Department of Agriculture and Fisheries

Sustainable Fisheries Strategy 2017–2027

Queensland Coral Fishery

Scoping Study

Queensland Government

This publication has been compiled by Fisheries Queensland, Department of Agriculture and Fisheries

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Fishery Summary

Note—All information contained in the Queensland Coral Fishery (QCF) Scoping Study is correct as of 1 May 2022. However, the broader QCF management regime is undergoing a significant review and management and monitoring systems employed in the QCF are subject to change. Consult the Fisheries Act 1994, Subordinate legislation the Marine Aquarium Fish and Coral Fisheries Working Group correspondence for the up-to-date information on the management of this fishery.

Feature	Details
Species targeted	A diverse range of hard corals, soft corals and anemones from various families and genera.
Fisheries symbols	D
Fisheries legislation	*Fisheries Act 1994; Fisheries (General) Regulation 2019; Fisheries (Commercial Fisheries) Regulation 2019; Fisheries Declaration 2019; Fisheries Quota Declaration 2019.*
Working Group	*Marine Aquarium Fish and Coral Fisheries Working Group*. Working group terms of reference and communiques available at: https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups
Harvest Strategy	In effect as of September 2021. ** The Coral Fishery Harvest Strategy 2021–2026 is being reviewed and subject to change.* The most up-to-date harvest strategies can be accessed at: https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/harvest-strategy
Gear	The following apparatus are currently permitted for use within the commercial Queensland Coral Fishery: • Hand collection, hand-held non-mechanical implements using approved underwater breathing apparatus (hookah, SCUBA, free dive) A restricted take of coral for non-commercial purposes is permitted in some regions. Non-commercial sectors are limited to hand collection (excluding hookah / SCUBA), subject to extensive spatial restrictions and require additional approvals in state and commonwealth marine parks. *A full description of the types of apparatus prescribed for each fishery symbol can be found in the Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019,* and *Fisheries Declaration 2019.*
Main management methods	*Commercial* • Limited entry • Gear restrictions • Individual Transferable Quotas (ITQ) • Vessel & tender restrictions • Number of divers ‘to take’ restrictions

Feature	Details
	• Spatial closures
Quota (assessed annually)	200 t Total Allowable Commercial Catch
Fishing season	1 July–30 June
Commercial fishery licences	Number of D symbols: 59
Total annual harvest by sectors	Commercial: 99.5t (comprised of 46.5t ‘Specialty Coral’, 53t ‘Other Coral') Harvest by Recreational sector and Aboriginal and Torres Strait Islander peoples: Unknown
GVP	$14.6 million (2018–19), 84 per cent of corals are exported
Stock status	No indicative sustainability estimates (*i.e.,* SAFS). However, several species have conservation assessments or listings under international instruments like CITES.
Accreditation under the *EPBC Act* (Part 13 & 13A)	Part 13A: Accredited (expires 28 October 2024) Part 13: Accredited

1 Overview

The Queensland Coral Fishery (QCF) is a quota-managed, hand-collection fishery that primarily operates within the confines of the Great Barrier Reef Marine Park (GBRMP). A restricted harvest of corals is also permitted in two small areas of south-east Queensland (Figure 1). Operators collect a range of hard corals, soft corals and anemones for the live aquarium trade and the majority are exported for sale on international markets. Collection can include the harvesting of whole or parts of a coral colony depending on the species.

Commercial coral collection includes the use of hand-held implements on scuba and 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. While the use of this symbol is managed under fisheries legislation, commercial operations are also subject to provisions governing the use of resources within state and commonwealth marine parks. For example, around 38 per cent of the GBRMP is closed to coral collection (Great Barrier Reef Marine Park Authority, 2018).

