

# Sustainable Fisheries Strategy

2017–2027

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## Queensland Coral Fishery

Status report for reassessment and approval under protected species and export provisions of the *Environment Protection and Biodiversity Conservation Act 1999*

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# 1 Introduction

On 18 June 2021, the Queensland Coral Fishery (QCF) was declared as an approved Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999* until 30 October 2021. This submission constitutes an application for reassessment of the current WTO for the QCF. The submission has been prepared according to requirements of the Australian Government's *Guidelines for the Ecologically Sustainable Management of Fisheries 2nd Edition*.

## 1.1 Queensland Sustainable Fisheries Strategy 2017-2027

In June 2017, the Queensland Government released the *Queensland Sustainable Fisheries Strategy 2017–2027*, a program of fisheries reform that will deliver a more modern and responsive approach to fisheries management in Queensland. The Strategy includes 33 actions spanning 10 areas of foundational reform. Details of the Strategy are available at <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy>.

To facilitate adaptive management of Queensland's fisheries resources and create a more flexible, responsive decision-making framework, a key action of the Strategy (Action 8.1) commits to amend the *Fisheries Act 1994* and Fisheries Regulation 2008 to clarify the roles of the responsible minister and Fisheries Queensland in the decision making process. The rationale for this action is to ensure that decision-making occurs at an appropriate level, is timely, evidence-based, and that the rules can be changed via declaration as far as possible to improve flexibility in management.

As the first step in delivering this action, the Queensland Government amended the *Fisheries Act 1994* to:

- modernise the objectives of the Act and recognise the interests of key stakeholder groups
- clarify the roles of the Fisheries Minister and the Chief Executive in the management of the state's fisheries and to allow for more responsive decision-making through the use of harvest strategies
- strengthen enforcement powers and penalties to address serious fisheries offences such as black-marketing
- reduce complexity and remove redundant provisions.

Initial changes to the *Fisheries Act 1994* took effect from 28 May 2019, including new penalties to combat black-marketing and a 20m exclusion zone around shark control equipment. Amendments to the Fisheries Regulation 2008 also took effect from 28 May 2019. There were no changes to fishing rules, only an updated structure, the East Coast Trawl Management Plan was incorporated, and parts of the Regulation were moved to declarations.

On 1 September 2019, new fishing regulations commenced that included further changes to the structure of fisheries legislation, along with some changes to recreational, charter and commercial fishing rules. The Fisheries Regulation 2008 was replaced by two pieces of legislation – the Fisheries (General) Regulation 2019 and Fisheries (Commercial Fisheries) Regulation 2019. Some amendments were also made to the Fisheries Declaration 2019.

As a result of these changes, Queensland's fisheries are now regulated by the following pieces of legislation:

- [Fisheries Act 1994](#)
- [Fisheries \(General\) Regulation 2019](#)
- [Fisheries \(Commercial Fisheries\) Regulation 2019](#)
- [Fisheries Declaration 2019](#)
- [Fisheries Quota Declaration 2019](#).

The [Fisheries Act 1994](#) sets out Fisheries Queensland's responsibilities for the economically viable, socially acceptable and ecologically sustainable development of Queensland's fisheries resources.

The [Fisheries \(General\) Regulation 2019](#) outlines general regulatory requirements relevant to the management and use of Queensland's fisheries resources.

The [Fisheries \(Commercial Fisheries\) Regulation 2019](#) outlines the regulatory requirements that apply to Queensland's commercial fisheries, including how activities are to be carried out.

The [Fisheries Declaration 2019](#) outlines restrictions on particular fishing activities across all sectors. Schedule 1 outlines regulated waters that apply in Queensland. Schedule 2 outlines the regulated fish declarations (size, possession and form requirements etc.) that apply to commercial and recreational fishers in Queensland.

The [Fisheries \(Quota\) Declaration 2019](#) outlines the quota entitlements for particular commercial fisheries, including the commercial catch limits.

## **2 Brief Description of the Fishery**

The QCF operates along the Queensland east coast from the tip of Cape York to the southern border of the Great Barrier Reef (GBR). A map of the fishery area is available at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/licences/fisheries-symbols>.

Fishing can take place within permitted zones of the Great Barrier Reef Marine Park (GBRMP). Harvesting is also permitted, to some authority holders, in two small areas in South East Queensland waters. The QCF is a hand collection fishery which includes the collection of whole and/or parts of colonies of a wide variety of corals and related Cnidarian species for the live aquarium trade, most of which is exported overseas. Operation is primarily on the GBR and licence holders are conditioned to specifically ensure sustainability of the resource.

Corals are collected using handheld implements on scuba or surface supplied air from hookah (hose) apparatus. The QCF deals with the commercial operations of authorities to take coral under a 'D' fishery symbol. It is a small scale, quota managed, hand harvest fishery with 59 authorities. Commercially collected coral species, coral sand and rubble, and living rock are marketed domestically and internationally. There is a current Total Allowable Commercial Catch (TACC) for the fishery, which is split between two categories: 'Speciality Coral' and 'Other Coral' (live rock, coral rubble and ornamental coral).

There is no information available on the traditional or recreational harvest of coral species. Hobby aquarists do harvest some coral outside the state marine parks and the GBRMP. Recreational fishers cannot legally use SCUBA or hookah apparatus for harvesting corals but may use a mask and snorkel.

Table 1: Main features of the fishery in 2019–20

Feature	Details
Species targeted	The commercial Coral Fishery is based on the collection of a broad range of species from the classes Anthozoa and Hydrozoa. The key components of the fishery are: <ul style="list-style-type: none"> <li>• specialty live corals (includes anemones, soft and hard corals)</li> <li>• ornamental corals</li> <li>• live rock (i.e. dead coral skeletons with algae and other organisms living on them)</li> <li>• coral rubble (i.e. coarsely broken up coral fragments)</li> <li>• coral sand (i.e. finely ground up particles of coral skeleton)—only taken as incidental catch and may not be targeted within Marine Park waters.</li> </ul>
Fishery symbol	D
Current management	<i>Fisheries Act 1994</i> ; •Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019, Fisheries Declaration 2019, Fisheries Quota Declaration 2019, Policy for the Management of the Coral Fishery 2016.
Gear	Coral may only be taken by hand or by using hand-held non-mechanical implements, such as a hammer and chisel. Licence holders may also use underwater breathing apparatus (SCUBA or hookah) when taking coral.
Main management methods	The following management measures are in place for the commercial fishery under legislation and policy: <ul style="list-style-type: none"> <li>• limited entry: 59 Commercial Harvest Fishery Licences are endorsed for the coral fishery</li> <li>• quota managed: 200 t Total Allowable Commercial Catch [split between specialty coral (30 per cent) and other coral (70 per cent)]</li> <li>• limits on the number of boats and collectors operating under a licence at any one time</li> <li>• collection by hand or hand-held implements only.</li> </ul> From 1 July 2016 the commercial coral fishery operates under the <a href="#">Policy for the Management of the Coral Fishery</a> (the Policy).
Quota	Total Allowable Commercial Catch = 200 t [split between specialty coral (30 per cent) and other coral (70 per cent)].
Fishing season	1 July to 30 June
Commercial fishery licences	Total number of licences in the fishery – 59 Number of active licences – 42
Management changes	No changes since the new Policy was implemented on 1 July 2016. The new arrangements included the reporting of actual weights for quota deduction and catch monitoring purposes.
Accreditation under the <i>EPBC Act</i> (Part 13 and 13A)	Part 13: re-accredited 18 June 2021 Part 13A: current accreditation (Wildlife Trade Operation) expires 30 October 2021
Total annual harvest by sectors	94.43 t (comprised of 40.86 t specialty coral and 53.56 t other coral).
GVP	\$14.6M in 2018-19 (84 per cent of collected corals are exported) (see <a href="#">Report</a> ) , no estimate for 2019-20
Stock status	Queensland Department of Agriculture and Fisheries (DAF) assesses the risk to species collected in the QCF at periodic Ecological Risk Assessment workshops as a proxy for stock status. The 2013 workshop found that from a total 220 species assessed, there were no high risk species, 4 species at moderate risk, and 76 species at low risk in the fishery. Species greater than negligible risk are monitored.
Monitoring	Real-time quota monitoring
Catch and effort data validation	Routine – logbook data entry checks, data extraction checks and range checks.
Complementary management	The fishery operates in the Great Barrier Reef Marine Park. The fishery is co-managed by permit with the Great Barrier Reef Marine Park Authority.

