

# Sustainable Fisheries Strategy

2017–2027

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## Coral Reef Fin Fish Fishery Scoping Study

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## Summary

Feature	Details
<b>Species targeted</b>	<p><i>Commercial</i> – Primary species/complexes: Coral trout (<i>Plectropomus</i> and <i>Variola</i> spp.), Redthroat emperor (<i>Lethrinus miniatus</i>).</p> <p>Other species: Saddletail snapper (<i>Lutjanus malabaricus</i>), Spangled emperor (<i>Lethrinus nebulosus</i>), Red emperor (<i>Lutjanus sebae</i>), Stripey snapper (<i>Lutjanus carponotatus</i>), Crimson snapper (<i>Lutjanus erythropterus</i>), Goldband snapper (<i>Pristipomoides multidentis</i>), Rosy snapper (<i>Pristipomoides filamentosus</i>), and Bar rockcod (<i>Epinephelus ergastularius</i> &amp; <i>E. septemfasciatus</i>).</p> <p><i>Recreational</i> – Targets all species</p>
<b>Fisheries symbols</b>	<p><u>Line fishing</u></p> <p>L1 – Line fishing south of 24°30’S.</p> <p>L2 &amp; L3 – line fishing north of 24°30’S.</p> <p>L8 – Multi hook deep line.</p> <p><u>Quota / Access symbols</u> – RQ.</p>
<b>Fisheries Legislation</b>	<i>Fisheries Act 1994; Fisheries Regulation 2008.</i>
<b>Working Group</b>	Coral Reef Fin Fish Fishery Working group.
<b>Harvest Strategy</b>	Under Development.
<b>Gear</b>	<p>The following apparatus are currently permitted for use within the Coral Reef Fin Fish Fishery:</p> <ul style="list-style-type: none"> <li>• Hook and line apparatus;</li> <li>• Recreational fishers may use hook and line, rods and reels and spearfishing gear (exc. Hookah/SCUBA).</li> </ul> <p><i>A full description of the types of apparatus prescribed for each fishery symbol is in the Fisheries Regulation 2008.</i></p>
<b>Main management methods</b>	<p><i>All fishers</i></p> <ul style="list-style-type: none"> <li>• Permanent and seasonal spatial and temporal closures.</li> <li>• Minimum and maximum size limits.</li> <li>• No-take species.</li> <li>• Gear restrictions.</li> </ul> <p><i>Commercial only</i></p> <ul style="list-style-type: none"> <li>• Limited Access.</li> <li>• Species-specific Individual Transferable Quotas (ITQ) for coral trout &amp; redthroat emperor.</li> <li>• Combined ITQ for Other Species (OS).</li> <li>• Vessel &amp; tender restrictions.</li> <li>• Use of a Vessel Tracking System</li> </ul> <p><i>Recreational only</i></p> <ul style="list-style-type: none"> <li>• Possession limits.</li> </ul>

<b>Quota (assessed annually)</b>	Coral trout (CT) – 963t (2016/17). Redthroat emperor (RTE) – 611t (2016/17). Other species (OS) – 956t (2016/17).
<b>Fishing Season</b>	1 July – 30 June.  Two annual five-day spawning closures apply in October and November coinciding with moon phase.
<b>Commercial Fishery licences</b>	Number of Line symbols: L1 – 226, L2 – 190, L3 – 936, L8 – 6. No. quota symbols: RQ – 347.
<b>Total annual harvest by sectors</b>	Commercial: 1388t (CT – 850t, OS – 401t, RTE – 137t). Charter: OS – 142t, RTE – 79t, CT – 64t.  Recreational: approximately 103 000 individual coral trout (2014 survey). Approximately 37 000 individual redthroat emperor (2014 survey).
<b>GVP</b>	\$30.7 million (2017/18)
<b>Stock Status</b>	Coral trout ( <i>Plectropomus</i> and <i>Variola</i> spp.) listed as ‘Sustainable’ SAFS 2018. Redthroat emperor ( <i>Lethrinus miniatus</i> ) listed as ‘Sustainable’ SAFS 2018. Crimson snapper ( <i>Lutjanus erythropterus</i> ) listed as ‘Undefined’ SAFS 2018. Saddletail snapper ( <i>Lutjanus malabaricus</i> ) listed as ‘Undefined’ SAFS 2018. Red emperor ( <i>Lutjanus sebae</i> ) listed as ‘Undefined’ SAFS 2018. Golden snapper ( <i>Lutjanus johnii</i> ) listed as ‘Undefined’ SAFS 2018. Goldband snapper ( <i>Pristipomoides multidens</i> ) listed as ‘Undefined’ SAFS 2018. Spangled emperor ( <i>Lethrinus nebulosus</i> ) listed as ‘Sustainable’ SAFS 2018. Stripy snapper ( <i>Lutjanus carponotatus</i> ) listed as ‘Undefined’ QLD stock status.
<b>Accreditation under the EPBC Act (Part 13 &amp; 13A)</b>	Part 13: Accredited. Part 13A: Accredited (expires 6 March 2020).

# 1 Overview

## 1.1 Commercial fishery

The *Coral Reef Fin Fish Fishery* (CRFFF) is a line-only fishery that targets coral trout and a range of bottom-dwelling reef fish. The commercial fishery operates predominantly within the confines of the Great Barrier Reef Marine Park (GBRMP) where operators target high-value coral trout for live-export (Fig. 1; Appendix 1). The fishery however is far from one-dimensional with operators retaining redthroat emperor and a wide range of coral reef species (Appendix 2). In these instances, the fish are processed at sea and do not form part of the live-trade market. With an estimated Gross Value of Production of \$31 million (based on 2017 estimates), the commercial CRFFF is Queensland's second most valuable fishery after the *East Coast Otter Trawl Fishery*.