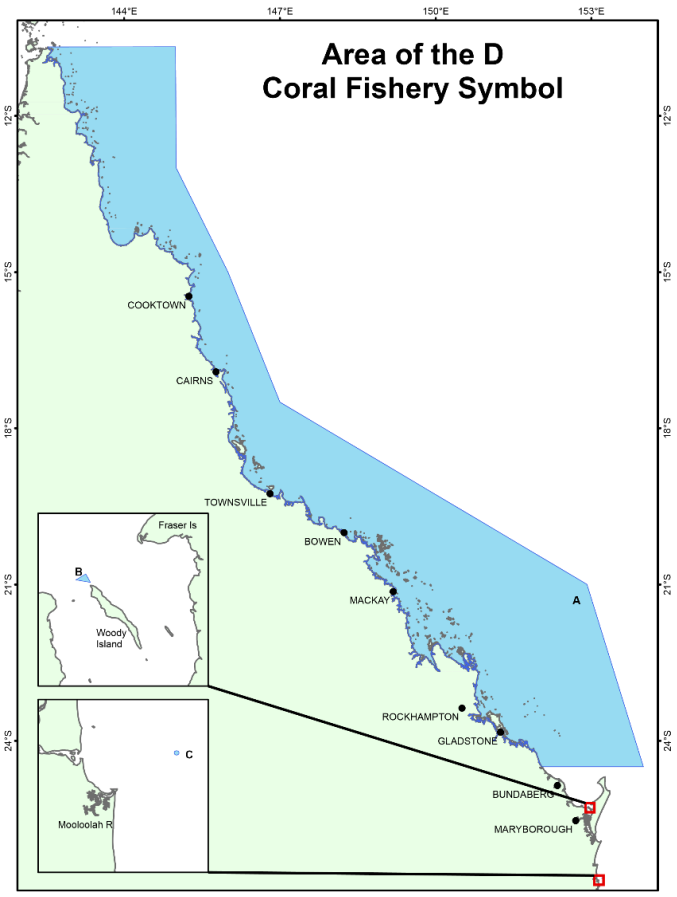

***Figure 1**. The prescribed fishing area for the Queensland Coral Fishery (QCF). Refer to the Fisheries (Commercial Fisheries) Regulation 2019.*

Coral harvest in the QCF is managed under a Total Allowable Commercial Catch (TACC) limit. This limit is split unevenly between two categories: 'Speciality Coral' and 'Other Coral' (live rock, coral rubble, and ornamental coral). These long-term limits are now the subject of an ongoing review instigated as part of the *Queensland Sustainable Fisheries Strategy 2017–2027* and export approvals process. This review (among other things) will determine the benefits of transitioning the fishery to a more refined system of output controls (Department of Agriculture and Fisheries, 2017; 2020; Department of Agriculture Water and the Environment, 2021).

Limited information is available on the harvest of corals in non-commercial sectors, namely by researchers, recreational fishers and Aboriginal peoples and Torres Strait Islander peoples. The recreational sector is subject to gear restrictions with collectors only permitted the use of mask and snorkel. The use of a hookah and SCUBA apparatus for recreational coral collection is not permitted, and the non-commercial take of coral is not allowed in the GBRMP and state marine parks without a permit (Department of Agriculture and Fisheries, 2021b; Great Barrier Reef Marine Park Authority, 2022).

2 Legislation & advisory bodies

Management of the QCF is enforced through the *Fisheries Act 1994* (Queensland) and subordinate legislation *i.e.,* the *Fisheries (General) Regulation 2019*, *Fisheries (Commercial Fisheries) Regulation 2019*, *Fisheries Declaration 2019,* and *Fisheries Quota Declaration 2019*. The QCF is also managed in accordance with a fisheries-specific harvest strategy (Department of Agriculture and Fisheries, 2021b).

The *Queensland Coral Fishery Harvest Strategy 2021–2026* was implemented in September 2021 and established clear objectives for the long-term management of this fishery. The harvest strategy includes a transparent process for measuring and managing the performance of the fishery over a 5-year period, provisions / decision rules to manage harvest rates, and a monitoring and management framework for key species and genera. Additional information on provisions contained within the harvest strategy can be found at: https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/harvest-strategy.[1]

A *Marine Aquarium Fish and Coral Fisheries Working Group* (FWG) assists with the management of the fishery and includes a wide range of stakeholders from the scientific community and management agencies. While the terms of reference of the FWG are more intricate, the primary objectives of the working group are to:

1. assist with the implementation of a coral harvest strategy and marine aquarium fish harvest strategy, including providing advice on management options and fishing rules, consistent with the *Queensland Harvest Strategy Policy* and the *Fisheries Act 1994*; and

2. provide general advice to Fisheries Queensland on any operational matters, emerging issues, and general management of QCF and Marine Aquarium Fish Fishery (MAFF).

Further information regarding the FWG, including communiques are available at: https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups.

