0.1
DO20 - Soft Coral - Corallimorphidae - All Genus	140,000	947	0.7	918	0.7	812	0.6
DO21 - Soft Coral - Gorgonians - All Families	140,000	38	0.0	27	0.0	35	0.0

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DO22 - Soft Coral - Nephtheidae - All Genus	140,000	201	0.1	178	0.1	283	0.2
DO23 - Soft Coral - Paralcyoniidae - All Genus	140,000	26	0.0	4	0.0	-	0.0
DO24 - Soft Coral - Pennatulidae - All Genus	140,000	-	0.0	4	0.0	-	0.0
DO25 - Soft Coral - Xeniidae - All Genus	140,000	201	0.1	176	0.1	421	0.3
DO26 - Soft Coral - Zoanthidae - All Genus	140,000	138	0.1	85	0.1	109	0.1
DO27 - Soft Corals - All families excluding listed	140,000	617	0.4	334	0.2	275	0.2
DO28 - Live rock	140,000	8,395	6.0	5,144	3.7	7,057	5.0
DO29 - Coral rubble	140,000	121	0.1	46	0.0	199	0.1
Total DO-ITQ	140,012	37,454	26.8	22,611	16.1	24,973	17.8
DS01 - *Agaricia* spp.	600	-	0.0	-	0.0	-	0.0
DS02 - *Coeloseris* spp.	600	2	0.3	-	0.0	-	0.0
DS03 - *Leptoseris* spp.	600	29	4.8	24	4.0	29	4.8
DS04 - *Pachyseris* spp.	600	11	1.8	8	1.3	9	1.5
DS05 - *Pavona* spp.	600	49	8.2	45	7.5	44	7.3
DS06 - *Stylocoeniella* spp.	600	-	0.0	5	0.8	2	0.3
DS07 - *Coscinaraea* spp.	600	-	0.0	-	0.0	-	0.0
DS08 - *Balanophyllia* spp.	600	-	0.0	-	0.0	1	0.2
DS09 - *Dendrophyllia* spp.	600	25	4.2	21	3.5	33	5.5
DS10 - *Duncanopsammia axifuga*	966	777	80.4	451	46.7	535	55.4
DS11 - *Duncanopsammia peltata*	600	6	1.0	13	2.2	2	0.3
DS12 - *Heteropsammia* spp.	600	-	0.0	5	0.8	5	0.8
DS13 - *Tubastraea coccinea*	600	88	14.7	28	4.7	21	3.5
DS14 - *Tubastraea faulkneri*	600	25	4.2	65	10.8	57	9.5
DS15 - *Tubastraea micranthus*	600	8	1.3	15	2.5	9	1.5

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DS16 - *Turbinaria bifrons*	600	8	1.3	1	0.2	1	0.2
DS17 - *Turbinaria frondens*	600	9	1.5	3	0.5	2	0.3
DS18 - *Turbinaria mesenterina*	600	116	19.3	5	0.8	15	2.5
DS19 - *Turbinaria reniformis*	600	11	1.8	6	1.0	5	0.8
DS20 - *Turbinaria* spp. excluding those already listed	600	25	4.2	40	6.7	21	3.5
DS21 - *Euphyllia cristata*	600	90	15.0	56	9.3	38	6.3
DS22-ITQ-*Euphyllia glabrescens*	926	926	100.0	364	39.3	402	43.4
DS23 - *Fimbriaphyllia ancora*	1,863	1,876	100.7	990	53.1	859	46.1
DS24 - *Fimbriaphyllia divisa*	600	603	100.5	607	101.2	625	104.2
DS25 - *Fimbriaphyllia paraancora*	600	33	5.5	13	2.2	10	1.7
DS26 - *Galaxea* spp.	600	62	10.3	42	7.0	40	6.7
DS27 - *Cycloseris* fragilis	600	36	6.0	7	1.2	9	1.5
DS28-ITQ-*Cycloseris cyclolites*	600	112	18.7	41	6.8	32	5.3
DS29 - *Fungia* spp.	742	196	26.4	92	12.4	174	23.5
DS30 - *Heliofungia actiniformis*	600	245	40.8	309	51.5	139	23.2
DS31 - *Lobactis scutaria*	600	6	1.0	9	1.5	2	0.3
DS32 - *Heliopora coerulea*	600	-	0.0	-	0.0	-	0.0
DS33 - *Leptastrea* spp.	600	116	19.3	121	20.2	129	21.5
DS34 - *Acanthastrea pachysepta*	600	606	101.0	600	100.0	600	100.0
DS35 - *Acanthastrea echinata*	600	135	22.5	56	9.3	94	15.7
DS36-ITQ-*Acanthophyllia deshayesiana*	600	622	103.7	298	49.7	269	44.8
DS37 - *Cynarina lacrymalis*	600	176	29.3	140	23.3	152	25.3
DS38 - *Echinophyllia* spp.	600	600	100.0	559	93.2	427	71.2
DS39-ITQ-*Homophyllia* cf. *australis*	1,065	1,248	117.2	669	62.8	547	51.4

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DS40 - *Homophyllia bowerbanki*	600	591	98.5	544	90.7	515	85.8
DS41 - *Lobophyllia agaricia*	600	179	29.8	74	12.3	70	11.7
DS42 - *Lobophyllia hemprichii*	600	637	106.2	609	101.5	601	100.2
DS43 - *Lobophyllia radians*	600	102	17.0	85	14.2	69	11.5
DS44 - *Lobophyllia robusta*	600	111	18.5	181	30.2	223	37.2
DS45 - *Lobophyllia vitiensis*	600	51	8.5	28	4.7	38	6.3
DS46 - *Lobophyllia* spp. excluding those already listed	3,147	1,185	37.7	850	27.0	779	24.8
DS47 - *Micromussa amakusensis*	600	65	10.8	126	21.0	47	7.8
DS48-ITQ-*Micromussa lordhowensis*	3,715	3,715	100.0	2,342	63.0	1,539	41.4
DS49 - *Micromussa pacifica*	600	39	6.5	25	4.2	36	6.0
DS50 - *Moseleya latistellata*	600	29	4.8	21	3.5	12	2.0
DS51 - *Oxypora* spp.	600	96	16.0	144	24.0	125	20.8
DS52 - *Catalaphyllia jardinei*	1,772	1,258	71.0	1,022	57.7	944	53.3
DS53 - *Caulastraea* spp.	600	70	11.7	62	10.3	59	9.8
DS54 - *Coelastrea* spp.	600	43	7.2	28	4.7	44	7.3
DS55 - *Cyphastrea* spp.	600	129	21.5	170	28.3	158	26.3
DS56 - *Dipsastraea* rosaria	600	347	57.8	603	100.5	519	86.5
DS57 - *Dipsastraea* spp. excluding those already listed	600	302	50.3	307	51.2	402	67.0
DS58 - *Echinopora* spp.	600	151	25.2	32	5.3	16	2.7
DS59 - *Favites pentagona*	600	308	51.3	331	55.2	312	52.0
DS60 - *Favites* spp.excluding those already listed	2,745	528	19.2	484	17.6	255	9.3
DS61 - *Hydnophora* spp.	600	31	5.2	16	2.7	22	3.7
DS62 - *Leptoria* spp.	600	2	0.3	1	0.2	1	0.2
DS63 - *Merulina* spp.	600	11	1.8	14	2.3	10	1.7

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DS64 - *Mycedium elephantotus*	600	56	9.3	80	13.3	9	1.5
DS65 - *Oulophyllia* spp.	600	30	5.0	21	3.5	27	4.5
DS66 - *Paragoniastrea australensis*	600	125	20.8	104	17.3	164	27.3
DS67 - *Paragoniastrea* spp. excluding those already listed	600	217	36.2	221	36.8	141	23.5
DS68 - *Paramontastraea* spp.	600	-	0.0	-	0.0	-	0.0
DS69 - *Pectinia alcicornis*	600	32	5.3	23	3.8	33	5.5
DS70 - *Pectinia lactuca*	600	4	0.7	84	14.0	2	0.3
DS71 - *Pectinia paeonia*	600	4	0.7	8	1.3	8	1.3
DS72 - *Pectinia* spp. excluding those already listed	600	17	2.8	19	3.2	14	2.3
DS73 - *Platygyra* spp.	600	385	64.2	455	75.8	356	59.3
DS74-ITQ-*Trachyphyllia geoffroyi*	701	743	106.0	413	58.9	339	48.4
DS75 - *Montastraea* spp.	600	3	0.5	-	0.0	-	0.0
DS76 - *Oculina* spp.	600	-	0.0	-	0.0	-	0.0
DS77 - *Blastomussa merleti*	600	97	16.2	148	24.7	109	18.2
DS78 - *Blastomussa wellsi*	730	395	54.1	405	55.5	288	39.5
DS79 - *Physogyra lichtensteini*	600	65	10.8	23	3.8	34	5.7
DS80 - *Plerogyra sinuosa*	600	266	44.3	412	68.7	327	54.5
DS81 - *Bernardpora stutchburyi*	600	35	5.8	13	2.2	30	5.0
DS82 - *Goniopora stokesi*	600	600	100.0	492	82.0	470	78.3
DS83 - *Goniopora* spp. excluding those already listed	2,554	1,315	51.5	1,160	45.4	1,392	54.5
DS84 - *Porites* spp.	600	15	2.5	7	1.2	31	5.2
DS85 - *Psammocora* spp.	600	20	3.3	4	0.7	2	0.3
DS86 - *Siderastrea* spp.	600	-	0.0	-	0.0	-	0.0
DS87 - *Distichopora* spp.	600	21	3.5	8	1.3	14	2.3

Quota	TAC (kg)	2022–23		2023–24		2024–25	
		Total usage (kg)	% Used	Total usage (kg)	% Used	Total usage (kg)	% Used
DS88 - *Stylaster* spp.	600	1	0.2	2	0.3	6	1.0
DS89 - *Tubipora musica*	600	104	17.3	69	11.5	61	10.2
DS90 - Sea Anemone - *Entacmaea quadricolor*	60,000	171	0.3	50	0.1	85	0.2
DS91 - Sea Anemone - Actiniaria - all families	60,000	36	0.1	12	0.0	18	0.0
DS92 - Sea Anemone - *Heteractis crispa*	60,000	8	0.0	2	0.0	6	0.0
DS93 - Sea Anemone - *Heteractis magnifica*	60,000	38	0.1	25	0.0	41	0.1
DS-ITQ	60,040	23,661	39.4	12,958	25.6	12,155	24.0

Appendix 6 – Queensland coral fishery vulnerability assessment results[14]

A vulnerability assessment (VA) for the QCF was completed using a productivity and susceptibility analysis (PSA). The PSA is a semi-quantitative assessment method, and it was used to estimate the relative vulnerability of coral species based on their biological characteristics and susceptibility to fishing activities. Productivity attributes evaluate the biological traits (e.g. age at maturity, growth rates, and reproduction) and ecological attributes (e.g. distribution, ecological niche, and management) that influence vulnerability. Attributes were aligned with previous assessments conducted by QDPI (Department of Agriculture and Fisheries, 2024) but were modified to account for the specific traits of coral species and the distinct characteristics and dynamics of hand-collection fisheries.