### 3 Management Arrangements

Prior to 1 September 2019, management arrangements for the QCF were described in Chapter 7, Part 3 of the Fisheries Regulation (2008). Post 1 September 2019, management arrangements for the QCF are described in Schedule 1, Part 3 of the Fisheries (Commercial Fisheries) Regulation 2019 (Table 1).

The fishery may be described as specimens that are, or are derived from, invertebrates taken in the Queensland Coral fishery as defined in the management regime for the fishery symbol D, in force under the *Fisheries Act 1994* (Queensland) and Fisheries (General) Regulation 2019, Fisheries (Commercial Fisheries) Regulation 2019, Fisheries Declaration 2019 and Fisheries Quota Declaration 2019 (Queensland). Commercial access to the fishery requires a primary Commercial Fishing Licence with a “D” fishery symbol. Management arrangements for this fishery did not change on 1 September 2019.

Fisheries reforms were introduced in September 2020 which largely aimed to modernise the harvest fisheries generally. Fishing in the coral and marine aquarium fisheries will be allowed during the same fishing trip to maximise efficiency in the fisheries. The definition of aquaculture was also clarified to activities involving the cultivation of fisheries resources via propagation (other than by fragmentation for corals) and breeding are considered aquaculture. A map of the fishery area is available at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/licences/fisheries-symbols>.

The catch and effort data required to inform harvesting of aquarium fish species is obtained through commercial logbook returns. The QCF logbook is at <https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/monitoring-reporting/requirements/logbooks>.

All boats in the QCF are required to have vessel tracking installed and operational on all primary and tender vessels to verify fishing effort reported in commercial fishing logbooks.

#### 3.1 Queensland Coral Fishery Harvest Strategy: 2021–2026

The Queensland Coral Fishery Harvest Strategy 2021-2026 was released for public consultation in September 2020 <https://daf.engagementhub.com.au/draft-harvest-strategies-for-coral-and-marine-aquarium-fish> Public consultation closed on 31 January 2021. The Harvest Strategy was approved by the Queensland Minister responsible for fisheries in June 2021 for implementation on 1 September 2021.

The Harvest Strategy was prepared in cooperation with a stakeholder working group, the Marine Aquarium and Coral Fisheries Working Group. Details of the fishery working group and communiqués from working group meetings are available at <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups/marine-aquarium-fish-and-coral-fisheries-working-group>.

The management unit for the Harvest Strategy is as defined by the Fisheries (Commercial Fisheries) Regulation 2019:

- the QCF Fishery Area includes all tidal waters and foreshores south of latitude 10°41' south and east of longitude 142°31'49" east.

The Harvest Strategy provides a detailed overview of the fishery including the fishery area, target stocks, access requirements and management arrangements. The Harvest Strategy provides clear objectives for the fishery, as well as a transparent process for measuring and managing the performance of the fishery over the next 5-years. The Harvest Strategy also contains a number of key elements including resource sharing arrangements for each fishing sector, clear rules for managing the harvest of all sectors, as well as a monitoring and management framework for all species in the fishery.

## 4 Target Species, Effort and Catch

Corals are primitive animals that belong to the Phylum Cnidaria, which also includes hydroids, jellyfish and sea anemones. Species permitted to be taken in the QCF include those of the class Hydrozoa or Anthozoa. Most corals targeted by the fishery belong to the class Anthozoa and represent approximately 80 of over 400 coral species present on the GBR. Of these species, the market also dictates collection of a narrow range of size and appearance. Corals targeted for the aquarium trade include a diverse range of mainly hard and soft corals as well as sea anemones. These corals are generally small colonies or large-polyp species which survive well in captivity.

The higher harvest levels in the fishery in recent years are considered to be sustainable. A recent study on Australian coral fisheries by [Pratchett et al. \(2020\)](#) found that the available biomass of targeted coral species in areas with highly concentrated and sustained fisheries pressure were substantial when compared to recent harvest levels and limits on collection. These findings were especially significant in understanding the size of the coral fishery resource following major environmental disturbances as the study was conducted just after the GBRMP experienced widespread coral bleaching and impacts from cyclones. Pratchett et al. (2020) also noted that although the highly selective collection practices of the fishery which rely on choosing market-preferred colours, sizes and shapes, may reduce the risks of over-exploitation and localised depletion, the impacts on the population structure from this targeting activity is unknown. The study's findings will be considered in subsequent ecological risk assessments of the fishery.

Daily, species-specific reporting of harvest at fine spatial scales is mandatory in the fishery. This detailed level of data will ensure the harvest strategy can quickly respond to unsustainable changes in species catch levels through the risk-based decision rules for the fishery.

### 4.1 Ecological Risk Assessment

DAF conducted an [Ecological Risk Assessment](#) (ERA) of the QCF in 2013. The ERA final findings were based on a workshop held on 20–21 May 2013 in Brisbane with key stakeholders that included:

- experienced commercial collectors
- science representatives
- representatives from GBRMPA and SEWPAC (now DAWE)
- Environmental Non-Government Organisation representatives
- fishery managers from Queensland, Western Australia and the Northern Territory
- DAF Fisheries Assessment staff.

The workshop considered a timeframe of ten years to assess the ecological impact of the fishery on the sustainability of the species. The consequence of the risk from fishing was evaluated by considering a fully active fishery with collection levels reflecting current (2013) trends in harvest. For example, at the time of the workshop, *Catalaphyllia jardinei* averaged 8 per cent of the harvest by number of pieces collected and 4 per cent by weight. In a fully active fishery (i.e. when all licence holders are active, and all the quota is used) this would equate to 4 per cent (2.6 t) of the Specialty coral quota (60t) potentially being collected. This expanded harvest estimate represented the base case for understanding potential fishery impacts on each species.

Reported collection levels in the fishery in recent years remain below those considered for the risk consequence in the workshop (68 per cent of the Specialty coral quota used in 2019-20). Therefore, the risk ratings in terms of reported harvest from 2013 remain relevant today. The fishery area, however, has been subjected to significant environmental disturbances including widespread coral bleaching and impacts from cyclones post-2013. It is important that subsequent risk assessments consider these impacts.

The 2013 ERA review found 4 species at moderate risk, and 76 species at low risk in the fishery<sup>1</sup>. The new management policy for the QCF introduced in 2016 changed logbook reporting requirements from 2016–17. Species that are at greater than negligible risk from the fishery are monitored by numbers only. The measures provide finer spatial detail to ensure local depletions of these species do not reach unsustainable levels. The 2013 ERA is due to be reviewed.

The coral collection industry representative body, Pro-vision Reef Inc., developed the [Stewardship Action Plan 2013: Mitigating Ecological Risk in a Changing Climate](#) in response to the 2013 ERA findings. The Plan was produced by industry in partnership with government agencies and world-renowned coral scientists to enable industry to mitigate identified risks in a purposeful and practical manner at the individual collector level. The collection standards apply to 10 of the species identified as moderate and low risk or species that require better understanding of their reproductive biology and taxonomy by the ERA (Table 2). The industry has committed to modify this species list and mitigation standards based on outputs from subsequent ERAs and research findings.