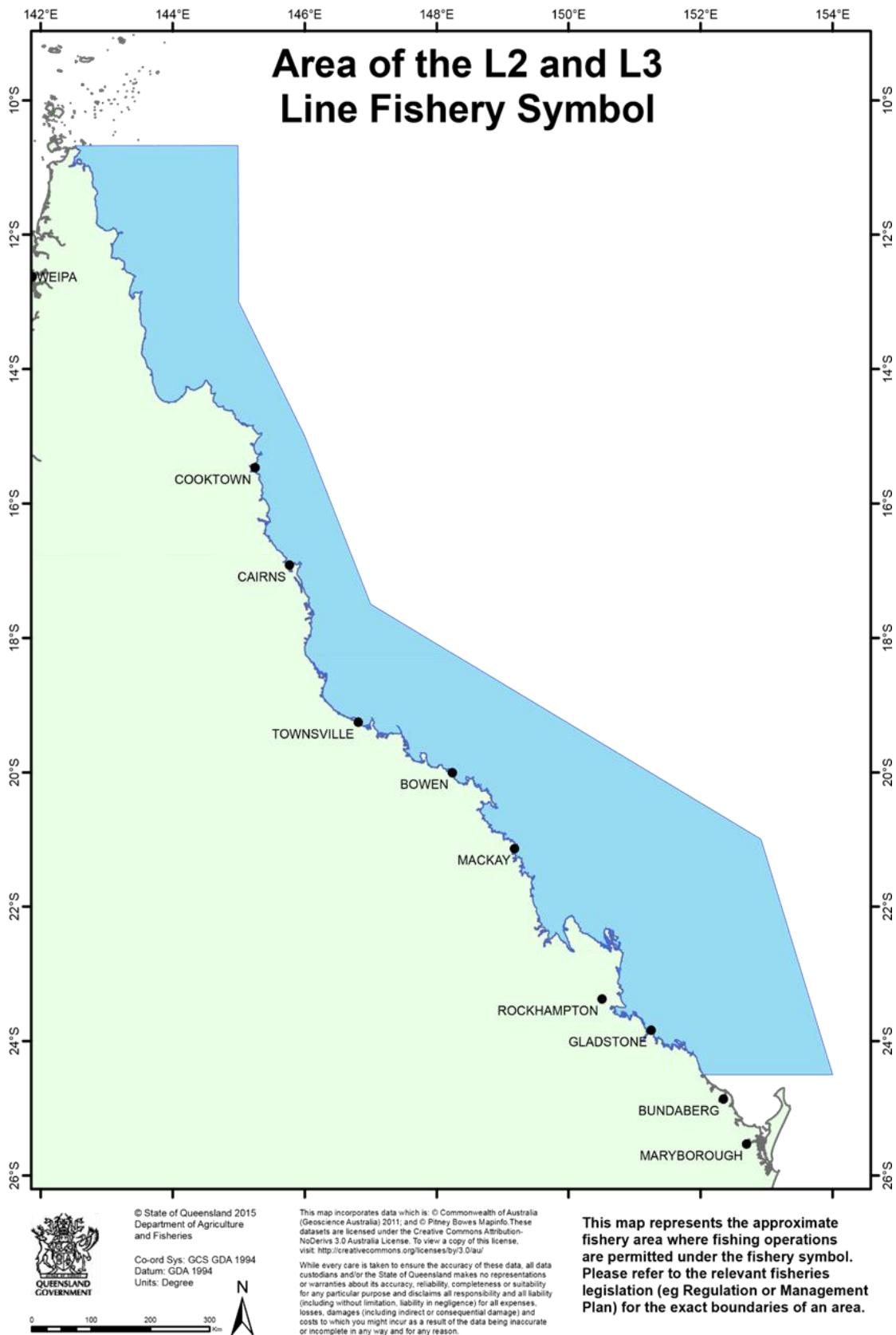
In order to access the CRFFF operators must hold both a line (L) fishery symbol and an RQ symbol. The line symbol (L) in effect governs the area where an operator can fish and the types of apparatus permitted for use. For instance, the L1 symbol incorporates tidal waters south of latitude S24°30' to the Queensland / New South Wales border (Appendix 1) and the L2/L3 fishery symbols covers tidal waters north S24°30' through to the tip of Cape York (Appendix 1; Fig. 1). While provisions governing the use of the L2 and L3 symbols are similar, only one tender can be used under an L3 vs. four tenders under the L2. The L8 fishery symbol can also be used in the CRFFF providing the operator holds quota, are fishing in waters deeper than 200m, located east of longitude 142°31'49" East (Appendix 1) and are not retaining coral trout or red emperor.

The RQ symbol does not have a prescribed fishing area; instead it signifies that a commercial operator holds quota for at least of one the catch categories. From a management perspective, the RQ symbol and the associated quota units are important, as they are the limiting factors when determining participation rates for the fishery. For example an operator cannot fish in the CRFFF unless they hold an RQ symbol plus a quota allocation for coral trout (RQ-CT), redthroat emperor (RQ-RTE) or a multi-species grouping referred to as 'other species' (RQ-OS). The latter grouping includes all remaining regulated coral reef fin fish such as cods, emperors and tropical snappers (Appendix 2).

Commercial fishing operations in the CRFFF generally consist of a number of smaller tender boats (dories) and a larger primary fishing vessel. However, there is a degree of variability within CRFFF, which encompasses smaller operations undertaking single day trips through to larger vessels with multiple dories operating over a one or two-week period.

## 1.2 Non-commercial fishing

While the commercial sector attracts considerable attention, the CRFFF includes a number of species of significant social interest with coral trout, emperor and snapper species (among others) featuring prominently in the *Queensland Statewide Recreational Fishing Survey* (Webley *et al.*, 2015). The popularity of recreational fishing is reflected in data for the charter fishery. This data shows that 129 charter fishing operators reported catch from the CRFFF during the 2016 period. Over half of this catch (142t) consisted of fish from the other species (OS) category, followed by redthroat emperor (79t) and coral trout (64t).



**Figure 1.** The prescribed fishing area for the L2 and L3 fishery symbols that represent the primary fishing groups for the Coral Reef Fin Fish Fishery (CRFFF). Operators are permitted fish for CRFFF below the southern border of the L2/L3 fishing area providing they hold an L1 fishery symbol and the relevant quota.

A full account of the catch and effort data for the charter fishery is available through Qfish— Queensland’s publicly accessible data mining site (<http://qfish.fisheries.qld.gov.au/>). Additional information on the *Queensland Statewide Recreational Fishing Survey* is available on the DAF website: <https://www.daf.qld.gov.au/>

In addition to the recreational and charter fishing sectors, species retained in the CRFFF will be harvested by Aboriginal peoples and Torres Strait Islander peoples. Catch and effort in this fishing sector remains the least understood. However, DAF anticipates that this sector has comparatively low levels of effort with fishing activities aligning closely with the recreational fishing sector.

## 2 Legislation & Advisory Bodies

The CRFFF is managed in accordance with the broader objectives of the *Fisheries Act 1994* and the *Fisheries Regulation 2008*. The fishery has an advisory body in place, the *Coral Reef Fin Fish Fishery Working Group* (CRFWG), which predates the release of the *Queensland Sustainable Fisheries Strategy 2017–2027*. The specific objectives of the CRFWG are to review the annual commercial quota for CT; to assist with the development of a formal CRFFF harvest strategy; and to provide advice to Fisheries Queensland on operational and management issues.

The CRFWG includes a wide range of stakeholders from the scientific community, management agencies, conservation groups, commercial, charter and recreational fishers. Some of the current and emerging needs identified by the CRFWG include:

- Development of harvest strategy for all sectors and key species by 2020.
- To review fishing rules, regulations and access arrangements as part of developing harvest strategies to minimise regulation and ensure rules are clear and practical.
- The commercial OS quota category covers numerous species. It does not represent a management unit consistent with the objectives of the Strategy and there is a need to ensure key species or those at risk from fishing pressure are effectively managed through harvest strategies. Some species in the OS quota category are long-lived (with low natural mortality), grow to a large size, aggregate to spawn, and have sequential sex change. These biological characteristics make them more vulnerable to fishing pressure.

Prior to 2015, the CRFFF was managed through the *Fisheries (Coral Reef Fin Fish) Management Plan 2003*. In April 2015, the Management Plan was repealed and the management strategy consolidated into the *Fisheries Regulation 2008*.

## 3 Key Management Controls

The CRFFF manages catch and effort using a number of input and output controls including individual transferable quotas (ITQs), gear restrictions, vessel restrictions and spatial/temporal closures. Vessel length is restricted to a maximum of 20m and tenders are limited by number, size and proximity to the primary vessel *i.e.* they must stay within 5 nautical miles from primary boat, if not on the same reef. Gear is restricted to three fishing lines at a time with no more than six hooks (total).



Queensland utilises a range of spatial and temporal closures to manage catch and effort across fisheries. In the CRFFF this includes the use of two five-day spawning closures situated in October and November. These closures apply to all line fishers targeting coral reef fin fish (commercial, charter, recreational) operating on the Queensland east coast between latitude 10°41'S and 24°50'S to the eastern boundary of the GBRMP<sup>1</sup>. The primary purpose of the closures is to provide additional protection to coral reef finfish species (Appendix 2) that form spawning aggregations around the new moon. As majority of the fishing activity occurs within the GBRMP, provisions governing the use of marine resources within the marine park also exert significant influence on the extent of all CRFFF operations (commercial, recreational and charter fishing).

Individual Transferable Quotas (ITQs) have been in use in the CRFFF since 2004. The quota year for commercial fishers runs from 1 July to 30 June and the fishery utilises a multi-dimensional ITQ system that incorporates three key categories: coral trout (CT), redthroat emperor (RTE) and other species (OS). The quota setting process for each category varies with CT operating under a more advanced system. Under this system (introduced in 2014) the annual CT quota is set using a series of decision rules that evaluate the performance of the fishery. In comparison, the quota-setting process for the RTE and OS categories are largely based on historical catch data. Going forward, DAF anticipates that RTE and sections of the OS category will transition to a quota setting process that is analogous to the one used for CT. The recreational and charter fishing sectors are not managed or included in the current quota limits.