To construct the PSA, each species was assigned a vulnerability scores of 1 (low), 2 (medium), or 3 (high) to each of the respective attributes. In cases of insufficient data, a precautionary default score of high vulnerability (3) was applied to minimise false negatives, though this may lead to conservative results and potential overestimations (false positives). Potential false negatives were addressed through a secondary assessment, the residual vulnerability analysis (RVA), which incorporates stakeholder consultation, grey literature and anecdotal evidence. The VA outputs were used to inform ERA discussions, particularly those relating to the consequence analysis. The following table provides an overview of the PSA outputs including the vulnerability rating assigned to each species. These ratings formed the basis of discussions surrounding the assignment of the consequence scores in the likelihood and consequence analysis (refer to Table 1).

Table A2. Summary of the outputs from the Queensland coral fishery vulnerability assessment.

Family	Species	Industry name	CAAB code	Vulnerability ranking
Lobophylliidae	*Acanthastrea pachysepta*	Pachysepta	11307023	Medium
Lobophylliidae	*Acanthophyllia deshayesiana*	Desh	11307054	Medium
Acroporidae	*Acropora* aff. *microclados*	Strawberry shortcake	N/A	Not assessed
Plerogyridae	*Blastomussa wellsi*	Blasto	11307014	Low

[14] The QCF VA, finalised in April 2026, is based on the best available data at the time of assessment. This analysis is subject to revision should new information or data become available in the future.

Family	Species	Industry name	CAAB code	Vulnerability ranking
Merulinidae	*Catalaphyllia jardinei*	Elegance coral	11327001	Medium
Merulinidae	*Dipsastraea rosaria*	Prism coral	11305033	Medium
Dendrophyllidae	*Duncanopsammia axifuga*	Duncan	11320003	Medium
Euphyllidae	*Euphyllia glabrescens*	Torch	11327005	Medium
Merulinidae	*Favites pentagona*	War coral	11305051	Low
Euphyllidae	*Fimbriaphyllia ancora*	Hammer	11327002	Medium
Euphyllidae	*Fimbriaphyllia divisa*	Frogspawn	11327004	Medium
Euphyllidae	*Fimbriaphyllia paraancora*	Paraancora	11327006	Medium
Poritidae	*Goniopora stokesi*	Goni	11325028	Medium
Fungiidae	*Heliofungia actiniformis*	Helio	11298036	Medium
Lobophylliidae	*Homophyllia bowerbanki*	Bowerbanki	11307001	Medium
Lobophylliidae	*Homophyllia* cf. *australis*	Scoly	11307030	High
Lobophylliidae	*Lobophyllia hemprichii*	Lobo	11307022	Medium
Lobophylliidae	*Micromussa lordhowensis*	Acan	11307008	High
Plerogyridae	*Plerogyra sinuosa*	Plero	11327011	Medium

Family	Species	Industry name	CAAB code	Vulnerability ranking
Merulinidae	*Trachyphyllia geoffroyi*	Trachy	11305116	Medium

Appendix 7 – Assessment justifications

Acanthastrea pachysepta

Consequence (C = 2)	Likelihood (L = 4)
• *A. pachysepta* is a colonial, large polyp stony coral. Fragments are collected during harvesting, leaving the parent colony intact. Recovery through natural growth and repair following commercial harvest is unknown. • Industry report that approximately 10% of *A. pachysepta* colonies are harvested per dive, with only the most desirable colour morphs selected. Market demand is highly specific, with a strong demand for exceptional colouration and quality. • The reported depth range for this species overlaps with areas commonly accessed by commercial fishers in the QCF, making its populations highly accessible to fishing with limited refuge opportunities. • The PCC limit for *A. pachysepta* was exceeded by approximately 1% in 2022–23 and 2023–24, and reached 100% in 2024–25, raising concerns about potential overharvesting. • The *A. pachysepta* harvest was historically reported as part of a broader category with species-specific reporting only introduced in 2021–22. As a consequence, the available data provides limited insights into the long-term harvest trends of this species. • From 2022–23 to 2024–25, approximately 96% of the harvest occurred in the southern GBR with 70% of the total harvest originating from three fishing grids. This suggests moderate	• Under favourable conditions, the growth and repair mechanisms of *A. pachysepta* are expected to restore the biomass of harvested colonies. However, recovery timeframes for this species remain uncertain due to limited data on growth rates and the influence of environmental variables. • Natural recruitment of *A. pachysepta* will support population replenishment through broadcast spawning, which enables larval dispersal via ocean currents to establish new colonies while enhancing connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). The timeframe for full recovery on reefs remains uncertain and depends on various environmental factors. • While the coral trait database classifies *A. pachysepta* as uncommon (Díaz and Madin, 2010, Veron, 1986), industry feedback indicates that it is highly abundant across various habitats, including islands and reefs throughout the GBR. • Despite being smaller than some other *Lobophyllia* species, colonies are reportedly found in large numbers in collection areas, suggesting the species may be more prevalent in certain regions than previously documented. • Quota overruns in the past three fishing seasons have been minimal and the PCC limit for this species is precautionary

fishing concentration with a high regional focus. The southern GBR region will experience the greatest impact. • *A. pachysepta* has been reported to be moderately susceptible to bleaching in a global assessment (Huang et al., 2024d). However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species in the GBR. Prolonged exposure to heat stress increases the risk of bleaching and mortality, reducing the species' resilience and recovery capacity.	(Pratchett, 2021). Transitioning *A. pachysepta* to an ITQ would assist in terms of minimising the risk of larger overruns. • Prolonged heat stress poses a threat to *A. pachysepta*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events, which increases the likelihood of bleaching and mortality.
Risk rating: Moderate (C2*L4 = 8)	

Acanthophyllia deshayesiana

Consequence (C = 3)	Likelihood (L = 3)
• *A. deshayesiana* is a solitary species, with entire colonies removed during harvest. Its population relies solely on natural recruitment for replenishment, but low growth rates and large polyp size may result in long recovery times, potentially impacting local populations and limiting replenishment. • The depth range of this species is not well documented. However, anecdotal reports suggest it occurs from 16–75m (Reeflex, 2023), indicating a potential preference for deeper waters and refuge beyond areas fished in the QCF. • *A. deshayesiana* occupies a specific ecological niche, which may limit its ability to form widespread populations, resulting in a patchy abundance and distribution.	• Natural recruitment of *A. deshayesiana* supports population replenishment through broadcast spawning, enabling larval dispersal, the establishment of new colonies, and enhanced connectivity among metapopulations (Meziere et al., 2025, Thomas et al., 2019). However, recovery timeframes remain unknown and will be dependent on environmental factors. Stock replenishment for this species might be further constrained by its specific habitat requirements. • Pratchett et al. (2020a) documented moderate densities and biomass of *A. deshayesiana* in some areas of the GBR. However, the effects of sustained harvest pressure on its abundance remain unclear. Since this species predominantly inhabits inter-

• In 2022–23, the PCC limit was exceeded by 3.66%, leading to the implementation of an ITQ system in 2023–24. Since adopting the ITQ system, less than 50% of the allocated quota has been utilised during the 2023–24 and 2024–25 fishing seasons. • From 2022–23 to 2024–25, approximately 37% of the harvest is in the far northern GBR and 63% occurred in the northern GBR. 85% of the total harvest originates from three fishing grids. This suggests that the species is regionally focused and has highly concentrated fishing pressures. This could affect the resilience and recovery potential of local populations with the northern GBR region expected to experience the greatest impacts. • Anecdotal reports from industry indicate *A. deshayesiana* is moderately susceptible to bleaching during heat stress. Bleaching susceptibility varies by region / environmental conditions and is yet to be determined empirically for this species (Pratchett, 2021). Prolonged exposure increases the risk of bleaching and mortality, potentially reducing the species' resilience and recovery.	reef areas, reported coral declines in shallow reef habitats may not be representative of the population (Pratchett, 2021). • Industry feedback suggests that *A. deshayesiana* may be locally abundant in inter-reef areas at depths of 15–25 metres between Cairns and Princess Charlotte Bay. However overall densities are expected to be low (Pratchett, 2024c) and there is limited abundance data (Pratchett, 2024b). • Densities may increase with depth with the species being afforded protection in depths not accessed by the fishery. The species is not reported from the southern GBR and operators in this region are unlikely to target more northern stocks (i.e. it would not be economically viable). • The quota overrun of *A. deshayesiana* in 2022–23 was driven by a race-to-fish dynamic, but the introduction of an ITQ system in 2023–24 reduced harvest levels and lowered the risk of overharvesting in Queensland. • Market demand is focused on small, colourful specimens, with large or green-coloured specimens less marketable. The species' heavy skeletons (up to 1kg) also lead to faster quota exhaustion compared to other species. These factors increase the probability that specimens will be left *in-situ* and reduces the risk of the species experiencing unsustainable population declines. • Prolonged heat stress poses a threat to *A. deshayesiana*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality. However, the species' preference for deeper, inter-reef habitats may help moderate its susceptibility.