3 Harvest, effort and participation rates

While coral collection has an extensive history on the Queensland east coast (Daley & Griggs, 2008), data collected from 2006/07 onwards provides a more accurate indication of how the fishery operates. For this reason, evaluations of long-term harvest, effort levels, and participation rates are frequently restricted to just this period.

Data compiled from the 2006/07 – 2020/21 period displayed a degree of variability in terms of the number of operators that accessed the fishery and the overall level of effort (Table 1). There has, however, been a general and progressive increase in both indices since 2006/07 (Table 1). The most notable of these increases occurred over the last three years with participation rates (*i.e.* the number of active licences) and effort (days fished) peaking in 2019/20 and 2020/21 respectively (Table 1; Figure 2).

[1] *The Queensland Coral Fishery Harvest Strategy 2021–2026 is being reviewed. When and where appropriate, updated versions of the QCF harvest strategy will be made available to the public through the Department of Agriculture and Fisheries website (https://www.daf.qld.gov.au/)*

While participation rates and annual effort showed a general increase, trends in the harvest rate data were less clear. Total harvest fluctuated between 74 and 110 t, with most years reporting between 85 and 100 t (Table 1). Part of this variability can be attributed to natural variations in the size and quantity of the organisms being retained *i.e.,* specialty live corals, ornamental corals, coral pieces or fragments and live rock (dead coral skeletons with algae / other organisms living on them). However, this natural variability has been compounded by limitations in the previous harvest-rate reporting system. This system was used from 2006/07 to 2015/16 and estimated harvest weights from corals assigned to different size categories (*i.e.* number of pieces). This system is less suited to estimating harvest weights and may have inadvertently contributed to reporting inaccuracies and an under-reporting of quota usage (Department of Agriculture and Fisheries, 2016; Pratchett, 2021).

From 2016/17, the QCF adopted a more effective method for reporting total harvest weights. This system relies on the direct reporting of coral weights and has been refined and built upon in recent years. Fishers are now required to report harvest weights through a range of measures including logbooks, an Automated Integrated Voice Response (AIVR) system and catch disposal records (Department of Agriculture and Fisheries, 2021a). As weight reports remain at the quota management unit, this data has poor species resolution. However, the construct of this reporting system is being reviewed with the aim being to improve the quality and value of harvest weight data.[2]

When compared to annual harvest rates (Figure 2b), observed increases in the number of retained pieces were more pronounced (Table 1). In 2006/07 the fishery retained almost 91 000 pieces of coral. By 2020/21, this figure had increased to over 600 000 pieces (Table 1). This increase suggests that the dynamics of the fishery have shifted through time with operators retaining larger quantities of smaller corals, micro-communities, and coral fragments. Likely reasons for this shift include changing market demands; improved collection techniques; improved operating procedures for export; and advancements in post-harvest propagation. These operational shifts partly reflect the dynamic and reactive nature of the fishery.

Table 1. *Summary of the fishing dynamics in the QCF for the 2006/07 – 2020/21 period (inclusive).*

Fin. Year	Licences	Effort (days)	Fin. Year Harvest	
			No. Pieces	Total (t)
2006-07	26	663	90 662	84.6
2007-08	23	814	145 149	100.2
2008-09	25	794	171 439	87.2
2009-10	29	796	180 807	78.6
2010-11	26	823	208 961	74.5
2011-12	30	715	225 744	74.1
2012-13	33	792	264 687	89.9
2013-14	34	840	285 669	98.8
2014-15	33	889	305 525	93.3
2015-16	36	964	333 834	88.4
2016-17	32	858	316 052	80.8
2017-18	32	858	351 801	84.6
2018-19	37	1203	496 537	110.6
2019-20	42	1693	585 600	94.4
2020-21	37	1757	620 988	99.5

[2] *The management regime for the QCF is being reviewed as part of the Queensland Sustainable Fisheries Strategy 2017–2027 and WTO approvals process. While not universal, this review is examining mechanisms that will allow the coral harvest to be managed, monitored, and reported on at a finer scale.*