Minimum (and maximum for some species) size limits apply to all regulated species in the recreational, charter and commercial sectors. Commercial fishers participating in the fishery are required to report catch and effort to Fisheries Queensland through quota reporting systems and compulsory logbooks. No-take limits are in place for seven coral reef fin fish and include barramundi cod, potato cod, Queensland groper, chinaman fish, humphead Maori wrasse, paddletail and red bass and are applied across all sectors.

Refer to the *Fisheries Act 2008* (available at: <https://www.legislation.qld.gov.au/>) for a full account of the rules governing the use of the L and RQ fishery symbols. The catch harvested by Aboriginal peoples and Torres Strait Islander peoples is managed in consideration of the *Native Title Act 1993*.

## 4 Assessment History

Coral trout and RTE have been the subject of a detailed stock assessment with the results indicating that both were sustainably fished (Leigh *et al.*, 2006, 2014). The complete stock assessment for CT trout and RTE are available to the public at: <http://era.daf.qld.gov.au/>

In addition to stock assessments, a number of the target species including CT and RTE have been included in the National *Status of Australian Fish Stocks* (SAFS) and Queensland Stock Status processes. Of the nine species with evaluations, only three (coral trout, redthroat emperor, and spangled emperor) had sufficient information to assign a stock status (Appendix 3). In late 2017, steps were taken to address this situation with the Fisheries Queensland expanding the monitoring

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<sup>1</sup> A small number of long-term charter fishing operations are permitted conditional access to the fishery during this period.

program to include five additional species from OS management unit: stripey snapper<sup>2</sup> (*Lutjanus carponotatus*), saddletail snapper<sup>2</sup> (*Lutjanus malabaricus*), red emperor (*Lutjanus sebae*), spangled emperor<sup>2</sup> (*Lethrinus nebulosus*) and crimson snapper<sup>2</sup> (*Lutjanus erythropterus*). The primary purpose of expanding this aspect of the monitoring program was to increase management's capacity to assign an accurate stock status evaluation to these species. A full list of the species with sustainability assessments has been provided in Appendix 3. Additional information on the stock status assessments of each species can be obtained through the SAFS website (<http://fish.gov.au/>) and through the DAF *Sustainability Reporting* website (found at <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-compliance/data/sustainability-reporting>).

More generally, the OS component of the CRFFF has been the subject of a 'Level 1: Scale, Intensity, Consequence, Analysis (SICA) (Smith & McCormack, 2007) which focused on the direct impacts of the fishery on the most vulnerable species. A risk assessment of the spawning closures was also completed in 2009 to determine the best option to protect CT and other coral reef fin fish species (Walshe & Slade, 2009).

While not dealing specifically with risk, the CRFFF undergoes broad-scale sustainability assessments linked to the *Wildlife Trade Operation* (WTO) approvals process. A WTO approval is issued under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and is required for all fisheries that export product caught and retained in Australian waters. While more complicated, the WTO approval effectively signifies that a fisheries as a whole is managed sustainably.

## 5 Licence & Fishery Symbols

Access to Queensland's commercial fisheries is managed using fishery symbols.<sup>3</sup> These symbols define what gear can be used in each fishery (e.g. N = Net, L = line, T = trawl) and the area of operation. While operators can have multiple fishery symbols attached to their licence (e.g. N1, N2 and L1 or a L1 and T1), they can only use one fishery symbol at a time. The notable exceptions to this are a) the crab (C1) fishery symbol that can be used in conjunction with a line (L) and net (N) fishery symbol; and b) fishing symbols related to quota, such as those used in the CRFFF. In each fishery, the total number of symbols represents the number of fishers that could potentially access the fishery at any one time. This differs from data on the number of 'active' licences, which represents the number of operators that have used their symbol to access the fishery over a 12 month period.

Licensing arrangements for the CRFFF have evolved through time with the area of operation and permitted activities becoming more prescriptive. The L1, L2 and L3 symbols were introduced in 1993 and superseded the more generic Line (L) fishing symbol. This was followed by the introduction of the L8 (deep water) fishing symbol in 1995. However, the most significant change for the CRFFF was the introduction of quota and the RQ symbol in 2004 (Table 1).

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<sup>2</sup> Previously known by another name. Catch data and QFish are recorded under synonym.

<sup>3</sup> Data on the total number of fishing symbols represents the total number of operators that can (potentially) access the fishery at one point in time. This differs from the number of 'active' licences that shows the number of operators that have reported catch from the fishery over a 12-month period. In the CRFFF the total number of operators that can access the fishery will be limited by a) the number of RQ symbols and b) the distribution of quota.

**Table 1.** An overview of the total number of line (L) and reef quota (RQ) fishery symbols that can potentially access the CRFFF. RQ symbols were implemented in 2004 financial year. Licence holders wanting to access the CRFFF must hold a L1, L2, L3 or L8 symbol and a RQ symbol with quota.

Year	No. Symbols				
	L1	L2	L3	RQ	L8
1992–1993	664	85	607	-	-
1993–1994	774	99	705	-	-
1994–1995	915	122	825	-	8
1995–1996	1080	144	979	-	10
1996–1997	1340	189	1200	-	20
1997–1998	1558	226	1381	-	32
1998–1999	1643	241	1452	-	44
1999–2000	1634	239	1446	-	24
2000–2001	1549	235	1360	-	14
2001–2002	1540	235	1351	-	12
2002–2003	1535	235	1345	-	13
2003–2004	1527	235	1335	403	12
2004–2005	1514	233	1302	411	8
2005–2006	1440	216	1228	376	6
2006–2007	1399	210	1201	373	7
2007–2008	1376	209	1200	373	7
2008–2009	374	204	1109	370	7
2009–2010	241	204	1102	370	7
2010–2011	243	204	1100	370	7
2011–2012	241	204	1088	370	7
2012–2013	238	202	1057	367	7
2013–2014	238	202	1043	365	7
2014–2015	232	195	994	356	6
2015–2016	231	192	969	350	6
2016–2017	226	190	936	347	6

Licensing data has shown that the number of L1, L2 and L3 symbols have declined since 1999. This decline was more pronounced in the L1 fishery symbol where total numbers reduced by around 86% over the 1999 to 2017 period (Table 1; Fig. 2a). This is in contrast to the number of L2 and L3 fishery symbols, which declined by 21% and 36% (respectively) over the same period. This discrepancy is

largely attributed to a 2008/09 latent effort review that removed the majority of the L1 symbols from the system (Fig. 2a). As the L2 and L3 were not subject to the same review process, the numerical decline in these symbols was less severe (Table 1, Fig. 2a). The L8 fishery is a small component of the CRFFF and in 2017 there were only six L8 fishery symbols registered by DAF; down from a historical high of 44 (Table 1).