Risk rating: Moderate (C3*L3 = 9)

Acropora aff. *microclados*

Consequence (C = 2)	Likelihood (L = 4)
• *A.* aff. *microclados* likely represents more than one species (Pratchett, 2024a) and this taxonomic uncertainty was identified as a key risk area (2026 ERA Workshop, Cairns, 23 April 2026). The inability to distinguish between species and the lack of species-level reporting could result in undetected impacts on populations. • *A.* aff. *microclados* is a colonial, small-polyp stony coral with small corallites and a tabulate growth form. It is harvested as fragments (frags) and entire colonies (Pratchett, 2021). • Recovery through natural growth and repair following commercial harvest is expected to occur relatively quickly considering the *Acropora* spp. are fast growing (Pratchett et al., 2015, Pacey et al., 2022). • *A.* aff. *microclados* is a specialist, occupying a specific ecological niche, which may limit its ability to form widespread populations, resulting in a patchy abundance. As *A.* aff. *microclados* represents multiple species, the abundance of this group cannot currently be determined. • Although species-specific harvest data for *A.* aff. *microclados* is unavailable, Pratchett (2024a) reported that this species	• *Acropora* corals often have high recruitment rates (Australian Fisheries Management Authority, 2020), but these depend on the abundance of surrounding colonies and decline with declining broodstock (Gilmour et al., 2013). • Broodstock is not expected to be heavily impacted, and recruitment is likely to remain largely unaffected by commercial collection. The main reasons for this are that industry primarily harvests small fragments and *Acropora* corals are fast-growing. • *A.* aff. *microclados* is often found in offshore reefs located in high-energy environments that are more difficult to access. These accessibility challenges may result in less frequent harvesting, potentially allowing colonies time to recover before being harvested again. • Industry indicates that during harvesting, the central colony is left intact, with only small fragments collected from the peripheral branches. This practice maintains wild populations. If the parent colony's base remains *in situ*, it can regrow, even after disturbances. Additionally, harvesting of this species is highly selective, with only one colour variant (pink) targeted. • The genus-level harvest of *Acropora* has remained below the allocated PCC for the past three fishing seasons. However, the lack of species-specific catch limits and reporting increases the

represents around 22.2% of specimens in QCF unloads, 18.2% of the total harvest weight, and 16.16% of sampled corals. • The harvest of *Acropora* spp. in the QCF is primarily concentrated in the northern region of the GBR, with *A.* aff. *microclados* likely targeted in areas where desirable colour morphs occur. Anecdotal evidence suggests that the "strawberry shortcake" colour morph is predominantly harvested offshore from Cairns at the 'hard line' (Chalias, 2019). Specimens from other regions, such as Mackay, and different colour morphs like "blue strawberry," may represent distinct species (Pratchett, 2024a). • Recent information indicates that the species commonly referred to by the industry as "strawberry shortcake" is not only widespread across the GBR but also relatively common compared to other Acropora species (2026 ERA Workshop, Cairns, 23 April 2026). • *Acropora* corals are highly sensitive to environmental changes and disturbances, with a high susceptibility to bleaching and high mortality rates when their thermal tolerance is exceeded (Pratchett et al., 2020b, Burn et al., 2023). The severity of these impacts varies depending on species, region, depth, habitat, and local conditions (Hoogenboom et al., 2017). • While *Acropora* corals are fast-growing and capable of rapid recovery under favourable conditions (Great Barrier Reef Marine Park Authority, 2024), recent mass bleaching events have caused significant declines in their populations on the GBR (Pratchett, 2021). Although some recovery has been observed, these populations remain highly vulnerable to future marine heatwaves (Pratchett, 2021).	risk of undetected localised impacts on heavily harvested *Acropora* species. • *A.* aff. *microclados* accounts for an estimated 18% of the harvest by weight of *Acropora* spp. (Pratchett, 2024a) and is the most commonly harvested *Acropora* species group. • While overall *Acropora* harvest is within quota, taxonomic uncertainties make it difficult to assess the risk of harvesting at the species level, further heightening the potential for undetected impacts. • As *Acropora* spp. are highly susceptible to bleaching, prolonged heat stress is considered a substantial threat. The risk is likely exacerbated by its habitat specificity.

Risk rating: Moderate (C2*L4 = 8)

Blastomussa wellsi

Consequence (C = 1)	Likelihood (L = 4)
• *B. wellsi* is a is a colonial, large-polyp stony coral with medium corallites. The entire colony is usually collected during commercial harvest, however, sometimes they are collected as fragments. Its population primarily relies on natural recruitment for replenishment, potentially impacting local populations and limiting replenishment. Inferred moderate growth rates and medium polyp size may result in faster recovery than other specialty coral species with low growth rates. • The reported depth range of this species is within the depth range commercial fishers commonly access, with some refuge outside the fishery area. For example, anecdotal industry evidence suggests that the density of this species increases with depth (2026 ERA Workshop, Cairns, 23 April 2026). • 55%, 55% and 40% of the *B. wellsi* quota was utilised in the 2022–23, 2023–24 and 2024–25 fishing seasons (respectively). Approximately 33% of this harvest occurred in the northern GBR and ~67% in the southern GBR. • Fishing activities, when compared to other species, is less concentrated and occurs across a larger geographical area. For context, approximately 57% of the total harvest originates from three fishing grids compared to >80 or 90% for species with highly concentrated harvest patterns.	• Under favourable conditions, growth and repair mechanisms for *B. wellsi* are expected to restore the biomass of harvested colonies. This inference though is still to be tested as there is limited data on the growth rate of this species and/or how environmental factors influence this parameter. • Natural recruitment will support population replenishment through broadcast spawning, enabling larval dispersal, the establishment of new colonies, and enhanced connectivity among metapopulations (Meziere et al., 2025, Thomas et al., 2019). However, recovery timeframes remain unknown and depend on environmental factors. • While the coral trait database classifies *B. wellsi* as uncommon (Díaz and Madin, 2010, Veron, 1986), industry feedback suggests that it is highly abundant in suitable habitats such as sloping reefs and turbid areas. It has been further hypothesised that the density of this species increases with water depth. This feedback suggests that *B. wellsi* may be more abundant in certain areas than previously reported. • The market demand for this species is lower than other specialty corals, and this is reflected in the catch data. Since the implementation of the PCC limit, 40–55% of the quota has been retained over the last three fishing seasons.

• *B. wellsi* has been reported to be moderately susceptible to bleaching in a global assessment (Dellisanti et al., 2024). However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species on the GBR. Prolonged exposure to heat stress increases the risk of bleaching and mortality, potentially reducing the species' resilience and recovery capacity.	• Overall, there is little evidence to suggest that there is a high likelihood of this species experiencing an overharvesting event and/or QCF fishing having an adverse impact on local or regional populations. • Prolonged heat stress poses a threat to *B. wellsi*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.
Risk rating: Low (C1*L4 = 4)	

Catalaphyllia jardinei

Consequence (C = 2)	Likelihood (L = 3)
• *C. jardinei* is a colonial, free-living, large-polyp stony coral with large corallites. As the entire colony is removed from the reef during commercial harvesting, population replenishment relies solely on natural recruitment. • It has a moderate growth rate and large polyp size, meaning recovery through recruitment may take several years. This has the potential to place local populations under sustained pressure and compound regional impacts including potential impairment of the species' ability to replenish stocks and repopulate. • Pratchett et al. (2020a) reported that *C. jardinei* can be found in very high abundance and biomass in certain areas on the GBR. However, this study also noted that *C. jardinei* is harvested as	• Natural recruitment of *C. jardinei* supports population replenishment through broadcast spawning, which enhances larval dispersal, colony establishment, and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). However, the timeframe for full recovery remains unknown and likely depends on environmental conditions. • Industry reports indicate high but variable *C. jardinei* abundance and biomass in certain habitats on the GBR, including turbid environments, deep lagoons, sandy bottoms, and inter-reef areas where it forms dense "beds."

relatively small, discrete colonies from areas with moderate levels of abundance and biomass. • The depth range of this species overlaps with the depths commonly accessed by commercial fishers. Some refuge exists outside the fishery area, as it has been recorded to 40 metres. • Harvest levels have remained below the PCC limit with 71%, 58% and 53% of the quota utilised in the 2022–23, 2023–24 and 2024–25 fishing seasons respectively. These trends indicate that *C. jardinei* will be exposed to moderate harvest levels. • From 2022–23 to 2024–25, approximately 24% pf the harvest occurred in the northern GBR and 73% in the southern GBR. 60% of the total harvest originates from three fishing grids. This indicates a regional focus and moderate fishing pressure, with the southern GBR expected to face the greatest local impacts. • *C. jardinei* is sensitive to elevated temperatures (Pratchett, 2021) and has shown to experience bleaching and mortality under experimental heat stress (Pratchett et al., 2020b). Prolonged exposure to heat stress beyond its tolerance threshold could severely impact local populations, reducing their resilience and recovery capacity.	• Current harvest levels are expected to pose minimal risk, but further research is needed to understand recruitment and establish robust harvest limits. • Catch rates for *C. jardinei* remain well within the species-specific PCC, which has likely helped to minimise the risk of overharvesting and localised depletion in Queensland. • While *C. jardinei* displays some susceptibility to bleaching, this is considered a lower threat for this species when compared to other corals (Porter et al., 2024). This, in part, can be attributed to its preference for deeper, inter-reef habitats (Pratchett, 2021).
Risk rating: Low (C2*L3 = 6)	