Table 2: Coral industry risk mitigation standards applied to 10 species identified at risk in the Queensland Coral Fishery in 2013 (Source: Pro-vision Reef Inc.: [Stewardship Action Plan 2013: Mitigating Ecological Risk in a Changing Climate](#))

Species	Industry Risk Mitigation Standard
<i>Micromussa lordhowensis</i>	Do not collect colonies <5cm Do not collect colonies with low profile morphology
<i>Homophyllia australis</i>	Do not collect colonies <4cm skeleton
<i>Entacmaea quadricolor</i>	Do not collect more than 1/3 of any colony in the Keppel Coral Collection Area Do not collect more than 2/3 of any colony elsewhere in the fishery Do not collect visibly harvested colonies
<i>Duncanopsammia axifuga</i>	Do not collect from colonies that are <10cm in the Keppel Coral Collection Area
<i>Euphyllia ancora</i>	Do not collect from colonies that are <15cm in the Keppel Coral Collection Area
<i>Euphyllia divisa</i>	Do not collect from colonies that are <15cm in the Keppel Coral Collection Area
<i>Acanthophyllia deshayesiana</i>	Do not collect colonies <5cm in the Arlington/Vlassof Complex in the Cairns Coral Collection Area
<i>Cycloseris cyclolites</i>	Do not collect colonies <2.5cm in the Arlington/Vlassof Complex in the Cairns Coral Collection Area
<i>Cynarina lacrymalis</i>	Do not collect colonies <4cm in the Arlington/Vlassof Complex in the Cairns Coral Collection Area
<i>Trachyphyllia geoffroyi</i>	Do not collect colonies <5cm in the Arlington/Vlassof Complex in the Cairns Coral Collection Area
<i>Catalaphyllia jardinei</i>	Do not collect colonies <5cm in the Arlington/Vlassof Complex in the Cairns Coral Collection Area

<sup>1</sup> The number of species identified at low and moderate ecological risk from the fishery in the 2013 risk assessment has recently been revised. A technical error had resulted in a greater number of species determined to be at moderate risk. The number of species at moderate risk has been revised down from 17 to four, while the number of species at low risk increased from 63 to 76.

## 4.2 General Catch Statistics

Details of active licences, effort and total catch in the QCF for the period 2006-07 to 2019-20 are summarised in Table 3 below.

Table 3: Active licences, effort and total harvest of coral (speciality and other) in the QCF for the period 2006–07 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021)

Financial year	Licences	Days	Harvest (t)
2006-2007	26	663	84.60
2007-2008	23	814	100.24
2008-2009	25	794	87.24
2009-2010	29	796	78.57
2010-2011	26	823	74.49
2011-2012	30	715	74.13
2012-2013	33	792	89.89
2013-2014	34	840	98.83
2014-2015	33	889	93.32
2015-2016	36	964	88.45
2016-2017	32	858	80.77
2017-2018	32	858	84.61
2018-2019	37	1203	110.63
2019-2020	42	1689	94.43

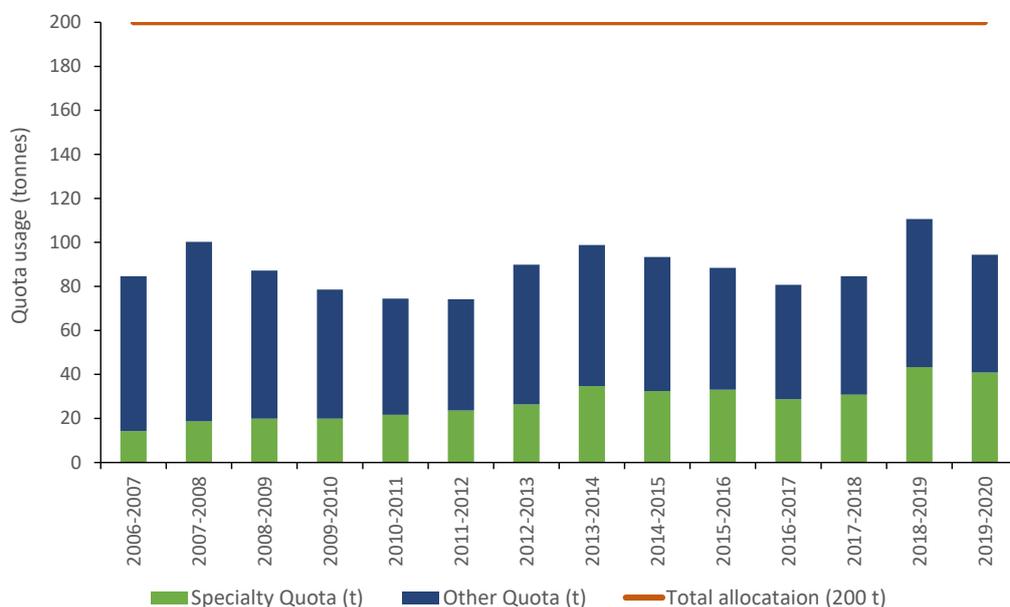


Figure 1: Quota usage in the Queensland Coral Fishery from 2006-07 to 2019-20 (Source: Queensland DAF CFISH database, 15 July 2021).

Total quota usage has been reasonably consistent since its introduction in 2006 (Table 3, Figure 1). However, the proportion of hard coral species<sup>2</sup> (including Acroporidae/Pocilloporidae corals) collected has been increasing (Figure 2, Figure 3). Collection peaked in 2018-19 with nearly 111 t harvested.

<sup>2</sup> The [Policy for the Management of the Coral Fishery](#) defines “Hard coral” as any coral species (not sea anemones) from the Class Anthozoa or Class Hydrozoa that is listed under Appendix I, II or III by the Convention on International Trade in Endangered Species of Wild Fauna or Flora (CITES).

In 2019-20, approximately 94 t (comprised of 41 t specialty hard coral species, 34 t Acroporidae/Pocilloporidae corals, 18 t live rock & coral rubble, 1.5 t soft coral species and 0.1 t sea anemone species) was reported harvested in the QCF (Figure 3). This represents an overall 16 t decrease from 2018-19. Live rock (-10.5 t) and hard coral (-2.5 t) comprised most of this decrease (Figure 3).

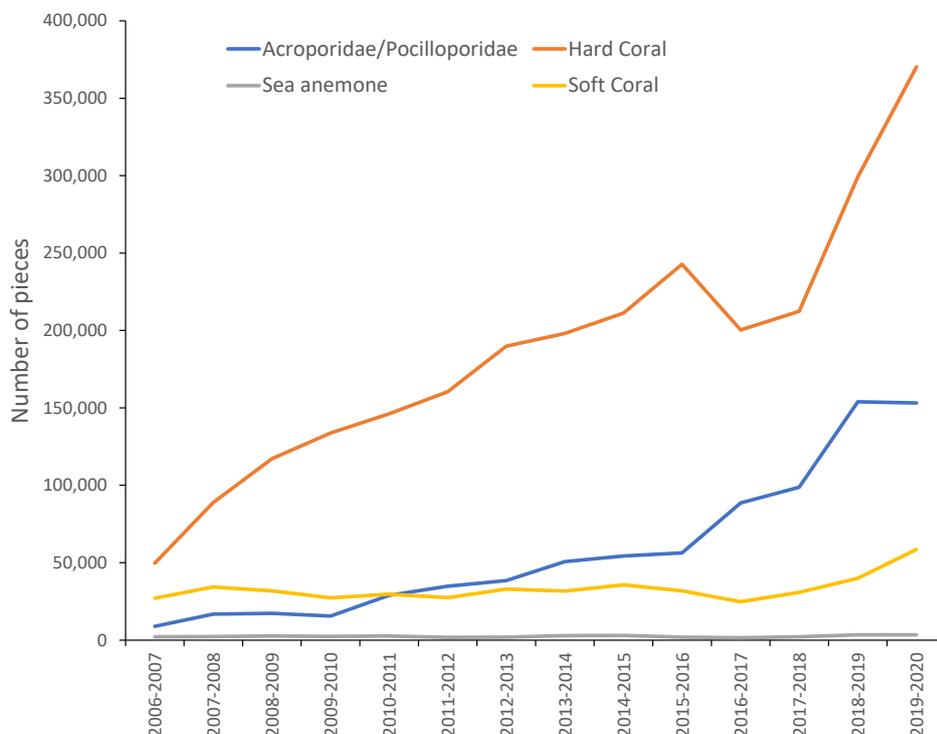


Figure 2: Collection of coral products by number of pieces and quota reporting subcategory in the Queensland Coral Fishery from 2016-17 to 2019-20 (Source: Queensland DAF CFISH database, 15 July 2021).