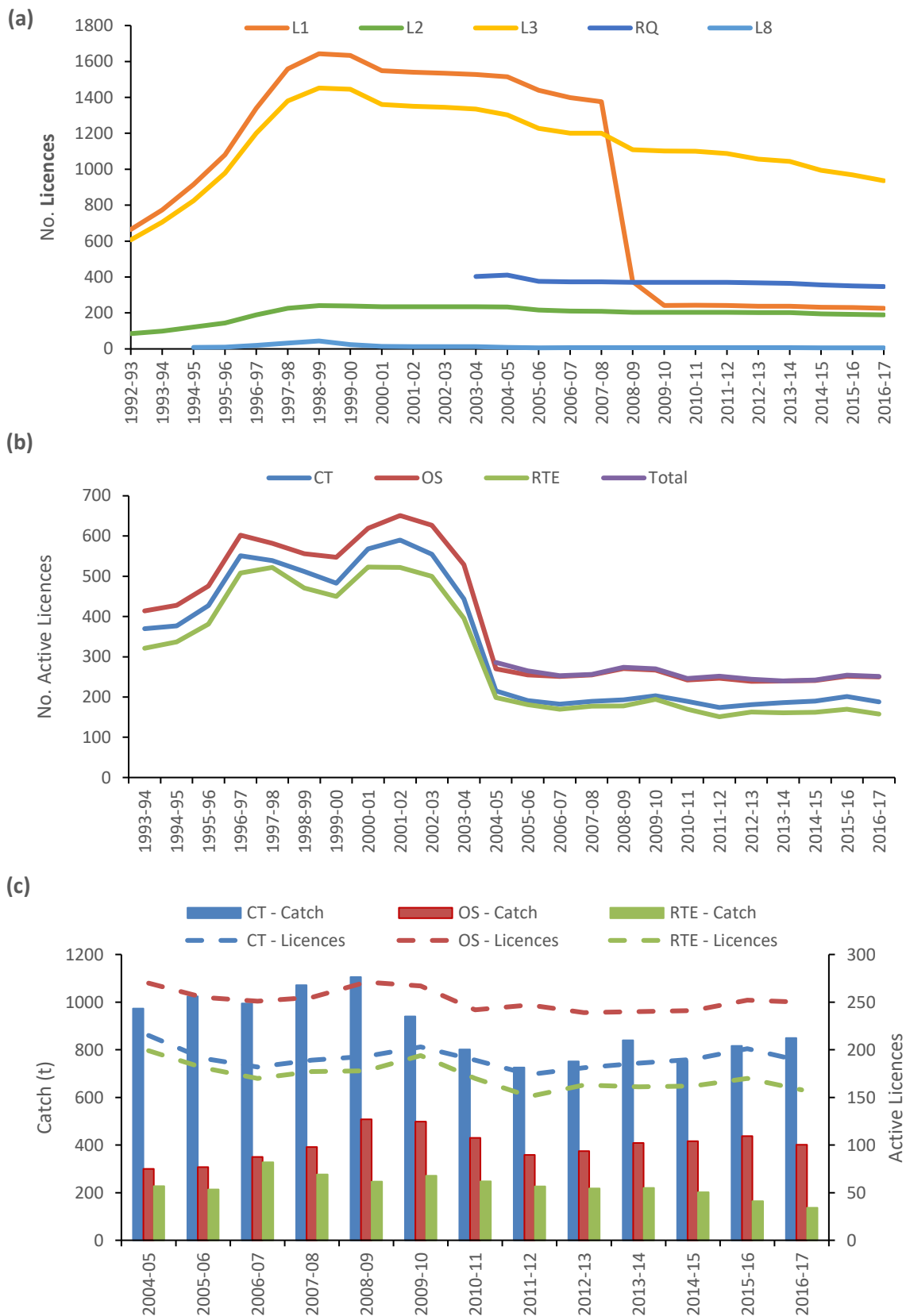
The RQ symbol has remained relatively stable since its introduction in 2004. Licensing data shows that the number of RQ symbols experienced an initial decline of 6% (2005–2007) before stabilising at around 370. This decline can be attributed to the Commonwealth structural adjustment program related to the introduction of the Representative Area Program (RAP). This period of stability lasted until 2012/13 (Table 1) when the fishery experienced an almost identical reduction in number of fishing symbols. The most recent declines are largely attributed to the introduction of net free zones and a corresponding buyback of licence packages. While this buyback was targeted at net symbols, a number of RQ symbols were attached to platforms surrendered as part of this process (Department of Agriculture and Fisheries, 2016a, 2016b).

Data on the number of licences active in the CRFFF can be split into a pre and post-2004 period (Table 2). Participation rates were much higher prior to 2004 when the fishery was largely managed through input controls. With a maximum participation rate of 679 in 2001/02, the number of active licences in the pre-quota period was two to three times that observed post-2004 (Table 2, Fig. 2b)<sup>4</sup>. This period also had a higher degree of variability with respect to the number of operators accessing the fishery and contrasts with the post-2004 period where the number of active licences experienced smaller within-year fluctuations (Fig. 2b). During this period (post-2004), around 70% of all RQ symbols were active in the fishery each year (Table 2).

When compared to the entire fishery, it can be more difficult to interpret data on the number of licences that are active in each quota category. This is because DAF reporting systems define an 'active' licence as any licence that reports catch from the fishery irrespective of the days fished, the frequency of fishing events, or the amount of catch reported. To this extent, the active licence data does not take into consideration the intentions of the fisher nor does it differentiate between species taken opportunistically and those that are actively targeted. These factors are significant as the active licence data may not be an accurate reflection the current fishing environment or the broader priorities of the fishery. For example, the OS category has the highest number of operators reporting catch (Table 1, Fig. 2b–c) despite CT being the main target species for the fishery. It is likely that L2 and L3 operators are taking smaller quantities of OS while targeting CT, whereas L1 fishers are less likely to be targeting trout and more likely to be accessing OS quota species. It should also be noted that number of permanent OS quota holders is higher when compared to the CT and RTE management units.

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<sup>4</sup> RQ symbols had minimum qualification criteria, resulting in many L symbol holders not qualifying for an RQ symbol.



**Figure 2.** Licence summary for the CRFFF: (a) the total number of line (L1, L2, L3, L8) and reef quota (RQ) fishery symbols; (b) number of licences active in fishery from 1993/94–2016/17; (c) active licences vs. catch for the coral trout, redthroat emperor and the other species management units.

**Table 2.** The number of active licences for line (L1, L2, L3, L8) (prior to 2003/04) and reef quota (RQ) (2004 onwards) fishery symbols taking regulated coral reef fin fish in the coral trout (CT), redthroat emperor (RTE) and other species (OS) management units. Total active RQ symbols are non-cumulative over the three quota restricted species as operators may report catch from multiple category. The fishery season runs from 1 July to 30 June.

Financial Year	Active Licences			
	CT	RTE	OS	Total
1993–1994	370	321	415	459
1994–1995	377	337	428	470
1995–1996	427	381	477	524
1996–1997	551	508	602	646
1997–1998	539	522	583	636
1998–1999	512	471	556	596
1999–2000	483	450	548	587
2000–2001	568	523	624	658
2001–2002	590	522	654	679
2002–2003	555	500	630	652
2003–2004	444	396	530	549
2004–2005	215	199	270	286
2005–2006	191	181	255	265
2006–2007	182	170	251	253
2007–2008	189	177	255	256
2008–2009	193	178	271	274
2009–2010	203	194	267	270
2010–2011	189	170	242	246
2011–2012	174	151	247	252
2012–2013	181	163	239	244
2013–2014	186	161	240	240
2014–2015	190	162	241	242
2015–2016	201	170	252	254
2016–2017	188	158	250	251

## 6 Catch & Effort

Monitoring systems used by DAF only account for reported catch and therefore cannot fully take into consideration unsuccessful fishing events. If for example, an operator was targeting redthroat emperor in the CRFFF but only caught snapper, catch and effort would be reported against the *Rocky Reef Fin Fish Fishery* (RRFFF) not the CRFFF. Similarly, if an operator in the CRFFF retains a snapper and a trevally in a single fishing event then they would technically be fishing in both the RRFFF and the *East Coast Inshore Fin Fish Fishery* (ECIFFF). The primary reason for this is that Queensland uses the species targeted/retained as the defining feature of the RRFFF, CRFFF and ECIFFF. These points are important as catch and effort data submitted to DAF may not reflect the intentions of a fisher at that point in time and/or may provide a truncated assessment of the current fishing environment.