Dipsastraea rosaria

Consequence (C = 2)	Likelihood (L = 3)

• *D. rosaria* is a colonial species presenting multiple growth forms. Within the QCF, industry only collect fragments with the parent colony left *in-situ*. • While the growth rate of this species is not well-documented, similar species in the *Dipsastraea* genus exhibit low to moderate growth (Doropoulos et al., 2025, Pratchett et al., 2015). • Recovery through natural growth and repair following harvesting is unknown. Inferred moderate growth rates and medium polyp size may result in faster recovery than other specialty coral species with low growth rates. • The depth range of *D. rosaria* is narrow and overlaps with the depths commonly accessed by commercial fishers, making its populations highly accessible to fishing. • The PCC for this species was exceeded by <1% in 2023–24 but remained within the quota limits in 2022–23 and 2024–25. This species should be closely monitored for changes in market demand to ensure the limit is not exceeded again. • From 2022–23 to 2024–25, approximately 95% of the harvest occurred in the southern GBR. 70% of the total harvest originates from three fishing grids suggesting it has moderate fishing concentration with a high regional focus. Stocks/populations located in the southern GBR region will have higher exposure to QCF related impacts. • *D. rosaria* has been reported to be moderately susceptible to bleaching in a global assessment (Huang et al., 2024a). However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species on the GBR.	• Under favourable conditions, the growth and repair mechanisms of *D. rosaria* are expected to restore the biomass of harvested colonies. Natural recruitment will further support population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • While noting the above, estimated timeframes for full recovery and replenishment are unknown. It is also anticipated that the ability of this species to replenish will depend on environmental factors. • While a minimal quota overrun was recorded in 2022–23 (<1%), the provisional harvest limit for this species was based on expert advice (Pratchett, 2021) and viewed as precautionary. These measures have likely helped mitigate the risk of overharvesting. • While *D. rosaria* is classified as "rare" across the broader GBR, industry feedback indicates it is locally abundant in specific habitats, such as island rocky reefs, with some reefs displaying prolific populations. Colourful variants are less common and more scattered. This feedback suggests *D. rosaria* may be more abundant in suitable habitats than previously reported, though further research is needed to reconcile these differences and assess its overall abundance. • Prolonged heat stress poses a threat to *D. rosaria*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.

Prolonged exposure to heat stress increases the risk of bleaching and mortality, potentially reducing the species' recovery capacity.	
Risk rating: Low (C2*L3 = 6)	

Duncanopsammia axifuga

Consequence (C = 1)	Likelihood (L = 3)
• *D. axifuga* is a colonial species that is phenotypically plastic, growing in multiple forms. In the QCF operators only collect fragments during harvest with the parent colony left intact. • Recovery through natural growth and repair following commercial harvest is unknown. Inferred moderate growth rates and medium polyp size may result in faster recovery than other specialty coral species with low growth rates. • The reported depth range for *D. axifuga* overlaps with depth ranges commonly accessed by commercial fishers. Populations within the QCF are highly accessible and there are limited refuge opportunities beyond the bounds of the fishery. This overlap may increase the species' exposure to fishing activities. • 45–80% of the available quota was utilised during the 2022–23 to 2024–25 fishing seasons. From 2022–23 to 2024–25, approximately 42% of the harvest occurred in the northern GBR and ~58% in the southern GBR. 59% of the total harvest originates from three fishing grids.	• Under favourable conditions, the growth and repair mechanisms of *D. axifuga* are expected to restore the biomass of harvested colonies. • Natural recruitment will support population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • The estimated timeframe for full recovery and replenishment is unknown and is likely to vary depending on environmental factors. The replenishment of *D. axifuga* stocks may also be limited by habitat, as it grows in a specific ecological niche. • Market demand for this species is lower than other specialty corals, and this is reflected in the catch data. Since the implementation of the PCC limit, 45–80% of the quota has been retained. Based on the available catch data, there is little evidence to suggest overharvesting or adverse impacts on regional populations of the species.

• Based on this data *D. axifuga* has moderate harvest levels with more generalised fishing patterns i.e. fishing activities are not regionally focused but are moderately concentrated. • *D. axifuga* is susceptible to bleaching but may be resilient to heat stress, with experimental studies demonstrating a low incidence of mortality under elevated light and heat conditions (Pratchett et al., 2020b). This species has been reported as resilient to bleaching in a global assessment (Johnson et al., 2023). However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species on the GBR. Prolonged exposure to heat stress increases the risk of bleaching and mortality, potentially reducing the species' resilience and recovery capacity.	• Although classified as "rare" across the GBR (Veron, 1986, Díaz and Madin, 2010), industry feedback indicates that the species is highly abundant in specific habitats, such as sandy lagoons, bare sand areas, inter-reefal zones, and coastal reefs. It forms large, dense patches or "beds" in suitable conditions. This discrepancy may be due to insufficient surveying of these habitats and further research is needed to reconcile these differences and assess the overall abundance of *D. axifuga*. • Prolonged heat stress poses a threat to *D. axifuga*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality. However, *D. axifuga* may have a higher capacity for recovery than other species.
Risk rating: Low (C1*L3 = 3)	

Euphyllia glabrescens

Consequence (C = 2)	Likelihood (L = 3)
• *E. glabrescens* is a colonial, large-polyp stony coral with large corallites that can grow either attached or free-living. Only fragments are collected during harvesting, leaving the parent colony intact. • Recovery through natural growth and repair following commercial harvest is estimated to take several years based on its inferred moderate growth rate and large polyp size, as indicated by industry feedback.	• Under favourable conditions, the growth and repair mechanisms of *E. glabrescens* are expected to restore the biomass of harvested colonies, with recovery occurring relatively quickly due to it's moderate to fast growth rate (Pratchett et al., 2020a). • Natural recruitment will further support population replenishment, as planulae are well-developed, exhibit high survival rates, and tend to settle near the parent colony. While recovery timeframes will depend on environmental factors,

• Pratchett et al. (2020a) reported *E. glabrescens* as abundant where it was found during surveys conducted in 2020 in Cairns, Mackay and the Keppel regions. This report found no significant difference in the overall abundance and biomass of *E. glabrescens* between fished and no-take zones. • In the Cumberland Islands, biomass in fished zones was less than 60%[15] of that in protected areas. Individuals in fished zones also had a smaller average diameter, indicating potential localised impacts of fishing on population structure (Pratchett et al., 2020a). • The depth range of *E. glabrescens* overlaps with areas commonly accessed by commercial fishers. Populations are highly accessible with the species having limited refuge within actively fished areas. • The PCC limit exceeded by less than 1% in 2022–23. To address this issue and limit the race-to-fish dynamic, an ITQ system was introduced in 2023–24. During the 2023–24 and 2024–25 seasons, the fishery utilised around 40% of the quota allocated under ITQs. • From 2022–23 to 2024–25, approximately 68% of the harvest occurred in the southern GBR. 60% of the total harvest originates from three fishing grids. This suggests the harvest of this species is moderately concentrated with some regional focus, though	reproduction and growth traits suggest that *E. glabrescens* has strong potential for recovery. • Industry feedback suggests the species has moderate to high abundance in specific regions, consistent with reports of dense aggregations in suitable habitats (Pratchett, 2021). It is noted to be particularly prolific in areas such as the Keppel Islands, Capricorn Bunker Group, and Swains Reefs, where it is often the dominant species. • Anecdotal evidence suggests that the introduction of ITQs is supporting the recovery of regional populations. Desirable colour morphs are less common, which provides some level of protection for less sought-after colours and may help support population stability. • The quota overrun of *E. glabrescens* in 2022–23 was addressed through the implementation of an ITQ in 2023–24. This management reform contributed to a decline in the total harvest and lowered the overharvesting risk • Additionally, market demand focuses on desirable colour morphs, with large or dull-coloured specimens being unsuitable for sale, making regional population declines unlikely. • As *E. glabrescens* is highly susceptible to bleaching, prolonged heat stress is considered a substantial threat. The risk is exacerbated by its limited dispersal capacity and the proximity of

[15] Pratchett (2024c) classified localised depletion as instances where abundance or biomass in fished zones falls below 60% of that in no-take zones. This threshold was aligned with the broader, more generalised, Maximum Economic Yield (MEY) targets outlined in the Queensland Sustainable Fisheries Strategy (SFS) (Department of Agriculture and Fisheries, 2017).

localised impacts may occur despite no evidence of broader regional decline due to species' low dispersal capacity. • *E. glabrescens* is highly sensitive to elevated temperatures, with experimental studies demonstrating significant bleaching and mortality under heat stress (Pratchett et al., 2020b, Pratchett et al., 2020a). Prolonged exposure to temperatures exceeding its tolerance threshold increases the risk of bleaching and mortality and can lead to severe impacts on local populations. Such stress may compromise the species' resilience and its capacity to recover from disturbances.	large colonies, making localised bleaching impacts severe and more likely.
Risk rating: Low (C2*L3 = 6)	