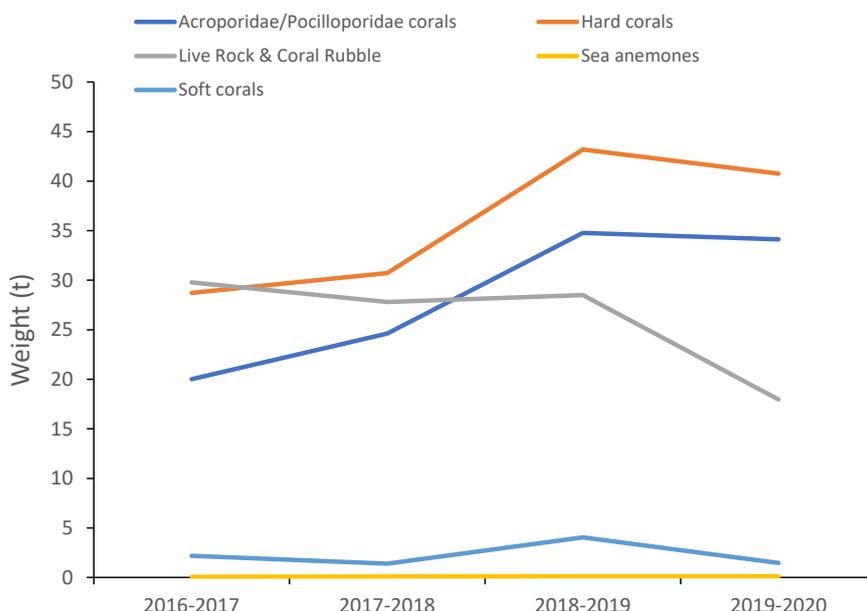


Figure 3: Collection of coral products by weight (tonnes) and quota reporting subcategory in the Queensland Coral Fishery from 2016-17 to 2019-20 (Source: Queensland DAF CFISH database, 15 July 2021).

The weight of hard coral species (including Acroporidae/Pocilloporidae corals) collected in 2019-20 decreased by an overall 3 t (Figure 3) while the number of pieces increased by 70,405 (+16 per cent) pieces when compared to the previous year Figure 2.

Based on average piece weights, more small pieces (<200 g) were collected in 2019-20 than 2018-19 (Figure 4). The collection of pieces of *Acropora* species remained high in 2019–20 (Table 4), comprising 24 per cent of the total pieces collected. The end use for Acroporid species may be either as live specimens for aquaria or cleaned and dried for ornamental purposes, or both. In recent years, the trade of this species has focused on live corals. They are generally collected either as fragments for the live trade, which leaves the rest of the colony to grow, or to a lesser extent as whole colonies for the ornamental trade.

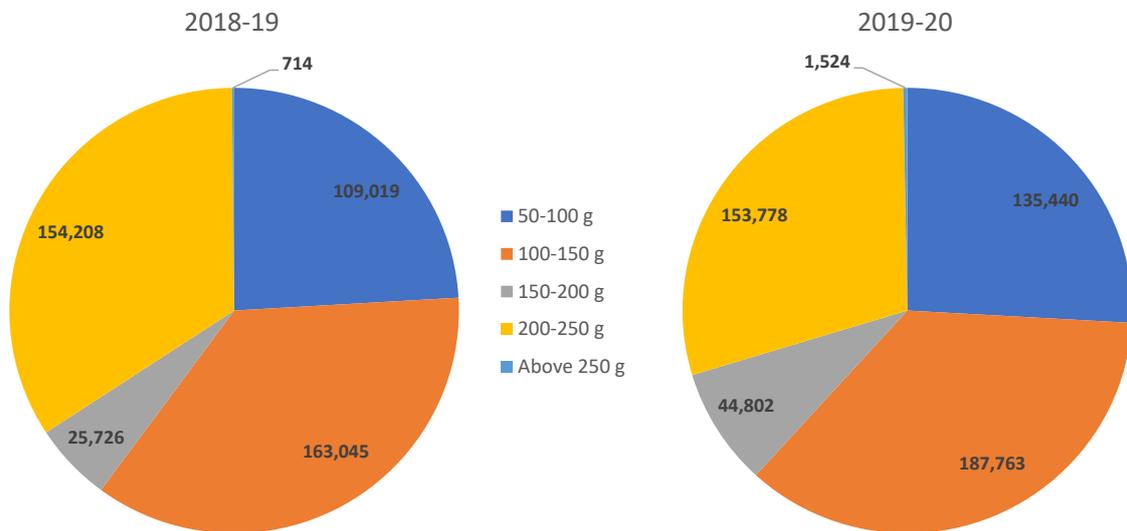


Figure 4: Number of pieces of hard coral (inc. *Acroporidae/Pocilloporidae* corals) based on size categories collected in the Queensland Coral Fishery in 2018-19 and 2019-20 (Source: Queensland DAF CFISH database, 15 July 2021)

The fishery has two Coral Collection Areas (CCA): Cairns and Keppel. These CCAs encompass the historical effort hotspots. However, the fishery continued to show significant spatial diversification in recent years, most notably in the Mackay region. Effort in the Keppel CCA has remained low but stable (Figure 5). Effort in the Cairns CCA has increased since 2018-19, following a long period of reducing effort. Collection from areas outside of the two CCAs ('Other') increased markedly in 2019–20 to record high levels. Most of the increase in effort in the Other areas in 2019-20 was in the Mackay region (54 per cent), although other non-CCA regions also reported increases.

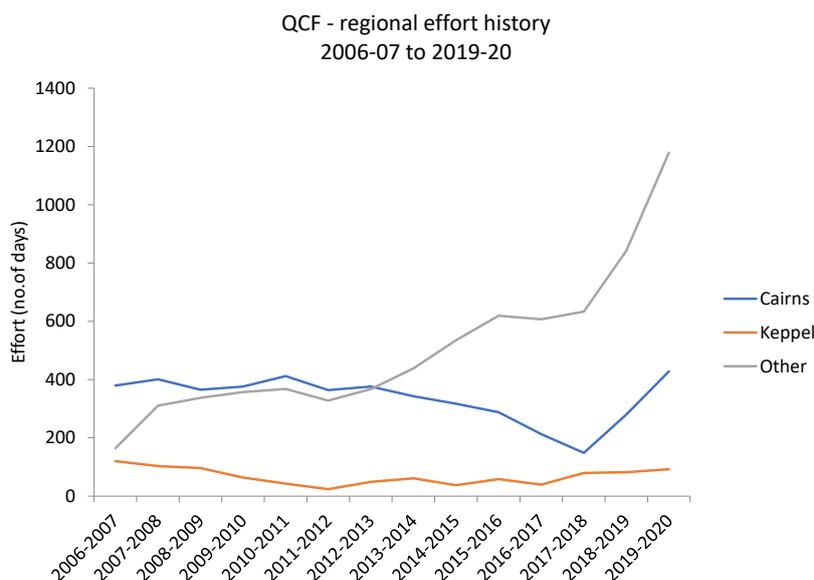


Figure 5: History of effort within and outside the defined Coral Collection Areas in the Queensland Coral Fishery (Source: Queensland DAF CFISH database, 15 July 2021).

Table 4: Number of individual pieces collected for all species reported in the Queensland Coral Fishery for the quota years 2016–17 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021).