While noting the above caveats, catch and effort data has been included in the scoping study as it provides a broader overview of how the fishery operates through time and insight into the direct fishing pressures exerted on a species or species complex. To this extent, this data allows inferences to be drawn with respect to effort fluctuations through time and changing fishing behaviours.

### 6.1 Effort

In the CRFFF, total effort is recorded as both primary vessel days and associated dory days. Of the two parameters, dory days<sup>5</sup> are considered more representative of the total effort being utilised in the fishery. However, tracking trends in primary fishing days can be useful as it provides insight into participation rates and the broader dynamics of the fishery (Table 3). This is considered to be of particular importance in fisheries where changing fishing behaviours are more pronounced due to the smaller number of target species.

Effort trends (Table 3; Fig. 3) for the fishery mirror those observed in the licensing data (Fig. 2b) and reflect key changes in the CRFFF management regime. For example, the largest decline in effort is linked to the introduction of quota and the RQ fishery symbol. This change restricted the number of operators that could retain regulated coral reef fin fish species and by extension the amount of effort that can be used in the fishery. Accordingly, the introduction of quota served its broader purpose of providing management with a mechanism to control effort applied to the CRFFF.

While effort has been relatively stable since 2004, there remains a small degree of variability; particularly in the number of dory days (Fig. 3). This is primarily due to dory days being more sensitive to a changing fishing environment including variations in how operators structure their business from year to year. Both parameters registered small declines from around 2009/10 with primary vessel effort reducing from around 35,000 days to 28,000 days in 2011/12 and dory effort declining from 122,000 days to 100,000 days (Fig. 3). While it is difficult to quantify, a number of factors would have contributed to the observed declines in effort. For example, anecdotal evidence suggests that external factors such as cyclones exert significant influence on this fishery; the effects of which can be long lasting (*pers. comm.* T. Roberts, DAF). This inference is supported by the 2016/17 effort data where the impact of tropical cyclone Debbie is still being felt by the fishery.

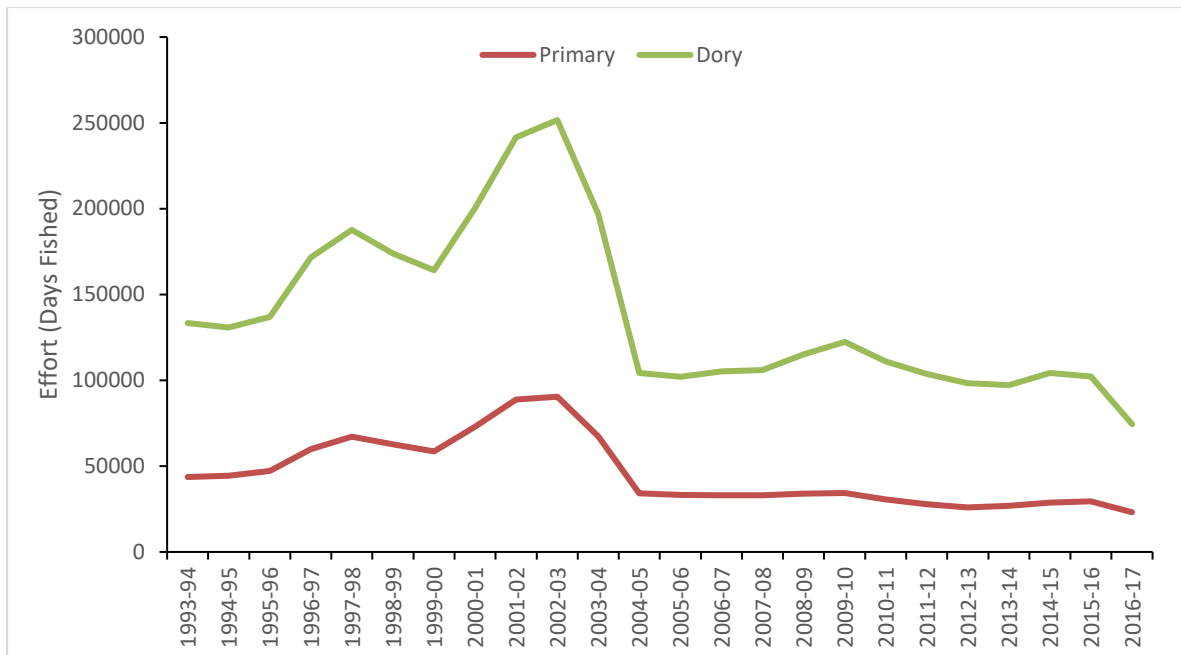
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<sup>5</sup> Dory days represent the number of dory days (exc. primary vessel) plus primary days where no tenders were used.

**Table 3.** The yearly total effort (days fished) for primary boats and dories targeting RQ restricted finfish in the CRFFF including a breakdown for each of respective quota categories. The fishery season runs from 1 July to 30 June.

Fin. Year	Effort (days fished)							
	Total		CT		RTE		OS	
	Primary	Dory	Primary	Dory	Primary	Dory	Primary	Dory
1993–1994	43753	133318	17756	54479	13179	41953	12818	36886
1994–1995	44357	130832	17933	53673	12519	38451	13905	38708
1995–1996	47299	136840	19644	57999	12742	38905	14913	39936
1996–1997	59929	171525	23782	69181	17279	51565	18868	50779
1997–1998	67093	187676	25319	72579	19043	54291	22731	60806
1998–1999	62688	173769	23146	65922	17052	48985	22490	58862
1999–2000	58600	164096	21712	62401	16220	46766	20668	54929
2000–2001	73031	200388	27651	76417	20234	58069	25146	65902
2001–2002	88732	241553	33733	92000	23899	68405	31100	81148
2002–2003	90450	251655	34107	94599	24999	73718	31344	83338
2003–2004	67390	196827	25029	73970	19577	60375	22784	62482
2004–2005	34111	104292	12986	40688	9617	31579	11508	32025
2005–2006	33249	102112	12274	38259	9199	30489	11776	33364
2006–2007	33046	105185	12020	39000	9382	31836	11644	34349
2007–2008	32949	106021	11956	39186	8759	30639	12234	36196
2008–2009	33912	115086	12287	42877	8508	31737	13117	40472
2009–2010	34342	122332	12361	45645	8763	32487	13218	44200
2010–2011	30517	111044	10955	41123	7900	30428	11662	39493
2011–2012	27722	103712	10260	38975	6793	27598	10669	37139
2012–2013	26012	98407	9721	37473	6296	25827	9995	35107
2013–2014	26968	97243	9928	36567	6598	25860	10442	34816
2014–2015	28674	104301	10703	39707	6763	26610	11208	37984
2015–2016	29575	102275	11052	39413	6781	25347	11742	37515
2016–2017	23110	74463	8589	29034	5050	17994	9471	27435