Favites pentagona

Consequence (C = 1)	Likelihood (L = 4)
• *F. pentagona* is a colonial species that is harvested as fragments with the parent colony remaining *in-situ* and intact. • The growth rate of this species has not been well-documented. However, industry observations, along with its small to moderate corallite sizes, suggest that natural growth and repair following commercial harvest may enable this species to recover more quickly compared to other specialty corals. • This reported depth profile for this species is broad and provides it with a degree of refuge from fishing activities in the QCF. The species is also exposed to moderate fishing pressures with	• The growth and repair mechanisms of *F. pentagona* are expected to restore the biomass of harvested colonies under favourable conditions. Natural recruitment will further support population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • The estimated timeframe for full recovery and replenishment (after harvest) is unknown and is likely to vary depending on environmental factors. • Industry feedback on *F. pentagona* abundance aligns with the coral trait database which classifies this species as common (Díaz

approximately 50% of the PCC utilised in the 2022–23 to 2024–25 fishing seasons. • From 2022–23 to 2024–25, approximately 81% of the harvest occurred in the southern GBR. 59% of the total harvest originated from three fishing grids indicating that fishing patterns for this species is somewhat regional and moderately concentrated. • *F. pentagona* is inferred to be stress-tolerant based on genus-level classifications (Darling et al., 2012) and has been reported to be moderately susceptible to bleaching in a global assessment (Huang et al., 2024d). However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species on the GBR. Prolonged exposure to heat stress increases the risk of bleaching and mortality, potentially reducing the species' resilience and recovery capacity.	and Madin, 2010, Veron, 1986). Industry reports indicate that the species is found in moderate to high abundance in the GBR, with occurrences reported from islands off Yeppoon to Mackay, reef slopes and flats north of the Whitsundays, and inter-reefal rubble zones at depths of 20 metres. • Market demand for this species is lower than other specialty corals which is reflected in the catch data. Only ~50% of the PCC limit has been retained over the last three seasons and there is a low probability of this species experiencing a quota overrun and/or the QCF having an adverse impact on local or regional populations. • The long-term recruitment and population dynamics of *F. pentagona* are unlikely to be adversely impacted by mild, seasonal heat accumulation. However, prolonged heat increases the risk of more severe impacts. The increasing frequency of marine heatwaves and disturbance events on the GBR significantly raises the risk of localised bleaching, the stress-tolerance of *Favites* spp. suggests that such impacts will occur occasionally under the current fishing environment.
Risk rating: Low (C1*L4 = 4)	

Fimbriaphyllia ancora

Consequence (C = 2)	Likelihood (L = 3)
• *F. ancora* is a colonial, large-polyp stony coral typically harvested in fragments. Recovery through natural growth and repair following commercial harvest is unknown. Based on its inferred	• It is hypothesised that harvest recovery rates for *F. ancora* will be gradual. However, anecdotal evidence suggests that, under ideal captive conditions, *F. ancora* will grow from 5–20 mm per year. This suggests that recovery times for this species may be faster

moderate growth rate and large polyp size, it is expected to take several years. • *F. ancora* is a generalist species, capable of establishing in a variety of reef environments, which likely supports the formation of widespread populations. It may be a dominant species in ideal conditions (Pratchett, 2021). • The depth range of this species overlaps with the depths commonly accessed by commercial fishers. The species is highly accessible to QCF operations, and it has more limited refuge opportunities within the fishery. • Pratchett et al. (2020a) reported low densities and biomass of *F. ancora* in Queensland; however, the sampling conducted in this study is not representative of the entire GBR. Pratchett (2024c) reported lower abundance, biomass, average size (diameter), and proportion of corals deemed vulnerable to harvesting in fished areas compared to no-take zones, with estimated biomass falling below 60%[16] in some locations. Additionally, the abundance and biomass of *F. ancora* were found to be consistent across different depths. • This species experienced a margin quota overrun the first year that the PCC limit was introduced. To address this potential, *F. ancora* was transitioned to an ITQ. Under ITQ, just 53% and 43% of the allocated quota was harvested across the 2023–24 and 2024–25 fishing seasons respectively.	in more favourable environments. This inference though cannot be confirmed as there is limited information on the growth rate of this species. • While natural recruitment through broadcast spawning supports population replenishment and connectivity, the exact timeframe for full recovery on reefs remains uncertain and depends on various environmental factors. • While generally considered uncommon, anecdotal evidence suggests that *F. ancora* is highly abundant in specific regions and habitats, including deeper reef waters, coastal zones, island reefs, rocky substrates, and sandy areas. It is reported as relatively common from Stanage Bay to Cairns, with widespread distribution from coastal waters to the outer reef. • A quota overrun of *F. ancora* occurred in 2022–23, but the introduction of an ITQ system has since reduced harvest levels and mitigated the risk of quota overruns. Additionally, market demand is primarily for specific colour morphs and smaller specimens, which reduces the risk of overharvesting at a regional level. However, the ITQ allocation, based on historical catch data, may not align with sustainable limits. Additionally, the absence of measures to prevent localised depletion could threaten local populations.

[16] Pratchett (2024c) classified localised depletion as instances where abundance or biomass in fished zones falls below 60% of that in no-take zones. This threshold was aligned with the broader, more generalised, Maximum Economic Yield (MEY) targets outlined in the Queensland Sustainable Fisheries Strategy (SFS) (Department of Agriculture and Fisheries, 2017).

• From 2022–23 to 2024–25, approximately 85% of the harvest occurred in the southern GBR with 50% of the total harvest originates from just three fishing grids. These data suggests that fishing patterns for this species have a high regional focus, are moderately concentrated and have an increased potential to impact populations at a local scale. • The thermal tolerance and bleaching susceptibility of *F. ancora* is currently unknown (Pratchett, 2021). When the bleaching threshold for *F. ancora* is exceeded, it is expected to undergo heat stress, leading to bleaching and in severe cases, mortality, similar to other coral species.	• Prolonged heat accumulation presents a threat to local populations of *F. ancora*, increasing the risk of bleaching and mortality, reducing its resilience and ability to recover.
Risk rating: Low (C2*L3 = 6)	

Fimbriaphyllia divisa

Consequence (C = 2)	Likelihood (L = 4)
• *F. divisa* is a colonial, large polyp stony coral with large corallites. Only fragments are collected during harvesting with the parent colony left intact and *in-situ*. • Due to its low growth rate and large polyp size, recovery through natural growth and repair following commercial harvest is estimated to take several years. • Pratchett (2024c) reported that the abundance and biomass of *F. divisa* was substantially lower in fished areas compared to no-take zones in the Northumberland Islands. In contrast, higher abundance and biomass were recorded in fished areas of the Bedwell and Guardfish groups and Northern Shoalwater Bay.	• The growth and repair mechanisms of *F. divisa* are expected to restore the biomass of harvested colonies in favourable conditions. Natural recruitment will further support population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • However, there is limited data of the growth rate of this species and the exact timeframe for full recovery remains uncertain. The ability of this species to recover from a harvesting event will depend on environmental factors and may be regionally specific.

This suggests that the response of this species to coral harvesting may vary regionally are not uniform. • The reported depth range of this species overlaps with areas commonly accessed by commercial fishers in the QCF. The species is highly accessible to QCF operations, and it has more limited refuge opportunities. • The PCC limit was exceeded by <1%, ~1% and ~4% in 2022–23, 2023–24 and 2024–25 fishing seasons respectively. This data highlights issues relating to overharvesting the provisional limit and potential subsequent impacts on local populations. • Approximately 84% of the harvest occurred in the southern GBR, with ~60% concentrated in three fishing grids. Fishing patterns for this species have a high regional focus, are moderately concentrated and have an increased potential to impact the resilience and recovery potential of local populations. Localised areas in the southern GBR region are anticipated to experience the greatest impact. • The thermal tolerance and bleaching susceptibility of *F. divisa* is currently unknown. Bruno et al. (2001) qualitatively observed that *F. divisa* (prev. *Euphyllia divisa*) exhibited high bleaching and estimated mortality during the 1998 coral bleaching event in Palau. This indicates high susceptibility to heat stress for this species in the western Pacific Ocean. However, bleaching susceptibility varies by region / environmental conditions and is not well resolved for this species on the GBR. Prolonged exposure to heat stress increases the risk of bleaching and mortality, potentially reducing the species' resilience and recovery capacity.	• While the coral trait database classifies *F. divisa* as uncommon (Díaz and Madin, 2010; Veron, 1986), industry observations suggest that it is highly abundant and widespread, particularly from Stanage Bay to Cairns, across diverse habitats, including turbid areas. Feedback received during the ERA process also described *F. divisa* as one of the most common *Fimbriaphyllia* species. • Further research on the abundance of *F. divisa* is required to determine the prevalence of the species within the GBRMF. Of note, surveys noted that *F. divisa* was observed at higher abundance and biomass in fished zones compared to no-take zones in some southern GBR sampling areas (Pratchett, et al., 2024c). This suggest that the species may be more prevalent in certain regions of the GBR. • Quota overruns have been reported for *F. divisa* over each of the past three fishing seasons. The adoption of a "race-to-fish" dynamic has been identified as the main driver of risk with the entire quota being exhausted within a few months of the season opening. • The provisional harvest limit for this species was recommended in expert advice (Pratchett, 2021) and does not reflect a confirmed sustainable catch limit. This limit was surpassed 25kg in the 2024–25 season. To prevent further quota overruns and potential localised depletion in Queensland, additional management measures should be considered. • Harvesting practices are highly selective and focused on colourful specimens, with brown-coloured specimens less marketable but far more prevalent in nature.