Quota Category	Reporting Category	Species or common name	Number of individual pieces				
			2016-2017	2017-2018	2018-2019	2019-2020	
Specialty Coral	Hard Corals	<i>Acanthophyllia deshayesiana</i>	2086	4786	5658	6057	
		<i>Alveopora</i> spp	3893	4439	6835	7798	
		Antipathidae (black corals)	73	-	108	40	
		<i>Blastomussa merleti</i>	1047	1271	1336	1147	
		<i>Blastomussa wellsii</i>	3058	5171	4495	5224	
		<i>Catalaphyllia jardinei</i>	15180	13607	24358	24857	
		<i>Cycloseris cyclolites</i>	6284	6343	13426	16236	
		<i>Cynarina lacrymalis</i>	3017	2492	4585	3847	
		Dendrophylliidae	908	1120	1713	2120	
		<i>Duncanopsammia axifuga</i>	7703	10089	11190	12204	
		<i>Euphyllia glabrescens</i>	9775	9121	11967	21914	
		<i>Euphyllia</i> spp	3453	2082	3755	4037	
		Faviidae	10370	9877	12435	16440	
		<i>Fimbriaphyllia ancora</i>	14844	13455	18275	25468	
		<i>Fimbriaphyllia paraancora</i>	2150	1378	1587	3492	
		Fungiidae	5442	9504	7210	11938	
		<i>Goniopora</i> spp	11034	14878	25954	26148	
		<i>Goniopora/Alveopora</i>	35	-	-	172	
		Helioporidae	52	199	246	124	
		<i>Homophyllia australis</i>	20128	22362	24081	36229	
		<i>Homophyllia bowerbanki</i>	1242	1762	3465	2639	
		<i>Leptoseris</i> spp	639	2005	300	674	
		<i>Lobophyllia vitiensis</i>	2224	1335	922	2512	
		Merulinidae	605	798	656	1202	
		<i>Micromussa amakusensis</i>	1879	1074	762	981	
		<i>Micromussa lordhowensis</i>	31497	27702	40308	34509	
		Milleporidae	528	86	91	136	
		<i>Moseleya latistellata</i>	359	568	556	758	
		Mussidae	14841	13660	19547	24251	
		Oculinidae	716	576	1029	1392	
		Other coral	4949	6037	11955	27215	
		<i>Pachyseris</i> spp	333	1574	2910	1884	
		<i>Paragoniastrea australensis</i>	3439	3332	5325	6780	
		Pectiniidae	2762	1805	2374	3086	
		<i>Plerogyra sinuosa</i>	2788	2201	3888	3718	
		Poritidae	607	693	311	550	
		Siderastreidae	-	1234	-	-	
		<i>Trachyphyllia geoffroyi</i>	7898	11740	24188	29159	
		Tubiporidae	903	647	745	1917	
		<i>Turbinaria</i> spp	1582	1415	623	1388	
		Sea anemones	Actiniaria	126	160	330	214
			<i>Entacmaea quadricolor</i>	1132	1713	2641	2443
			<i>Heteractis crispa</i>	185	98	301	587
<i>Heteractis magnifica</i>	94		111	111	159		
<i>Acropora</i> spp	82279	91284	144367	138874			
Other Coral	Acroporidae/ Pocilloporidae	<i>Montipora</i> spp	5057	5666	7594	12520	
		<i>Pocillopora</i> spp	818	1081	1007	979	
		<i>Seriatopora</i> spp	286	446	458	362	
		<i>Stylophora</i> spp	193	248	471	493	
		Alcyonacea	9563	13125	26455	28501	
	Soft Corals	Clavulariidae	1773	2220	1050	3191	
		Corallimorph	4327	7074	4375	14602	
		Gorgoniidae	666	923	312	392	
		Hydrocorals	558	768	290	630	
		Nephtheidae	2307	1520	2552	4525	
		Paralcyoniidae	186	41	38	80	
		Pennatulidae	217	514	232	19	
		Xeniidae	2683	1461	2515	1874	
		Zoanthidae	2502	3165	2171	4824	
	<b>Total</b>			<b>315285</b>	<b>344036</b>	<b>496439</b>	<b>585512</b>

### 4.3 Spatial Analysis of Harvest by Reporting Category

The majority (411,672 pieces or 70 per cent) of the total coral harvest (not including coral rubble and living rock) was collected outside of the two CCAs (Figure 6). Overall collection from the Keppell and Cairns CCAs increased in 2019-20 by 16 per cent and 10 per cent respectively, while collection outside the CCAs also increased by 21 per cent. Most of the increase has been in the collection of hard coral species, especially in the region outside of the CCAs (Figure 7).

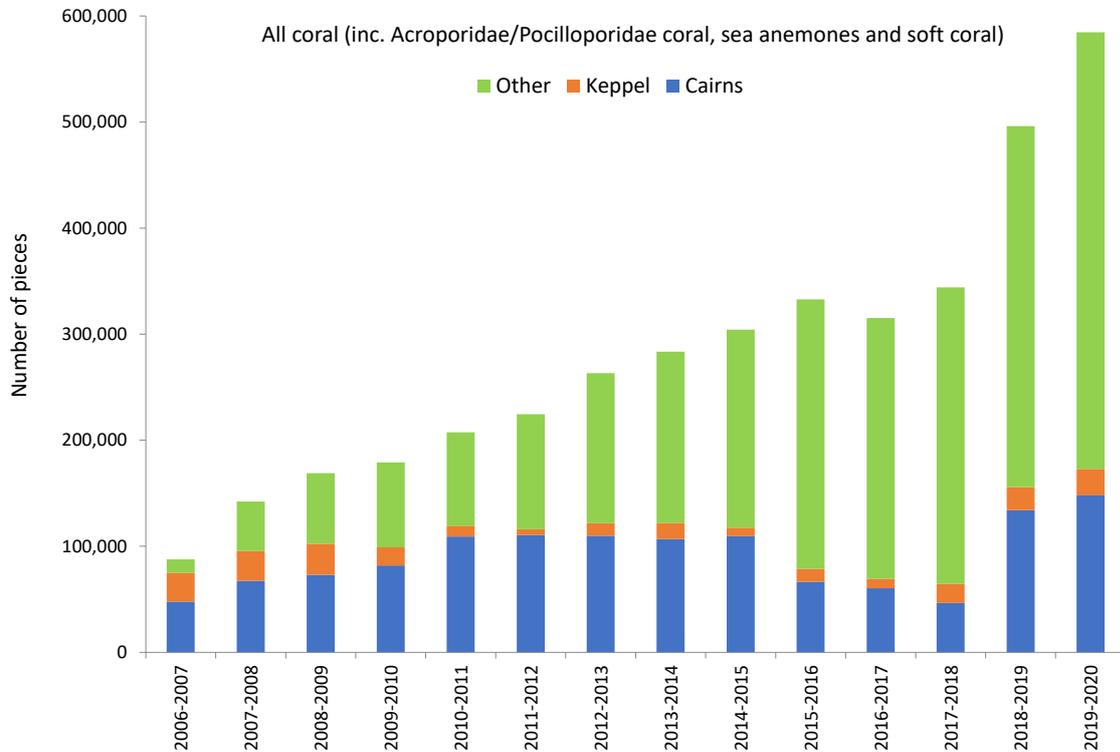


Figure 6: Regional breakdown of coral harvested (number of pieces) in the Queensland Coral Fishery for the quota years 2006–07 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021)

Overall collection of hard coral pieces (inc. Acroporidae/Pocilloporidae corals) increased by 16 per cent (70,405 pieces) in 2019-20 (Table 4, Figure 8, Figure 9). This was following a 46 per cent (141,923 pieces) increase from 2017-18 to 2018-19. The number of hard coral pieces (inc. Acroporidae/Pocilloporidae corals) collected in the Cairns CCA and the Mackay region accounted for 80% of the total harvest in 2019-20. The annual harvests in the Mackay and North Queensland regions have grown by an average of 47 per cent and 58 per cent respectively since 2018-19, while Cairns declined by 4 per cent over the same period (Figure 9). Townsville also recorded an increase of 8,200 pieces (or 53 per cent) from 2018-19 to 2019-20. However, this region has only seen an overall increase of 3 per cent since 2016-17.