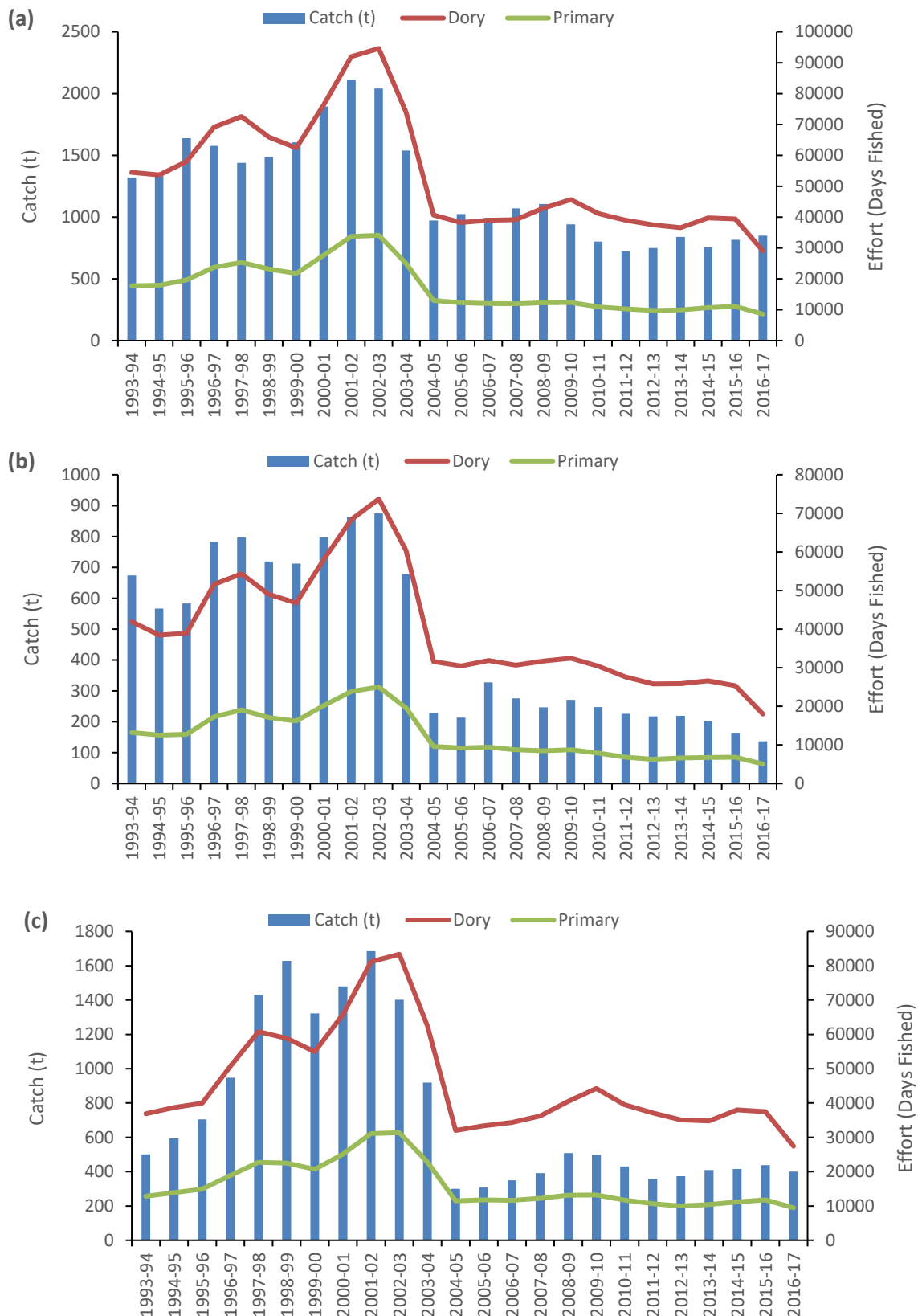


**Figure 3.** Effort comparisons for the CRFFF based on the number of days fished by primary vessels and the associated tenders. Data accounts for all three quota categories.

Effort trends for each of the respective quota categories were similar to that observed in the whole of fishery data (Table 3, Fig. 4). Following a post-quota correction, effort levels in all three categories increased progressively until the 2008/09 season. After which (2009/10–2016/17), reported effort (dory days) declined by around 32% for CT and OS species and 43% for RTE (Table 3, Fig. 4). DAF notes though that the extent of this decline was accentuated by a more substantial drop-off in effort (dory days) over the 2015/16 and 2016/17 seasons (Fig. 4).

Comparisons with effort distribution maps shows that the vast majority of CT effort occurs between Yeppoon and Cooktown (Appendix 4), with the most concentrated effort occurring around Cairns. Redthroat emperor effort is also highly focused toward the GBR region and the effort extends from Fraser Island to Cairns. The most concentrated effort covers Bowen to Cairns.

Distribution maps for the OS category shows that effort is more widely dispersed along the Queensland coastline and includes both inshore and offshore environments (Appendix 4). As the OS category includes over 100 reported species, the footprint of the OS effort would (most likely) have been expanded by the inclusion of species with smaller catch totals. For example, the majority of the catch reported from the OS management unit consists of emperor, spangled emperor, goldband snapper, saddletail snapper, and stripey snapper (Appendix 4). These five species combined with CT and RTE account for almost 90% of the total CRFFF line catch (based on 2014–2017 records). The combined distribution of effort for these five (OS) species would arguably provide a better representation of the current fishing environment for the OS category (Appendix 5).



**Figure 4.** Yearly catch (t) and effort (days fished) for (a) Coral Trout (RQ-CT), (b) Redthroat Emperor (RQ-RTE) and (c) Other Species (RQ-OS). The fishing season runs from 1 July to 30 June.

## 6.2 Catch

Catch trends for the entire fishery (CT, RTE and OS) are provided in Table 4 with a comprehensive overview of the species compositions provided in Appendix 6. The total catch for all three categories followed similar trends: increasing steadily until 2002/03 before a sharp decline with the introduction of the RQ symbol and species quotas (Fig. 3). Coral trout dominates the CRFFF catch; doubling that reported for RTE and OS complex (Table 3). This is despite the OS quota having the highest number of active licences (Table 2; Fig. 1b). Yearly coral trout catch is currently fished to capacity (Table 5). However the catch for RTE and OS quota groupings are currently below 50% for the past 3 years.

**Table 4.** An overview of the yearly total catch (t) for quota species (Coral Trout CT; Redthroat Emperor RTE; Other Species OS) retained for sale in the CRFFF. The fishery season runs from 1 July to 30 June.

Year	CT	RTE	OS	Total
1993–1994	1320	674	501	2496
1994–1995	1358	566	594	2519
1995–1996	1638	583	704	2925
1996–1997	1577	783	948	3308
1997–1998	1440	797	1430	3667
1998–1999	1487	719	1628	3834
1999–2000	1606	712	1323	3641
2000–2001	1894	798	1480	4172
2001–2002	2112	863	1684	4659
2002–2003	2041	875	1402	4318
2003–2004	1539	679	920	3137
2004–2005	973	228	300	1501
2005–2006	1025	213	307	1545
2006–2007	994	328	349	1671
2007–2008	1071	276	392	1738
2008–2009	1105	247	508	1860
2009–2010	940	271	498	1709
2010–2011	801	248	430	1479
2011–2012	725	226	358	1310
2012–2013	751	218	374	1343
2013–2014	840	219	409	1468
2014–2015	753	202	416	1371
2015–2016	817	164	437	1418
2016–2017	850	137	401	1388

**Table 5.** An overview of the yearly total catch quota and proportion utilised for quota groupings (coral trout, CT; redthroat emperor, RTE; other species, OS). The fishery season runs from 1 July to 30 June. \*2017/18 data is incomplete

Year	CT		RTE		OS	
	Total Quota (kg)	Utilised	Total Quota (kg)	Utilised	Total Quota (kg)	Utilised
2014–2015	1,087,998	77%	610,877	31%	955,602	47%
2015–2016	916,909	96%	610,877	26%	955,602	49%
2016–2017	916,909	96%	610,877	21%	955,602	44%
2017–2018*	963,000	77%	610,877	16%	955,602	36%

Non-standardised or ‘raw’ CPUE is limited in that it is rarely proportional to the abundance of the species over a whole exploitation history or the entire geographical range (Maunder *et al.*, 2006). Numerous factors can affect catch rates within a particular fishery and can bias CPUE as an index of abundance. Thus, consideration needs to be given to how confounding factors may influence non-standardised CPUEs. For example, cyclones have been shown to have a long-lasting influence on catch rates for this fishery. Similarly, non-standardised catch rates for the OS category may mask interspecific differences and will provide limited insight for individual species.

Standardised CPUE considers the effects of these factors and the dynamics of a fishery or species including management changes (e.g. minimum legal-size limits). The difficulty being that standardised catch rates are not available for the majority of species. In the CRFFF, this includes all species regulated under the OS category (Appendix 2). However, standardised catch rates are available for both coral trout and redthroat emperor. These were compiled as part of a broader stock assessment (Leigh *et al.*, 2006; Leigh *et al.*, 2014) and have been provided in Appendix 7 for comparative purposes.