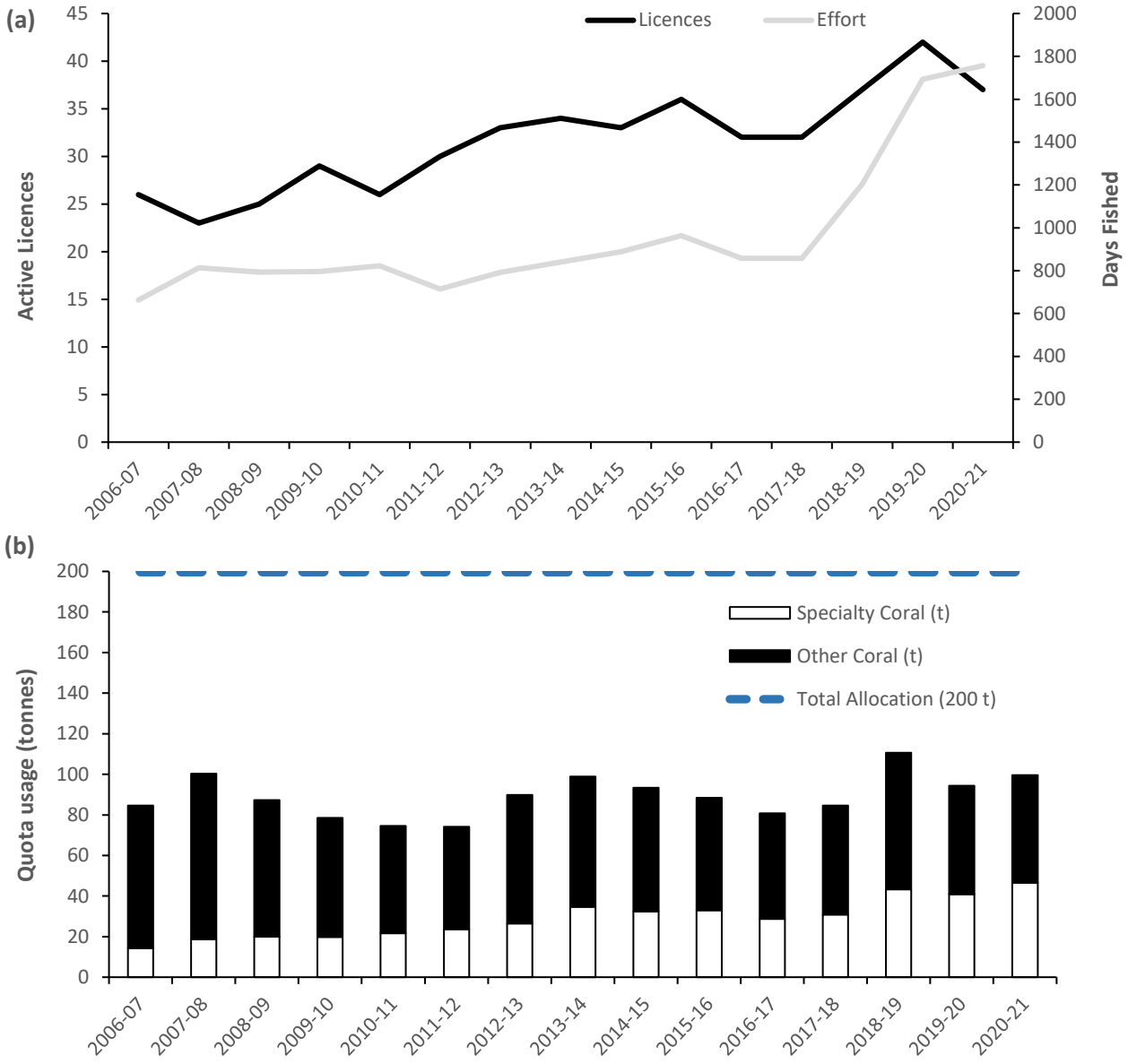

Figure 2. *Summary statistics for the Queensland Coral Fishery: (a) participation rates (active licences*) and effort usage (days fished) and b) annual harvest rates (t) compared to the combined TACC limit. *An 'active licence' represents any licence with a 'D' fishery symbol that has reported catch form the fishery during a given season.*

Across the timeframe, increasing coral piece numbers exerted variable influence on the harvest weight data (Table 1). Cross-comparisons suggest that more recent increases in coral piece numbers (*i.e.* the post 2015/16 period) contributed to the observed increase in harvest weight totals (Table 1; Fig. 2). A proportion of this increase though can be attributed to the introduction of an improved catch reporting system (see above) and the collection of more accurate harvest weights.