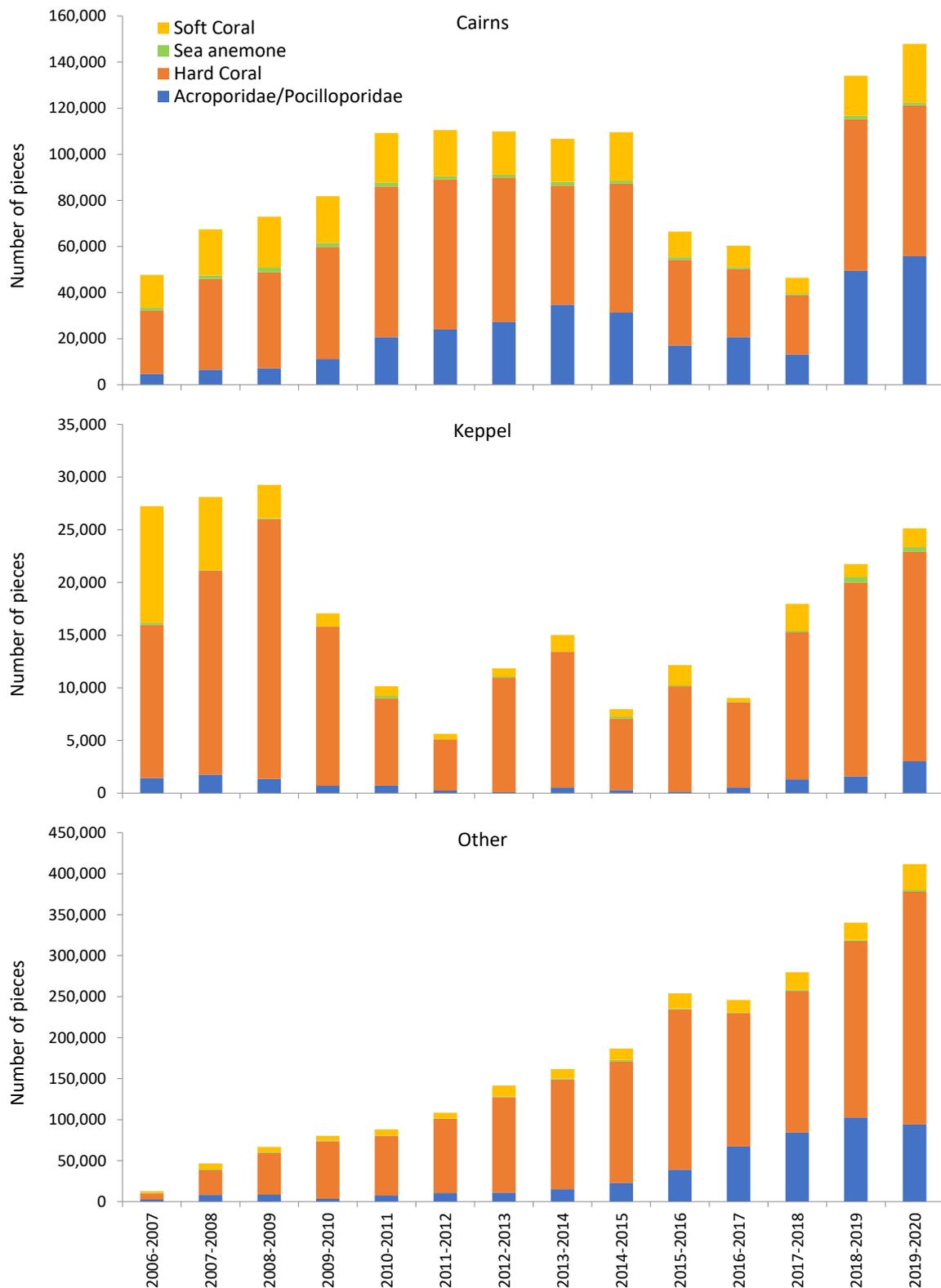


Figure 7: Regional breakdown of quota reporting categories (number of pieces) in the Queensland Coral Fishery for the quota years 2006–07 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021)

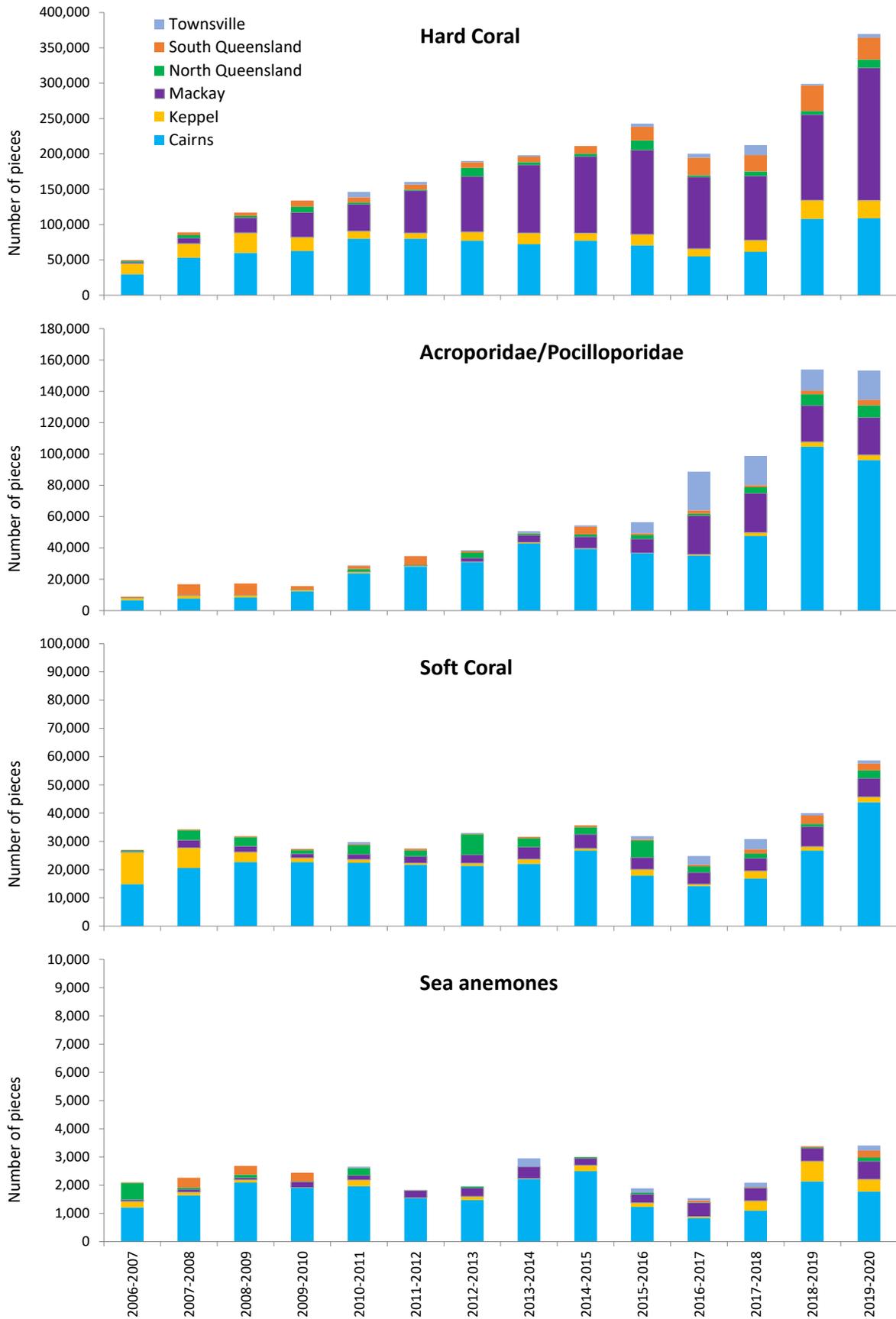


Figure 8: Sub-regional breakdown of quota reporting categories in the Queensland Coral Fishery for the quota years 2006–07 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021)