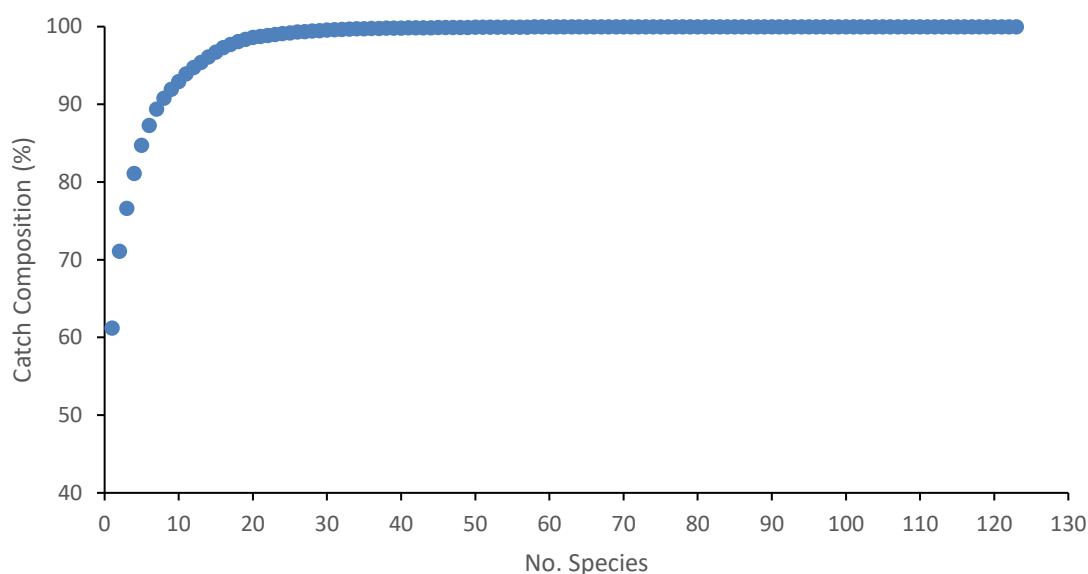
### 6.3 Species composition

An RQ licence allows take of any regulated coral reef finfish in the L1, or L2 and L3 areas, within quota limits, except for seven no-take species. Coral trout comprise six species in the *Plectropomus* and *Variola* genera and are all recorded as part of a single quota management unit. These species include the common coral trout (*Plectropomus leopardus*), barcheek coral trout (*P. maculatus*), bluespotted coral trout (*P. laevis*), passionfruit coral trout (*P. areolatus*), yellow-edge coronation trout (*Variola louti*) and white-edge coronation trout (*V. albimarginata*).

At a whole of fishery level, the CRFFF retains over 100 species or species complexes but the bulk of the catch is made up of several fin fish. For example, eight species/complexes made up 90% of the total CRFFF catch in 2015/16, CT, RTE, red emperor, spangled emperor, goldband snapper<sup>6</sup>, saddletail snapper<sup>6</sup>, stripey snapper<sup>6</sup>, and unspecified cod (Fig. 5). As expected, the OS catch data includes a wide array of species and reflects the opportunistic nature of the OS fishery (Appendix 6). The prominence of emperor, snapper and cod species indicates that the fishery has multiple components targeting different key species (Fig. 5; Appendix 6). While it is difficult to quantify based

<sup>6</sup> Previously known by another name. Catch data and QFish are recorded under a synonym.

on the available data, the OS component of the fishery may display regional and temporal variability with respect to the species being targeted and retained.



**Figure 5.** Catch summary for the CRFFF; cumulative species curve representing the retained catch for 2015/16.

## 6.4 Bycatch

Fishers targeting coral trout use specialised gear to target their fishing efforts including view buckets that allow operators to target individual fish or ascertain what fish are in the area. As the CT fishing operations are highly targeted, bycatch in this sector of the fishery will be limited.

In this fishery, bycatch are mostly composed of target species that do not satisfy legal size restrictions (Department of the Environment and Energy, 2017). However, the fishery is likely to interact with a number of low-value species that may be discarded as bycatch. DAF notes though that operators with a line (L1, L2 or L3) fishery symbol can retain product as part of the RRFFF or ECIFFF. Therefore, this portion of the catch may be retained for sale as part of another line fishery. More broadly, information on discard rates for low-value species or interactions with unwanted species in the CRFFF is limited.

## 6.5 Species of Conservation Interest

Logbook data reveal few interactions with species of conservation interest (SOCl). Interactions are defined as any physical contact with a protected species, including interactions with fishing gear and vessel collisions. The logged interactions since 2003 are limited to cetaceans, marine turtles, one seabird and 'no-take' fin fish (Table 6).

Since 2016 a high number of no-take fin fish have been encountered in the in the CRFFF, but few interactions (<10% per species annually) have been reported as fatal (Appendix 8). The increase is attributed to improved education on SOCl interaction reporting requirements. The data contained one outlier with 15 dolphin interactions reported in 2007. Given the nature of the fishery and the apparatus used, these interactions will most likely be with the vessel and (potentially) include a pod of dolphins

following or interacting with one or more of the vessels. There are no logged interactions with sea snakes, crocodiles, dugongs, sharks and rays, sawfish, syngnathids or terrestrial mammals. Appendix 8 gives the full break down of logged interactions by species

**Table 6.** Summary of interactions reported in the Species of Conservation Interest (SOI) logbook by fishers operating in the Coral Reef Fin Fish Fishery (CRFFF). Data includes all reports and encompasses Dropline (Demersal longline), Handline, and Line fishing operations.

Species	Year															Total
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>Whales</b>	0	0	0	4	0	1	2	0	0	0	0	0	0	0	1	<b>8</b>
<b>Dolphins</b>	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	<b>15</b>
<b>Marine turtles</b>	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	<b>5</b>
<b>Sharks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Sawfishes &amp; Rays</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Crocodiles</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Seabirds</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	<b>1</b>
<b>Sea snakes</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Teleosts</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	918	642	<b>1560</b>
<b>Dugong</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Syngnathids</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>Non-SOCI reports</b>	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>24</b>

## 7 Key References and Links

Leigh, G. M., Campbell, A. B., Lunow, C. P. & Neill, M. F. O. (2014). *Stock assessment of the Queensland east coast common coral trout (Plectropomus leopardus) fishery*. Department of Agriculture, Fisheries and Forestry, Queensland Government. Brisbane, Queensland.