	• Prolonged heat stress poses a threat to *F. divisa*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.
Risk rating: Moderate (C2*L4 = 8)	

Fimbriaphyllia paraancora

Consequence (C = 1)	Likelihood (L = 2)
• *F. paraancora* is a colonial, large-polyp stony coral with large corallites. Only fragments are collected during harvesting, with operators leaving the parent colony intact and *in-situ*. • This species has an inferred moderate growth rate (Johan et al., 2023). Recovery through natural growth and repair following commercial harvest is expected to occur in favourable conditions, although estimated timeframes and data for the GBR are unavailable. • Total harvest for *F. paraancora* is very low, with the mean annual harvest from 2022–23 to 2024–25 being just 19 kg. Approximately 86% of the *F. paraancora* harvest occurred in the northern GBR region with 95% coming from three fishing grids. Given the comparatively small rates of harvest, the threat of overharvest or localised depletion is considered extremely low for this species. • The species' reported depth range extends to 70 metres. This broad depth and occurrence in deeper and varied reef	• The growth and repair mechanisms of *F. paraancora* will support recovery of harvested colonies under favourable conditions. Natural recruitment through broadcast spawning is expected to contribute to population replenishment. Larval dispersal facilitates the establishment of new colonies and strengthens connectivity and gene flow among metapopulations. • There is limited data on the growth rate of this species and timeframe for full replenishment is unknown, particularly for populations on the GBR. Recovery times for harvested reefs may depend on a range of environmental factors. • While the coral trait database describes *F. paraancora* as uncommon (Veron, 2000, Carpenter et al., 2008), industry observations suggest it can be abundant in suitable habitats – noting that it less common than other *Fimbriaphyllia* species. • *F. paraancora* is found across a variety of reef environments, from shallow to deep reefs. This broad habitat range may provide some resilience to fishing impacts by offering refuge in

environments will provide *F. paraancora* with a comparatively high degree of protection from QCF activities. • The bleaching susceptibility of *F. paraancora* has been described as moderate in a global assessment, but this has not been quantified for GBR populations. The increasing frequency and intensity of marine heatwaves pose a risk to the species, particularly given the lack of region-specific data on its thermal tolerance. Prolonged exposure to heat stress could increase the risk of bleaching and mortality, potentially reducing the species' resilience and recovery capacity.	less accessible areas. It also acts as a natural mitigation measure and reduces the likelihood of an undesirable event occurring. • Prolonged heat stress poses a threat to F. divisa, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.
Risk rating: Low (C1*L2 = 2)	

Goniopora stokesi

Consequence (C = 2)	Likelihood (L = 3)
• *G. stokesi* is a colonial, free-living, large polyp stony coral with medium corallites. This species reproduces sexually (gonochoric broadcast spawning) and asexually (budding). While entire colonies are removed during commercial harvesting, *G. stokesi* has the ability to asexually produce daughter colonies and dense populations. These traits would improve the resilience of this species in terms of its capacity to rebound after potential declines and supporting recovery after harvesting. • The species occupies a wide range of reef environments and depths, including soft substrates in turbid waters and inter-reef areas, and has been recorded at depths of up to 42 metres. This	• The population replenishment of *G. stokesi* is supported by sexual reproduction (broadcast spawning) and asexual reproduction (budding). • Broadcast spawning enhances larval dispersal, colony establishment, and gene flow among metapopulations, while asexual reproduction allows for the formation of dense "beds" and consistent populations in certain areas. The timeframe for full recovery after harvesting is unknown and likely depends on environmental conditions, however, the reproductive strategies of this species may enhance its resilience. • Industry reports indicate that *G. stokesi* is commonly encountered in inter-reef areas from Cairns to Princess Charlotte

broad habitat range may increase its resilience to environmental disturbances and harvest pressures. • The PCC limit was exceeded by <1% in 2022–23. This data highlights potential issues relating to overharvesting the provisional limit. • The mean annual harvest of *G. stokesi* from 2022–23 to 2024–25 was 521 kg which equates to around 81% of the PCC. 61% of the total harvest originated from the top three fishing grids. This suggests that the harvest of *G. stokesi* is moderately concentrated and will remain at the higher end of the PCC limit. • Regional catch distribution show that approximately 57% of the harvest occurred in the northern GBR and 40% in the southern GBR. While the harvest is moderately concentrated, the species' ability to form dense populations reduces the risk of localised depletion. • Harvesting of this species is highly selective. Green variants are preferred, and the dense structure of this coral's skeletons mean the quota is quickly exhausted with a comparatively low number of specimens. • *G. stokesi* has been described as resilient to bleaching in a global assessment (Crabbe et al., 2024). Prolonged exposure to heat stress beyond its tolerance threshold could impact local populations, reducing their resilience and recovery capacity – like all Scleractinia.	Bay, where it forms dense populations. While the species is described as uncommon in the coral trait database (Veron, 1986, Díaz and Madin, 2010), regional observations suggest that it may display a degree of site fidelity and can be abundant in some areas (Morton et al., 2022). • While a quota overrun occurred in 2022–23, it was minimal (<1%) and over the provisional harvest limit defined in the expert advice (Pratchett, 2021) rather than a known sustainable catch limit. The conservative quota limit has likely reduced the risk of overharvesting. • While *G. stokesi* will be susceptibility to bleaching to some extent, this is considered a lower threat for this species when compared to other corals.
Risk rating: Low (C2*L3 = 6)	

Heliofungia actiniformis

Consequence (C = 2)	Likelihood (L = 3)
• *Heliofungia actiniformis* is a solitary, free-living, large-polyp stony coral with very large corallites. During commercial collection, the entire colony is removed. • As this species exhibits multiple reproductive strategies, including sexual reproduction (broadcast spawning and brooding) and asexual reproduction (budding), this may result in higher fecundity; therefore enhancing its resilience to harvesting pressures. • The species' reported depth range overlaps with areas commonly accessed by commercial fishers. *H. actiniformis* populations are highly accessible and have more limited refuge opportunities. • The mean annual harvest of *H. actiniformis* from 2022–23 to 2024–25 was 231 kg, with 70% of the total harvest originating from the top three fishing grids. Approximately 75% of the total harvest was in the southern region. This data suggests *H. actiniformis* harvest patterns are moderately concentrated and regionally focused. • Harvesting of *H. actiniformis* is highly selective, with markets demanding colour variants that are rarely encountered. This selectivity, combined with low harvest levels, reduces the potential for significant impacts on local populations. • The species has been described as stress-tolerant (Darling et al., 2012) and potentially resilient to bleaching, as indicated by global assessments (Bluemel et al., 2024). However, bleaching	• Natural recruitment of *H. actiniformis* supports population replenishment through broadcast spawning, enabling larval dispersal, the establishment of new colonies, and enhanced connectivity among metapopulations (Meziere et al., 2025, Thomas et al., 2019). However, recovery timeframes remain unknown and depend on environmental factors. • The species has multiple reproductive strategies, including asexual budding, which may enhance its resilience to harvesting and environmental pressures. These mechanisms support population replenishment through larval dispersal and budding, which may reduce the impacts of harvesting. • *H. actiniformis* is widely distributed across the GBR, from the Capricorn and Bunker Group in the south to Cairns in the north (Industry representatives, pers. comm. 2026). It is described as common in the coral trait database (Veron, 1986, Díaz and Madin, 2010) and is reported by industry as highly abundant in suitable habitats. These habitats include turbid, sheltered reef environments at depths of up to 25 metres (Veron, 2000, Díaz and Madin, 2010, Carpenter et al., 2008) as well as deeper, clear-water habitats where it can occur in high densities. • The market demand for this species is lower than other specialty corals, and this is reflected in the catch data. Since the implementation of the PCC limit, 23–51% of the quota has been retained over the last three fishing seasons. There is little

susceptibility varies by region / environmental conditions and is not well resolved for this species in the GBR. • Prolonged exposure to heat stress increases the risk of bleaching and mortality, reducing the species' resilience and recovery capacity.	evidence to suggest overharvesting or adverse impacts on local or regional populations of *H. actiniformis*. • While *H. actiniformis* may be more resilient than other species of specialty coral, prolonged heat stress poses a threat to this species, as it does to all corals. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.
Risk rating: Low (C2*L3 = 6)	

Homophyllia bowerbanki

Consequence (C = 2)	Likelihood (L = 3)
• *H. bowerbanki* is a colonial, large-polyp stony coral with large corallites that can grow in massive or encrusting forms. Only fragments are collected during harvesting, with operators leaving the parent colony intact and *in-situ*. • Pratchett et al. (2020a) recorded the average growth rate of *H. bowerbanki* as very low, measuring less than 1 mm per year (radial extension). However, some colonies demonstrated significantly higher growth rates, with a maximum recorded rate of approximately 29 mm per year. The observed variation in growth rates, is likely attributable to the prevalence of injury and partial mortality among the studied specimens. • Pratchett (2024b) found no significant difference in the abundance or biomass of *H. bowerbanki* between fished and no-take zones.	• Under favourable conditions, the growth and repair mechanisms of *H. bowerbanki* are expected to restore the biomass of harvested colonies, with recovery likely occurring relatively quickly due to its potentially fast growth rate (Pratchett et al., 2020a). It is anticipated that recovery rates for this species, when under stress, will be low. • While natural recruitment through broadcast spawning supports population replenishment and connectivity, the exact timeframe for full recovery on reefs remains uncertain and depends on various environmental factors. • Industry feedback suggests that this species should be regarded as uncommon rather than "rare". As previously reported, it can be found at higher local abundances in suitable habitats.