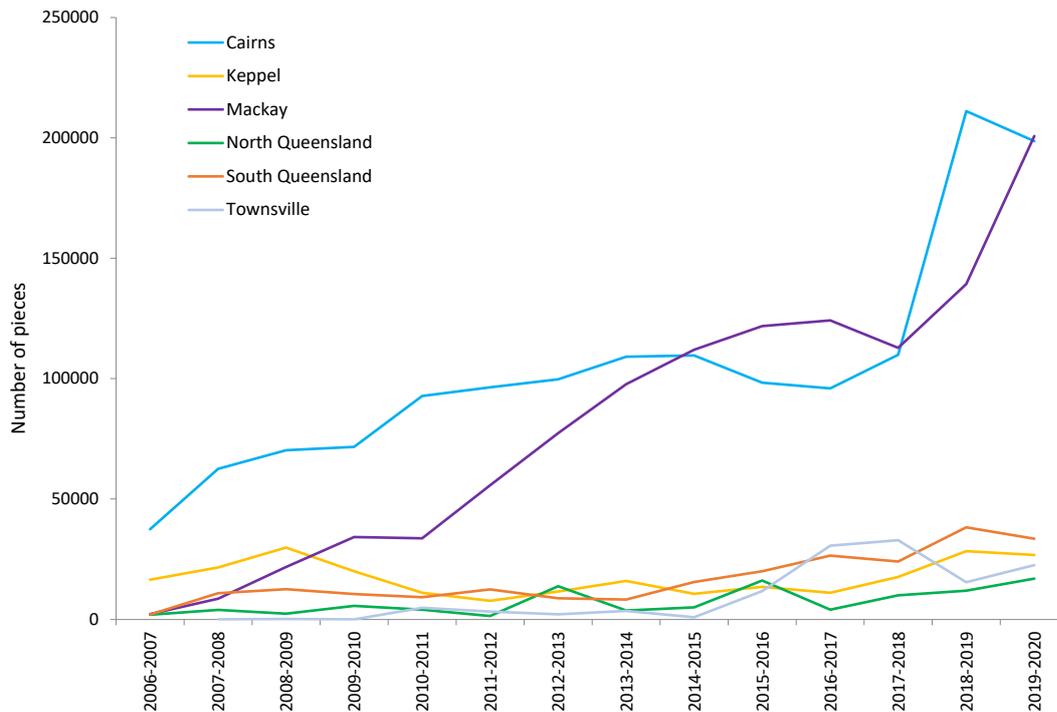


Figure 9: Sub-regional breakdown of hard coral (inc. Acroporidae/Pocilloporidae) reporting in the Queensland Coral Fishery for the quota years 2007–08 to 2019–20 (Source: Queensland DAF CFISH database, 15 July 2021)

#### 4.4 Managing Performance of the Fishery

Annual harvest levels were previously monitored for the fishery against review reference points in the Coral Fishery Performance Measurement System (PMS). The PMS has been replaced by a new harvest strategy for the fishery that builds on the former performance measures and will be implemented on 1 September 2021.

The Queensland Coral Fishery Harvest Strategy 2021-2026 outlines how performance of the fishery will be managed from 2021. The Harvest Strategy was developed by the fishery working group, which included coral science experts and the DAF Expert Panel and was independently reviewed before going out for public consultation.

The Harvest Strategy manages the commercial catch at a species level and risks identified through ERAs. Suitable performance indicators have been selected, where available, to describe fishery performance in relation to the fishery objectives. Catch data for coral species are used to evaluate the status and level of risk of harvesting to coral populations.

Catch triggers provide a way for controlled increases in fishing mortality providing that they are within historic catch levels. Annual catch levels are assessed against a reference period to detect changes in fishery behaviour that may represent an unacceptable risk to coral species. A reference period from 2016-17 to 2018-19 has been defined for this fishery. This reference period represents a stable period of operation for the QCF. As the level of exploitation increases above historic levels, species will be elevated to higher levels of monitoring, assessment and management.

ERAs are also used to inform the acceptable level of risk from harvesting for coral species. If the ecological risk to a species is increased, then species are elevated to a higher tier of monitoring and management to ensure the risk is reduced to an acceptable level. Industry and emerging science can also identify species that may be considered for monitoring and management at a higher tier. If fishing impacts were considered to generate an acceptable level of risk to the harvested coral species, then no management action would be required. However, if fishing impacts are considered to generate an undesirable level of risk (moderate) then the coral species would be elevated to Tier 2 and an

appropriate management response developed. If fishing impacts were considered to generate an unacceptable level of risk (high) then the coral species would be elevated to Tier 1. A management response should be developed to reduce the risk.

## 4.5 Compliance

The number of inspections in the QCF was increased to ensure compliance following the introduction of new management arrangements on 1 July 2016 under the policy. Compliance rates for infringements since this introduction have been high at 90 per cent or better (Table 5).

*Table 5: Queensland Boating and Fisheries Patrol compliance statistics for the QCF from 2016-17 to 2019-20. Note FIN = Fisheries Infringement Notice*

Year	Units inspected	FIN	Cautions	Compliance rate
2016–17	63	4	4	94%
2017–18	38	4	2	97%
2018–19	97	3	6	93%
2019–20	78	10	13	90%
2020-21	79	2	5	91%

## 5 Bycatch and Interactions with Species of Conservation Interest

In addition to the substantial protection provided by marine park zoning, hand collection fishing methods used in the QCF produce minimal bycatch and have negligible impacts to the broader ecosystem. Interactions with Species of Conservation Interest are recorded in a dedicated logbook. No interactions have been recorded in the period since the previous agency submission for reassessment of the fishery.

## 6 Monitoring and Research

The catch and effort data required to inform harvesting of coral species is obtained through commercial logbook returns. The QCF logbook is at <https://www.business.qld.gov.au/industries/farms-fishingforestry/fisheries/monitoring-reporting/requirements/logbooks>. As the QCF is a quota-managed fishery, real-time reporting is also required to provide an accurate record of the catch. All boats in the QCF are required to have vessel tracking installed and operational on all primary and tender vessels to verify fishing effort reported in commercial fishing logbooks.

The industry representative body, Pro-vision Reef Inc., have partnered with research institutions to assist with collecting information to answer research gaps identified in the 2013 ERA. The information gaps are outlined in Table 6.

Table 6: Coral industry research plan to address identified knowledge gaps from the 2013 Ecological Risk Assessment species at risk in the Queensland Coral Fishery in 2013 (Source: Pro-vision Reef Inc.: [Research Plan](#))

Species	Knowledge Gap
<i>Homophyllia bowerbanki</i>	Need to determine reproductive size and growth rate Need to validate high abundance inshore, which contradicts scientific opinion Taxonomic identification issues. Confused with <i>Acanthastrea hillae</i>
<i>Micromussa lordhowensis</i>	Need to determine reproductive size and growth rate Does colour have a genetic basis? Confirm proportion of ultra colours in the population Validate claims that it is a resilient coral
<i>Acanthophyllia deshayesiana</i>	Need to determine reproductive size and growth rate Taxonomic identification issues. Not recognised as Australian species Need monitoring data for abundance
<i>Acropora multiacuta</i>	Need to validate high abundance inshore, which contradicts scientific opinion
<i>Acropora nana</i>	Taxonomic identification issues
<i>Cycloseris cyclolites</i>	Need to determine reproductive size and growth rate Need to validate high abundance inshore, which contradicts scientific opinion. Scientists consider the species to be rare
<i>Cynarina lacrymalis</i>	Need to determine reproductive size and growth rate Does colour have a genetic basis? Need monitoring data for abundance
<i>Duncanopsammia axifuga</i>	Need to determine reproductive size and growth rate Need validation of widespread distribution Is it all one species? Need evidence to corroborate or refute growth and reproduction post disturbance
<i>Euphyllia ancora</i>	Need to determine reproductive size and growth rate Suggestion that there has been no recruitment in Keppels Need evidence to corroborate or refute growth and reproduction post disturbance Taxonomic identification issues. Confused with <i>Euphyllia fimbriata</i>
<i>Euphyllia cristata</i>	Need monitoring data for distribution
<i>Euphyllia divisa</i>	Need to determine reproductive size and growth rate Need evidence to corroborate or refute growth and reproduction post disturbance Taxonomic identification issues
<i>Euphyllia fimbriata</i>	Need to determine reproductive size and growth rate Need evidence to corroborate or refute growth and reproduction post disturbance Taxonomic identification issues. Confused with <i>Euphyllia ancora</i>
<i>Euphyllia glabrescens</i>	Need to determine reproductive size and growth rate Need evidence to corroborate or refute growth and reproduction post disturbance
<i>Micromussa amakusensis</i>	Taxonomic identification issues. Confused with <i>Micromussa lordhowensis</i>
<i>Scolymia australis</i>	Need to determine reproductive size and growth rate Does colour have a genetic basis? Is it locally abundant?
<i>Trachyphyllia geoffroyi</i>	Need to determine reproductive size and growth rate Does colour have a genetic basis?
<i>Acropora bushyensis</i>	Taxonomic identification issues. Confused with <i>Acropora digitifera</i>
<i>Acropora chesterfieldensis</i>	Taxonomic identification issues
<i>Acropora plana</i>	Taxonomic identification issues
<i>Acropora prostrata</i>	Taxonomic identification issues. Synonymised with <i>Acropora millepora</i>
<i>Acropora subglabra</i>	Taxonomic identification issues
<i>Acropora verweyi</i>	Taxonomic identification issues
<i>Balanophyllia sp.</i>	Taxonomic identification issues
<i>Blastomussa wellsii</i>	Need to validate high abundance inshore, which contradicts scientific opinion
<i>Catalaphyllia jardinei</i>	Need to determine reproductive size and growth rate Does colour and growth form have a genetic basis? Need to understand how they reproduce Need monitoring data for abundance