At a species-specific level, the consequences of the fishery harvesting increasing coral piece numbers is more difficult to quantify. This is because the extent of any impacts (*e.g.* none, small, large) will be dependent on a range of factors including the species being harvested, the size of coral piece compared to colony (if applicable), life-history or distributional constraints, targeting intensity, data deficiencies and the ability of management to accurately convert piece numbers to weight (Pratchett *et*

al., 2020a). The extent of these impacts will be further influenced by a range of confounding factors including coral bleaching, population irruptions of crown-of-thorns starfish and other escalating human pressures (Pratchett *et al.*, 2020a; Pratchett *et al.*, 2020b; Pratchett, 2021).

Across the fishery, harvest rates are primarily managed through a 200 t TACC limit. This limit is subdivided between two generalised groups: 'Specialty Coral' (60 t) and 'Other Coral' (140 t) (Table 2). Since the inception of quota, annual harvests in the QCF have remained below all three TACC limits (*i.e.,* the fishery-wide, 'Specialty Coral' and 'Other Coral' TACC). There are, however, some key nuances that provide further insight into long-term fishing patterns. For example, harvest rates for 'Specialty Coral' have increased progressively from 14.3 t to 46.5 t (Table 2). This increase is counterbalanced by a corresponding, albeit less uniform, decrease in the 'Other Corals' harvest. This in part reflects a shift from the collection of live rock and display corals towards live corals for the aquarium trade (*pers. comm.* J. Keys; Table 2; Figure 2b).

When compared, the 'Other Coral' quota management group still makes the greatest contribution to the total coral harvest. However, the discrepancy between the two management subgroups is narrowing with less than 7 t separating annual harvest values reported for the 'Specialty Coral' and 'Other Coral' quota management units (Table 2). If this trend were to continue, expectations are that harvest levels within the two quota management units will reach parity in the coming years. The likelihood of this occurring will depend on a range of confounding factors including market demand and reforms implemented as part of the ongoing review into the management of the QCF.[3]

4 Species compositions

4.1 Target species

Corals are primitive animals that belong to the Phylum Cnidaria, which also includes hydroids, jellyfish, and sea anemones. Corals targeted for the aquarium trade include a diverse range of mainly hard and soft corals, as well as sea anemones. Of these, Class Anthozoa has one of the highest representations with an estimated 80 different species being retained in the fishery. While not universal, retained corals generally consist of small colonies or large-polyped species which survive well in captivity. Collection intensities for these species are frequently dictated by market demand which is often determined by size and appearance (Pratchett *et al.*, 2020a).

Historical data for the QCF has poor species resolution with a high proportion reported at a genus or family level (Table 3). These limitations are intimately linked to the complex nature of coral taxonomy and the associated difficulties of reporting their harvest to species level. These deficiencies are being actively addressed through the logbook system and operators are now required to report a greater proportion of the harvest to species level.[4] The fishery will also commence work introducing a program to characterise the composition of species reported to genus level.[5] This research will provide further insight into the operating environment and inform discussions surrounding the long-term harvest of key species.

[3] *Management of the QCF is being reviewed. This review will examine mechanisms that will allow the coral harvest to be managed, monitored, and reported on at a finer scale.*

[4] *A new logbook (CS06) and reporting requirements came into effect on 1 October 2021.*

[5] *Refer to Condition 5 of the current WTO approval.*

Table 2. *Quota usage comparisons across the entire QCF, the 'Specialty Coral' subgroup and the 'Other Coral' subgroup.*

Fin. Year	*Specialty Coral*			*Other Coral*			*Whole QCF*		
	Harvest (t)	**TACC (t)**	**% Usage**	**Harvest (t)**	**TACC (t)**	**% Usage**	**Harvest (t)**	**Total (t)**	**% Used**
2006-07	14.3	60	24%	70.3	140	50%	84.6	200	42.3
2007-08	18.6	60	31%	81.6	140	58%	100.2	200	50.1
2008-09	20.0	60	33%	67.3	140	48%	87.2	200	43.6
2009-10	19.9	60	33%	58.7	140	42%	78.6	200	39.3
2010-11	21.6	60	36%	52.9	140	38%	74.5	200	37.2
2011-12	23.6	60	39%	50.5	140	36%	74.1	200	37.1
2012-13	26.4	60	44%	63.5	140	45%	89.9	200	44.9
2013-14	34.7	60	58%	64.2	140	46%	98.8	200	49.4
2014-15	32.5	60	54%	60.9	140	44%	93.3	200	46.7
2015-16	33.0	60	55%	55.4	140	40%	88.4	200	44.2
2016-17	28.8	60	48%	52	140	37%	80.8	200	40.4
2017-18	30.8	60	51%	53.8	140	38%	84.6	200	42.3
2018-19	43.4	60	72%	67.3	140	48%	110.6	200	55.3
2019-20	40.9	60	68%	53.6	140	38%	94.4	200	47.2
2020-21	46.5	60	78%	53	140	38%	99.5	200	49.8