• *H. bowerbanki* occupies a narrow depth range that overlaps with areas targeted by commercial fishers, increasing its accessibility and limiting opportunities for refuge within the fishery area. • Since the implementation of harvest limits, approximately 99%, 90% and 85% of the allocated quota has been utilised during the 2022–23, 2023–24 and 2024–25 fishing seasons respectively. • From 2022–23 to 2024–25, approximately 99% of the harvest occurred in the southern GBR with 63% of the total harvest originating from just three fishing grids. This suggest that the harvest patterns for *H. bowerbanki* are moderately concentrated and have a high regional focus. • The bleaching susceptibility of *H. bowerbanki* is unknown. Pratchett et al. (2020a) reported a high incidence of partial mortality in a 2020 study on the GBR, potentially due to environmental stress. • Prolonged exposure to temperatures exceeding its tolerance threshold increases the risk of bleaching and mortality and can lead to severe impacts on local populations. Such stress may compromise the species' resilience and its capacity to recover from disturbances.	• Quota overruns of this species have not been reported between 2022–23 and 2024–25, despite the competitive PCC. The implementation of a conservative quota limit has likely mitigated the risk of overharvesting in Queensland. Furthermore, market demand is primarily driven by desirable colour morphs, with large or dull-coloured specimens deemed unsuitable for sale, reducing the likelihood of regional population declines. • Prolonged heat stress poses a threat to *H. bowerbanki*, as it does to all coral species. This risk is further heightened by the species' preference for shallow reefs, where it is more vulnerable to temperature fluctuations and associated disturbances.
Risk rating: Low (C2*L3 = 6)	

Homophyllia cf. *australis*

Consequence (C = 3)	Likelihood (L = 5)

• *H.* cf. *australis* is a solitary, large-polyp stony coral with large corallites. The entire colony is removed from the reef during commercial harvesting. • The population replenishment of this species relies solely on natural recruitment. Due to its low growth rate (Pratchett, 2024c, Pacey et al., 2023) and large polyp size, recovery through recruitment is expected to take several years. • If harvesting exceeds the rate of recruitment, it could significantly impact local populations, hinder stock replenishment and limit the species' ability to repopulate. • Pratchett et al. (2020a) reported low but consistent densities of *H* cf. *australis* on the GBR, with a moderate abundance where it was found based on surveys in Cairns, Mackay and the Keppel regions. • Pratchett (2024c) found that while *H.* cf. *australis* abundance was lower in fished areas overall, regional variations existed, with lower abundance in fished zones in the Cumberland Islands but higher abundance in fished zones in the Northumberland Islands. There is evidence of selective harvesting of larger individuals in some locations and harvesting practices may have reduced the size and abundance of this species (overall) at some locations (Pratchett, 2024b). • *H.* cf. *australis* is a specialist, which limits its ability to form widespread populations, resulting in a patchy abundance and restricted distribution. • The depth range of this species overlaps with the depths commonly accessed by commercial fishers. Some refuge exists outside the fishery area, as it has been recorded to 40 metres. A	• Natural recruitment of *H.* cf. *australis* will support population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • Timeframes for replenishment are uncertain but expected to be long due to the species' low growth rate (Pratchett, 2024c, Pacey et al., 2023). Replenishment times will also depend on environmental factors and be limited by its habitat preference as it grows in a specific ecological niche. • The abundance of *H.* cf. *australis* is uncertain, but anecdotal evidence from industry notes that it is moderately to highly abundant in specific areas of the GBR. It reportedly occurs from Pancake Creek to Cairns, with the Mackay region being a hotspot. Its distribution is patchy, with higher densities near islands and in turbid waters. • A quota overrun of *H.* cf. *australis* occurred in 2022–23 due to a race-to-fish dynamic, but the introduction of an ITQ system in 2023–24 resulted in reduced harvest levels, lowering the risk of overharvesting in Queensland. • Harvest in the top three grids has halved since 2022–23, reducing the likelihood of localised depletion. Industry reports focusing on certain areas primarily for cost-effectiveness, with concentrated efforts likely influenced by accessibility. • Market demand focuses on desirable colour morphs and small specimens, making regional population declines less likely. However, Pratchett (2024c) reported that in fished areas, *H.* cf. *australis* are smaller and exhibits less desirable colour morphs,

study by Pratchett (2024b) also observed that abundance and biomass increase with depth. • Catch rates have significantly declined since species-level quotas were introduced in 2022–23, while effort rates initially dropped sharply from 2021–22 to 2022–23 before slightly increasing through to 2024–25 (noting that harvest levels remained well below historical averages). • Recent harvest trends suggest fishers are spending more time locating marketable specimens due to restricted quotas, which have reduced allowable harvests and a need for greater selectivity. This inference though has yet to be fully tested. • The PCC limit was exceeded by 17% in 2022–23 due to a race-to-fish dynamic, leading to the implementation of an ITQ system in 2023–24. Since then, approximately 63% and 51% of the allocated quota have been utilised in the 2023–24 and 2024–25 seasons respectively. • Approximately 99% of the harvest occurred in the southern GBR, with ~75% concentrated in three fishing grids, indicating harvest is highly concentrated with a high regional focus. This intense local pressure, averaging 820 kg per year across these higher harvest grids, may have a significant impact on local populations. • *Homophyllia* cf. *australis* rarely shows visible bleaching but is highly sensitive to elevated temperatures which may result in significant mortality during marine heatwaves. Experimental studies (Pratchett et al., 2020b) revealed low bleaching rates but high mortality under elevated temperatures and high light levels, indicating that prolonged heat exposure poses a serious risk to the species' resilience and recovery.	suggesting sustained fishing pressure has reduced population size and the proportion of harvestable corals (Pratchett, 2024c). • As *H.* cf. *australis* is highly vulnerable to morality under heat stress, prolonged heat accumulation poses a considerable threat to local populations, particularly as it is only found in the southern GBR.

Risk rating: High (C3*L5 = 15)

Lobophyllia hemprichii

Consequence (C = 2)	Likelihood (L = 4)
• *L. hemprichii* is a colonial, large polyp stony coral that is harvested in fragments. Recovery through natural growth and repair following commercial harvest is unknown. Based on its inferred moderate growth rate (Arafat et al., 2022) and large polyp size, it is expected to take several years. • *L. hemprichii* is a generalist species, capable of surviving in a variety of reef habitats, likely supporting the formation of widespread populations. This species is found at depths frequently targeted by commercial fishers, but it also inhabits deeper waters, having been recorded at depths of at least 50 metres. As a result, a portion of the population is likely to remain protected from harvesting activities in these deeper, less accessible areas. • Pratchett (2024c) reported substantially lower abundance of *L. hemprichii* in fished zones compared to no-take zones, with biomass in fished areas being less than 60%[17] of that in protected zones, particularly in the Northumberland and Cumberland	• Under favourable conditions, the growth and repair mechanisms of *L. hemprichii* are expected to restore the biomass of harvested colonies, with recovery inferred to occur relatively quickly due to it's moderate to fast growth rate (Arafat et al., 2022). • While natural recruitment through broadcast spawning supports population replenishment and connectivity, the exact timeframe for full recovery on reefs remains uncertain and will be influenced by environmental factors. • Industry feedback suggests the species has high abundance in specific locations, consistent with reports it can be the dominant species in suitable habitats (Veron et al., 2016l). • While quota overruns have occurred in the past three fishing seasons, it has been minimal. Further, the quota for this species is viewed as conservative and has likely reduced the risk of overharvesting and/or localised depletion in Queensland. • Market demand focuses on desirable colour morphs, with large or dull-coloured specimens being unsuitable for sale. This

[17] Pratchett (2024c) classified localised depletion as instances where abundance or biomass in fished zones falls below 60% of that in no-take zones. This threshold was aligned with the broader, more generalised, Maximum Economic Yield (MEY) targets outlined in the Queensland Sustainable Fisheries Strategy (SFS) (Department of Agriculture and Fisheries, 2017).

Islands. Abundance and biomass appeared to remain consistent with depth. • The *L. hemprichii* PCC limit was exceeded by ~6%, ~2% and <1% in 2022–23, 2023–24 and 2024–25, highlighting potential issues relating to overharvesting and the subsequent impacts on local and/or regional populations. • From 2022–23 to 2024–25, approximately 80% of the harvest occurred in the southern GBR and 20% in the northern GBR. 60% of the total harvest originates from three fishing grids. This data suggests that the harvest patterns for *L. hemprichii* are moderately concentrated with a high regional focus. • The thermal tolerance and bleaching susceptibility of *L. hemprichii* is currently unknown. When the bleaching threshold for *L. hemprichii* is exceeded, it is expected to undergo heat stress, leading to bleaching and in severe cases, mortality, similar to other coral species.	indicates that a proportion of the regional population remains *in-situ*, helping to reduce the risk of regional population declines. • Prolonged heat accumulation presents a threat to local populations of *L. hemprichii*, increasing the risk of bleaching and mortality, reducing its resilience and ability to recover.
Risk rating: Moderate (C2*L4 = 8)	

Micromussa lordhowensis

Consequence (C = 4)	Likelihood (L = 4)
• *M. lordhowensis* is a colonial, large polyp stony coral harvested in fragments. Recovery through natural growth and repair following commercial harvest is unknown, and it expected to take a long time due to its medium polyp size and low growth	• The biomass of harvested *M. lordhowensis* colonies is expected to recover gradually due to its inherently low growth rate (Wilson and Harrison, 2005). However, anecdotal evidence suggests that under ideal captive conditions, growth rates may reach up to 20

rate, in the field (Wilson and Harrison, 2005) and in captive conditions (2026 ERA Workshop, Cairns, 23 April 2026). • *M. lordhowensis* is an endemic, specialist coral that occupies a specific ecological niche in sub-tropical habitats. This may limit its ability to form widespread populations, resulting in a patchy abundance. • The depth range of *M. lordhowensis* overlaps with areas commonly accessed by commercial fishers. *M. lordhowensis* populations are highly accessible to fishing and have limited refuge opportunities within the fishery. • Pratchett et al. (2020a) documented a low abundance of *M. lordhowensis* in targeted surveys conducted across Queensland. Pratchett (2024c) reported significantly lower abundance and biomass of *M. lordhowensis* in fished zones compared to no-take zones, with biomass in fished areas being less than 60%[18] of that in protected zones, particularly in the Northumberland Islands, which contributed most to the overall differences. The average size of individuals was also smaller in fished areas, likely due to the species being harvested in fragments. Additionally, *M. lordhowensis* abundance was found to decline with depth, with the highest concentrations observed at depths of 5 to 7 metres, indicating a preference for shallow reef environments that may heighten their vulnerability to fishing pressures. • In 2022–23 the *M. lordhowensis* PCC limit was slightly exceeded. An ITQ system was subsequently implemented in 2023–24, with	mm per year, indicating the potential for faster recovery in favourable environments. • While natural recruitment through broadcast spawning supports population replenishment and connectivity, the exact timeframe for full recovery on reefs remains uncertain and depends on various environmental factors. Recovery is further constrained by the species' reliance on a specific ecological niche. • While uncommon, anecdotal evidence suggests that *M. lordhowensis* is abundant in suitable habitats within the southern GBR, particularly between Pancake Creek and the Keppel Islands. • While a quota overrun of *M. lordhowensis* occurred in 2022–23, the introduction of an ITQ system reduced harvest levels and further mitigated the risk of overharvesting. Additionally, market demand is primarily for specific colour morphs and smaller specimens, which reduces the risk of overharvesting at a regional level. However, the ITQ allocation, based on historical catch data, may not align with sustainable limits. Additionally, the absence of measures to prevent localised depletion could threaten local populations. • As *M. lordhowensis* is highly vulnerable to bleaching under heat stress, prolonged heat accumulation poses a considerable threat to local populations, particularly as it is only found in the southern GBR. Its preference for shallow reefs further

[18] Pratchett (2024c) classified localised depletion as instances where abundance or biomass in fished zones falls below 60% of that in no-take zones. This threshold was aligned with the broader, more generalised, Maximum Economic Yield (MEY) targets outlined in the Queensland Sustainable Fisheries Strategy (SFS) (Department of Agriculture and Fisheries, 2017).