Species	Knowledge Gap
<i>Euphyllia paraancora</i>	Taxonomic identification issues. Not supposed to occur in Queensland, but reported from Coral Sea and northern Great Barrier Reef
<i>Euphyllia paradivisa</i>	Taxonomic identification issues
<i>Montipora caliculata</i>	Need to validate high abundance inshore, which contradicts scientific opinion
<i>Moseleya latistellata</i>	Need to validate high abundance inshore, which contradicts scientific opinion
<i>Turbinaria heronensis</i>	Need to confirm distribution. Thought to be restricted

## 7 Progress against conditions and recommendations

No.	Condition	Progress
1	<p>The Queensland Department of Agriculture and Fisheries must ensure that operation of the Coral Fishery is carried out in accordance with management regime specified in Queensland Department of Agriculture and Fisheries, and Great Barrier Reef Marine Park Authority issued permits, as well as in the following:</p> <ul style="list-style-type: none"> <li>• <i>Fisheries Act 1994</i> (Qld)</li> <li>• Fisheries (General) Regulation 2019 (Qld)</li> <li>• Fisheries (Commercial Fisheries) Regulation 2019 (Qld)</li> <li>• Fisheries Declaration 2019 (Qld)</li> <li>• Fisheries Quota Declaration 2019 (Qld)</li> <li>• <i>Marine Parks Act 2004</i> (Qld)</li> <li>• Marine Parks Regulations 2019 (Qld)</li> <li>• <i>Great Barrier Reef Marine Park Act 1975</i> (Cth)</li> <li>• Great Barrier Reef Marine Park Regulations 2019 (Cth).</li> </ul>	<p>The operation of the Queensland Coral Fishery was carried out in accordance with management regime specified in Queensland Department of Agriculture and Fisheries, Great Barrier Reef Marine Park Authority issued permits, and the relevant legislation.</p>
2	<p>The Queensland Department of Agriculture and Fisheries must inform the Department of Agriculture, Water and the Environment of any intended material changes to the Queensland Coral Fishery's management arrangements that may affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p>	<p>On 1 September 2021, the Queensland Coral Fishery will be managed according to the Coral Fishery Harvest Strategy 2021-2026. The Harvest Strategy can be viewed at <a href="https://www.daf.qld.gov.au/harvest-strategies">Harvest strategies   Department of Agriculture and Fisheries, Queensland (daf.qld.gov.au)</a>.</p> <p>This fishery now aligns with the principles and actions outlined in the Sustainable Fisheries Strategy 2017/2027 (for details see <a href="https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy">https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-strategy</a>).</p> <p>There are no other intended material changes to the Queensland Coral Fishery's management arrangements that may affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p>

No.	Condition	Progress
3	The Queensland Department of Agriculture and Fisheries must inform the Department of Agriculture, Water and the Environment of any intended changes to fisheries legislation that may affect the legislative instruments relevant to this approval.	There are no intended changes to fisheries legislation that may affect the legislative instruments relevant to this approval.
4	The Queensland Department of Agriculture and Fisheries must provide a new application for accreditation of the fishery, 90 days prior to the expiry of this Wildlife Trade Operation approval as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> .	Condition met  This application for accreditation of the fishery was provided on 30 July 2021.
5	By 30 September 2021, Queensland Department of Agriculture and Fisheries to implement ongoing species-specific reporting requirements for all species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that are harvested in the fishery. Reporting must mandate recording of species-specific harvest (or genus-specific for those species listed in schedule A) providing for:  a) location of harvest by longitude and latitude; and b) number of pieces per species (or genus for those species listed in schedule A) and their combined weight.  The raw data are to be provided to the CITES Scientific Authority by 30 October 2021, providing a	In progress  The logbook for the fishery is currently being revised to ensure recording of species-specific harvest (or genus-specific for those species listed in schedule A) and will provide:  a) location of harvest by longitude and latitude; and  b) number of pieces per species (or genus for those species listed in schedule A) and their combined weight.  Queensland Department of Agriculture and Fisheries is building a commercial fishing application to facilitate reporting across a number of fisheries and this is due for release in September 2021. Planning is underway to expand this application to accommodate the proposed reporting requirements for the Queensland Coral Fishery that may include in excess of 60 new quota reporting categories, which is more than for all other Queensland fisheries combined.

No.	Condition	Progress
	data agreement sufficient to protect commercial confidentiality is in place with the Queensland Department of Agriculture and Fisheries.	
6	<p>By 30 September 2021, Queensland Department of Agriculture and Fisheries to provide to the Department of Agriculture, Water and the Environment comprehensive raw catch data for the fishery for the calendar year 2021. This will allow analysis of trends in harvest since the last review was undertaken by Australia's Scientific Authority for CITES. The provision of this data is contingent on a data agreement sufficient to protect commercial confidentiality is in place with the Queensland Department of Agriculture and Fisheries.</p> <p>Any substantive change in harvest trends must be documented as this may be influential in informing future harvest restrictions considered necessary by Australia's Scientific Authority for CITES for ongoing non-detriment findings to be made.</p>	<p>In progress</p> <p>Harvest data is collected for the Queensland Coral Fishery through compulsory daily logbooks and will be provided to the Department of Agriculture, Water and the Environment by the due date.</p>
7	<p>By 30 September 2021, Queensland Department of Agriculture and Fisheries must provide the Department of Agriculture, Water and the Environment with an implementation plan for improved management arrangements for the Queensland Coral Fishery. The plan must include details on the planned rollout of:</p>	<p>In progress</p> <p>An implementation plan is being prepared for consultation with industry stakeholders.</p>

No.	Condition	Progress
	<p>a) species-specific quotas for all species listed under CITES that are harvested in the fishery, (or genus specific quotas for those species listed in Schedule A)</p> <p>b) identify mechanisms to enforce the harvest limits to be applied to species and/or genera and a timeframe for implementation</p> <p>c) a program to independently characterise the species composition of catch reported at the genus level (those species listed in Schedule A)</p> <p>d) a schedule for revision of the Ecological Risk Assessment and Ecological Risk Management for this fishery, that is transparent, repeatable and incorporates management, scientific and industry advice and considers comprehensive harvest data</p> <p>e) a plan for promptly considering and responding to the impacts of acute environmental disturbances, such as coral bleaching events and cyclones, on the area of the fishery; and</p> <p>f) development, in collaboration with industry, of a traceability framework for the fishery that supports distinguishing wild harvested corals from captive bred corals.</p>	