Note—Output controls used in the QCF are being reviewed and are the subject of a significant reform process. These reforms will transition the fishery to a finer-scale output control system that relies more extensively on species-specific quotas and/or the use of fine-scale TACC limits. These reforms are ongoing and are intimately linked to Condition 6 of the Wildlife Trade Operation (WTO) approval. These reforms will make a significant difference in how the corals are harvested within a given season.

Quota management reforms will be complimented by reforms involving the coral harvest reporting systems. This change, combined with finer-scale reporting of species compositions, will improve managements capacity to monitor harvest rates against catch limits and reference points.

While improvements are being made towards finer-scale reporting systems, current reporting of catch to genus level is still acceptable for some species/subgroups; as reflected in the WTO export approval conditions (Department of Agriculture Water and the Environment, 2021). A more comprehensive breakdown of the catch compositions, including regional breakdowns, has been provided in the latest WTO agency submission (available at: https://www.awe.gov.au/environment/marine/fisheries/qld/coral).

Table 3. *Species composition summary for the Queensland Coral Fishery based on information compiled through the CS05 logbook.*

Fin. Year	Quota Descriptor	Reporting Category	Harvest (t)
2016-17	*Other Coral*	*Acroporidae/Pocilloporidae* corals	20.0
		Live Rock & Coral Rubble	29.8
		Soft corals	2.2
	Specialty Coral	Hard corals	28.7
		Sea anemones	0.1
2017-18	*Other Coral*	*Acroporidae/Pocilloporidae* corals	24.6
		Live Rock & Coral Rubble	27.8
		Soft corals	1.4
	Specialty Coral	Hard corals	30.7
		Sea anemones	0.1
2018-19	*Other Coral*	*Acroporidae/Pocilloporidae* corals	34.8
		Live Rock & Coral Rubble	28.4
		Soft corals	4.0
	Specialty Coral	Hard corals	43.2
		Live Rock & Coral Rubble	0.0
		Sea anemones	0.1
2019-20	*Other Coral*	*Acroporidae/Pocilloporidae* corals	34.1
		Live Rock & Coral Rubble	18.0
		Soft corals	1.5
	Specialty Coral	Hard corals	40.7
		Sea anemones	0.1
2020-21	*Other Coral*	*Acroporidae/Pocilloporidae* corals	22.3
		Live Rock & Coral Rubble	28.1
		Soft corals	2.7
	Specialty Coral	Hard corals	46.4
		Sea anemones	0.1

4.2 Bycatch / non-target species

Due to the highly selective nature of hand-collection fishing, methods used in the QCF produce minimal bycatch and have negligible impacts to the broader ecosystem. While interactions with Threatened, Endangered and Protected (TEP) species are monitored through a dedicated logbook (Queensland Government, 2018), none have been reported from this fishery.

5 Assessment history

A qualitative Ecological Risk Assessment (ERA) examining fishing-related risks in the QCF was first completed in 2008 (Roelofs & Silcock, 2008). This ERA was informed by a separate Vulnerability Assessment (VA) and both were updated in 2013 (Roelofs, 2013; 2018). The original ERA can be accessed at: https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/data/ecological-risk-assessments. The updated VA and ERA have also been made available through the Department of Agriculture and Fisheries *eResearch Archive* (https://era.daf.qld.gov.au/).

The management regime for the QCF has undergone considerable change since the completion of the original ERA and the subsequent update (Roelofs & Silcock, 2008; Roelofs, 2013; 2018). These changes include the introduction of a fisheries-specific harvest strategy to manage the longer-term sustainability risks to key species (Department of Agriculture and Fisheries, 2021b; c; Department of Agriculture Water and the Environment, 2021). Harvest rates for key species and genera are also being reviewed as part of the current WTO cycle, with greater emphasis being placed on quotas based at the species or subgroup level.