63% and 41% of the allocated quota utilised in the 2023–24 and 2024–25 seasons. Pratchett (2024c) noted that "*current estimates of relative abundance and biomass across the eight focal species do not support higher harvest limits of Micromussa lordhowensis relative to other species*", and sustainable catch rates must account for interspecific biological differences. • From 2022–23 to 2024–25, approximately 99% of the harvest occurred in the southern GBR. 60% of the total harvest originates from three fishing grids. This data indicates that the harvest patterns for *M. lordhowensis* are moderately concentrated with a high regional focus. This raises concerns about the sustainability, resilience, and recovery potential of local populations under locally concentrated fishing pressure. • Pratchett et al. (2020b) conducted an experimental study revealing that *M. lordhowensis* is highly vulnerable to environmental changes, exhibiting the highest bleaching incidence among the specialty coral species and experiencing over 80% mortality under elevated temperatures and intense light conditions. This species predominantly inhabits high-latitude reefs in cooler waters (Arrigoni et al., 2016), which may account for its heightened susceptibility to heat stress.	exacerbates its vulnerability, making such impacts likely in the current fishing environment.
Risk rating: High (C4*L4 = 16)	

Plerogyra sinuosa

Consequence (C = 2)	Likelihood (L = 3)
• *P. sinuosa* is a colonial, large-polyp stony coral. Small, whole colonies are harvested during commercial collection due to their	• Natural recruitment of *P. sinuosa* will further support population replenishment through broadcast spawning, which enables

fragility and the need to maintain quality and reduce post-harvest mortality. Large colonies are not harvested as they cannot be fragmented. • Recovery through natural recruitment is the primary mechanism for population replenishment, but growth rates are unknown, and recovery timeframes remain uncertain. • The reported depth range of this species almost entirely overlaps with areas commonly accessed by commercial fishers in the QCF. This makes populations highly accessible to regional coral collectors. • From 2022–23 to 2024–25, the mean annual harvest of *P. sinuosa* was 335 kg, with 57% of the total harvest originating from the top three fishing grids. Regional catch distribution indicates that 25% of the harvest occurred in the northern GBR, 1% in the central GBR, and 74% in the southern GBR. • Data indicates that the harvest patterns for *P. sinuosa* are moderately concentrated with a high regional focus. Populations located in the southern GBR region will experience the highest concentration of effort. • *P. sinuosa* has been reported to be stress-tolerant (Darling et al., 2012), which may reduce risks to local populations during mild disturbance events. Bleaching susceptibility for *P. sinuosa* will vary by region / environmental conditions and is not well resolved for this species in the GBR. • Prolonged exposure to heat stress increases the risk of bleaching and mortality, reducing the species' resilience and recovery capacity.	larval dispersal via ocean currents to establish new colonies while enhancing connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). The timeframe for full recovery on reefs remains uncertain and depends on various environmental factors. • While the coral trait database classifies *P. sinuosa* as uncommon (Díaz and Madin, 2010, Veron, 1986), industry feedback indicates that *P. sinuosa* is highly abundant in suitable habitats, particularly around the islands near Mackay, where colonies are noted as highly abundant (Roelofs, 2013) (Industry representatives, pers. comm. 2026). Colonies are reportedly found in large numbers in collection areas, suggesting the species may be more prevalent in certain regions than previously documented. • Total harvest of *P. sinuosa* remain well below the species-specific PCC of 600 kg, with the mean annual harvest from 2022–23 to 2024–25 recorded at 335 kg. The selective nature of harvesting, which focuses on small colonies and specific colour variants, reduces the likelihood of overharvesting and population declines. It is unknown how this may impact the genetic diversity of the species. • Prolonged heat stress poses a threat to *P. sinuosa*, as it does to all coral species. This risk is exacerbated by the increasing frequency and intensity of marine heatwaves and disturbance events on the GBR, which increases the likelihood of bleaching and mortality.

Risk rating: Low (C2*L3 = 6)

Trachyphyllia geoffroyi

Consequence (C = 2)	Likelihood (L = 3)
• *T. geoffroyi* is a solitary species, with the entire colony removed from the reef during commercial harvest. This means population replenishment will depend entirely on natural recruitment. • Due to its low growth rate (Pratchett et al., 2020a, Pratchett, 2024c) and large polyp size, recovery through recruitment and growth to a harvestable size may take several years, potentially having a more significant impact on local populations. This could hinder the replenishment of stocks and limit their ability to repopulate. • Pratchett et al. (2020a) reported *T. geoffroyi* to be relatively abundant where it was found during transect surveys in some locations of the GBR. • The recent localised status assessment by Pratchett (2024b) recorded *T. geoffroyi* in just two of six sampling areas on the GBR, but it was abundant where it was found. However, this study also reported that the abundance in fished areas was less than 60%[19] of that in protected zones in Northern Shoalwater Bay, suggesting regional variation. Pratchett (2024c) reported a higher abundance of *T. geoffroyi* compared to previous reports,	• Natural recruitment of *T. geoffroyi* supports population replenishment, as broadcast spawning promotes larval dispersal, facilitating the establishment of new colonies and strengthening connectivity and gene flow among metapopulations (Meziere et al., 2025, Thomas et al., 2019). • The estimated timeframe for full recovery and replenishment is unknown and is likely to vary depending on environmental factors. The replenishment of *T. geoffroyi* stocks is also limited by habitat, as it grows in a specific ecological niche. • While a quota overrun occurred in 2022–23, the implementation of an ITQ resulted in the subsequent decline in harvest for *T. geoffroyi*. These measures have reduced the risk of overharvesting in Queensland. The WG notes that market demand is primarily for desirable colour morphs and small specimens. Large or dull-coloured specimens are unsuitable for sale, making overharvesting to the point of regional population declines unlikely. • The long-term recruitment and population dynamics of *T. geoffroyi* are unlikely to be adversely impacted by mild, seasonal

[19] Pratchett (2024c) classified localised depletion as instances where abundance or biomass in fished zones falls below 60% of that in no-take zones. This threshold was aligned with the broader, more generalised, Maximum Economic Yield (MEY) targets outlined in the Queensland Sustainable Fisheries Strategy (SFS) (Department of Agriculture and Fisheries, 2017).

highlighting the species is abundant in suitable habitats, with density varying between regions. The report also questioned the relevance of the current 701kg catch limit. • The reported depth range of *T. geoffroyi* overlaps with the depths commonly accessed by commercial fishers. However, the species occurs at depths of up to 65 metres and would be afforded a degree of natural protection from fishing activities. • *T. geoffroyi* is considered a specialist species that occupies a specific ecological niche, which may contribute to a patchy abundance and distribution. However, industry stakeholders disagree with this, suggesting that the species is more widespread and occurs across a variety of habitats. • The PCC limit for *T. geoffroyi* was exceeded by 5.96% in 2022–23, prompting the introduction of an ITQ system in 2023–24. Since the adoption of the ITQ, ~59% and 48% of the allocated quota has been utilised during the 2023–24 and 2024–25 fishing seasons, consecutively. • Approximately 84% of the reported harvest from 2022–23 to 2024–25 occurred in the southern GBR, with over 86% concentrated in three fishing grids. This data indicates that harvest patterns for *T. geoffroyi* are highly concentrated and that fishing pressures could affect the resilience and recovery potential of local populations in the southern GBR. • An experimental study conducted by Pratchett et al. (2020b) found that *T. geoffroyi* is susceptible to bleaching when exposed to elevated temperatures in captive conditions. Despite this, mortality rates were low, suggesting that this species is resilient	heat accumulation. However, prolonged heat stress may increase the risk of bleaching, potentially reducing the species' resilience and recovery capacity. While the increasing frequency of marine heatwaves and disturbance events on the GBR significantly raises the risk of localised bleaching, this species' resilience during heat stress and its presence in deep, inter-reef habitats may moderate the impacts of heat stress.

to shifts in temperature and will have a higher capacity for recovery after marine heatwaves.	
Risk rating: Low (C2*L3 = 6)	

Appendix 8 – Workshop attendees, 23 April 2026, Cairns

Meeting		Marine aquarium fish and coral fisheries working group	
Meeting No	11	Date	23 April 2026
Location	Northern Fisheries Centre, Cairns Microsoft Teams	Time	9:00 – 16:15
Members present	A/**Chair** – Jeffrey Ikin **Fisheries Queensland** – Christelle Legrand, Brenda Stevenson **Reef Authority**– Dr Martina Prazeres **Commercial** – Daniel Kimberley, Caleb Cousland, Dean Pease, Alex Tindall, Lyle Squire, Ros Patterson **Science/Research** – Randall Owens		
Observers	**Fisheries Queensland** – Jasmine Morton, Ian Jacobsen **Queensland Museum** – Dr Tom Bridge **James Cook University** – Rachel Neil		
Apologies	Jackson Cranitch (Chair)		