The above advancements combined with increased harvest rates (Table 1; Fig. 2) will influence the construct of risk profiles for each species. This fact is reflected in the current WTO approval which requires an updated ERA to be completed for the fishery by 30 June 2022. For the 2022 ERA update, the fishery will move towards a staged assessment approach. Under this approach, risk assessment updates will be prioritised for species listed under key instruments *e.g.* the harvest strategy, Attachment B of the WTO and in expert advice on the management of the fishery (Department of Agriculture and Fisheries, 2021b; Department of Agriculture Water and the Environment, 2021; Pratchett, 2021; Department of Agriculture and Fisheries, 2022).

These initial assessments will be built on through subsequent ERAs examining the risk posed to other species targeted in the fishery. As part of this process, the QCF will consider changes to the QCF management regime, up-to-date catch data and information contained in ancillary reports on the health and status of coral stocks targeted and retained as part of the aquarium trade (*e.g.* Pratchett *et al.*, 2020a; Pratchett *et al.*, 2020b; Pratchett, 2021).

6 References

Daley, B. & Griggs, P. (2008). 'Loved to Death': Coral Collecting in the Great Barrier Reef, Australia, 1770-1970. *Environment and History* **14**, 89-119.

Department of Agriculture and Fisheries (2016). *Policy for the management of the Coral Fishery 2016*. Department of Agriculture and Fisheries, Queensland Government.

Department of Agriculture and Fisheries (2017). *Queensland Sustainable Fisheries Strategy 2017–2027*. Available at https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy-overview (Accessed 13 October 2020).

Department of Agriculture and Fisheries (2020). Queensland Fisheries Harvest Strategy. Available at https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/harvest-strategy (Accessed 9 October 2020).

Department of Agriculture and Fisheries (2021a). *Commercial Fishing Rules*. Available at https://www.daf.qld.gov.au/business-priorities/fisheries/commercial/commercial-fishing-rules (Accessed 30 March 2022).

Department of Agriculture and Fisheries (2021b). *Coral Fishery Harvest Strategy: 2021-2026*. Queensland Government. Brisbane, Queensland.

Department of Agriculture and Fisheries (2021c). *Queensland Coral Fishery Implementation Plan*. Queensland Government. Brisbane, Australia.

Department of Agriculture and Fisheries (2022). *Queensland Coral Fishery. Consultation on Management Action to Implement WTO Conditions of Approval: Discussion Paper*. Fisheries Queensland. Brisbane, Queensland.

Department of Agriculture Water and the Environment (2021). *Queensland Coral Fishery: Current Decisions*. Available at https://www.awe.gov.au/environment/marine/fisheries/qld/coral (Accessed 18 November 2021).

Great Barrier Reef Marine Park Authority (2018). Overview of the RAP. Available at http://www.gbrmpa.gov.au/our-work/our-programs-and-projects/rap (Accessed 30 May 2019).

Great Barrier Reef Marine Park Authority (2022). *Collecting*. Available at 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).

Pratchett, M. (2021). *Expert advice for the assessment of Australian coral fisheries – Queensland Coral Fishery 2006-2007 to 2019-2020*. Department of Agriculture, Water and the Environment. Canerra, Australia.

Pratchett, M., Caballes, C., Messmer, V., Wilson, S. K., Roelofs, A., Penny, S., Kelley, R. & Newman, S. (2020a). *Vulnerability of commercially harvested corals to fisheries exploitation versus environmental pressures*. James Cook University. Townsville: Corporation, F. R. a. D.

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* **39**, 663-673.

Queensland Government (2018). Commercial Fishing Logbooks. Available at https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/monitoring-reporting/requirements/logbooks (Accessed 6 June 2020).

Roelofs, A. (2013). *A review of the vulnerability assessment of coral taxa collected in the Queensland Coral Fishery*. Department of Agriculture and Fisheries. Brisbane, Australia.

Roelofs, A. (2018). *Ecological Risk Assessment of the Queensland Coral Fishery 2013*. Queensland Department of Agriculture and Fisheries. Brisbane, Australia.

Roelofs, A. & Silcock, R. (2008). *A vulnerability assessment of coral taxa collected in the Queensland Coral Fishery*. Department of Primary Industries and Fisheries. Brisbane, Australia.