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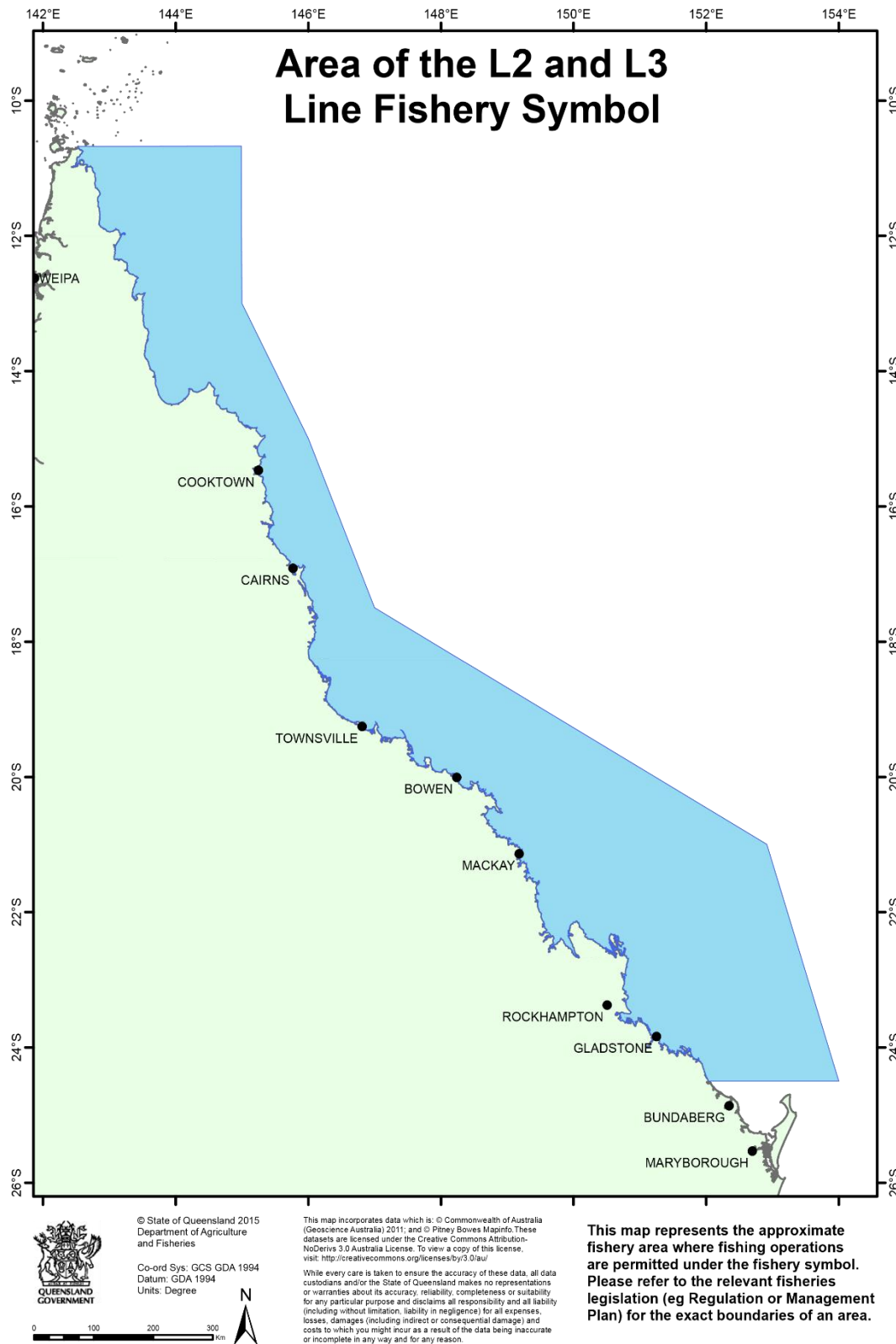
Webley, J., McInnes, K., Teixeira, D., Lawson, A. & Quinn, R. (2015). *Statewide Recreational Fishing Survey 2013-14*. Queensland Government. Brisbane, Australia.

## 8 Appendix

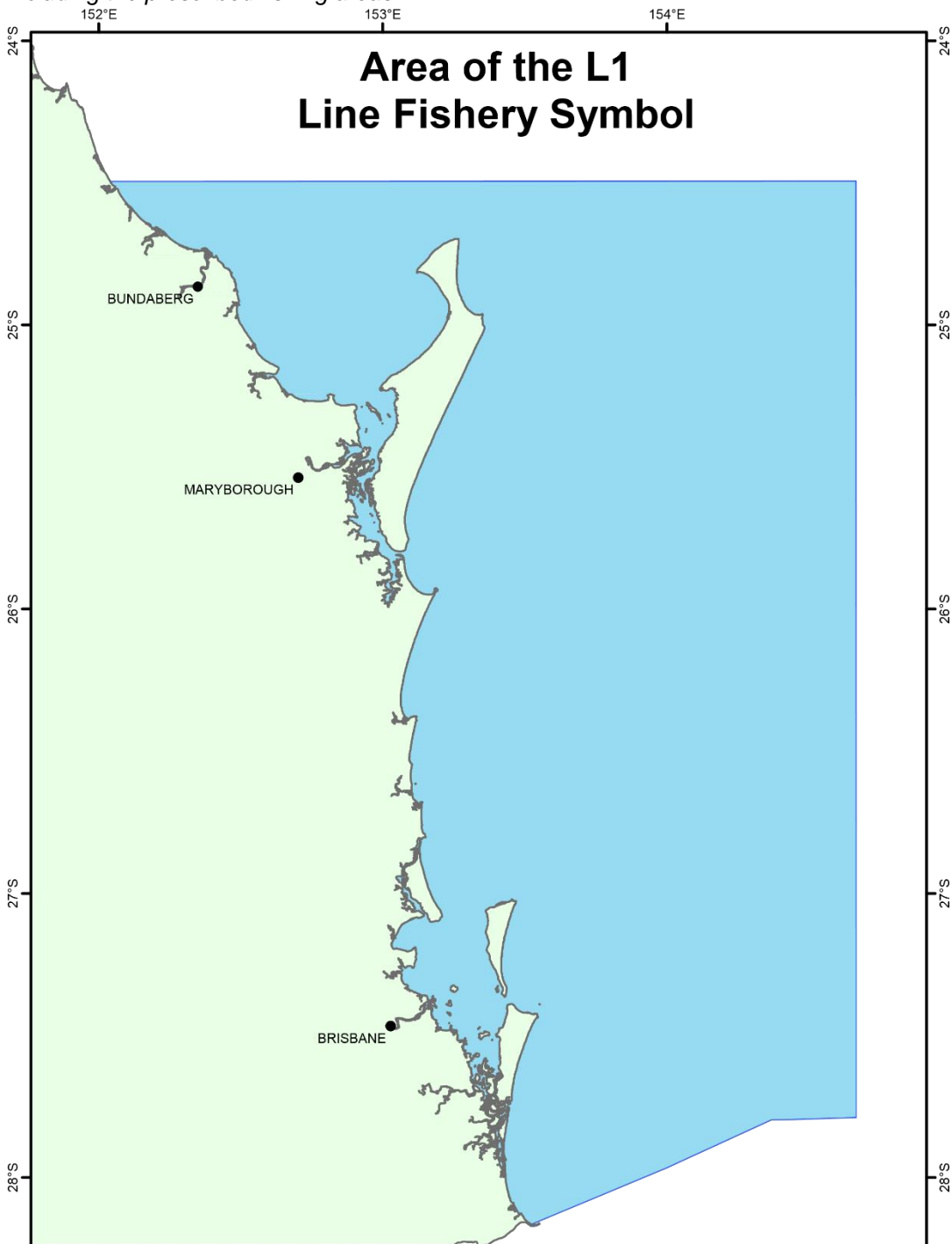
- Appendix 1 – Fishing area boundaries for key net and line fishing symbols used in the CRFFF.
- Appendix 2 – Species regulated under the RQ quotas (Fisheries Regulations 2008).
- Appendix 3 – Summary of the species retained in the Coral Reef Fin Fish Fishery (CRFFF) that assessed as part of the National Status of Australian Fish Stocks (SAFS) and Queensland Stock Status processes.
- Appendix 4 – Effort distribution maps over the 2014/15, 2015/16 and 2016/17 seasons.
- Appendix 5 – Effort distribution maps for the 5 key OS species over the 2014/15, 2015/16 and 2016/17 seasons.
- Appendix 6 – Species composition data for the CRFFF.
- Appendix 7 – *Standardised catch rates (CPUE) for coral trout and redthroat emperor*
- Appendix 8 – Detailed overview of the SOCI interactions reported from the CRFFF.



**APPENDIX 1 — Fishery symbols permitted to fish in the Coral Reef Fin Fish Fishery (CRFFF) including the prescribed fishing areas.**



**APPENDIX 1 cont. — Fishery symbols permitted to fish in the Coral Reef Fin Fish Fishery (CRFFF) including the prescribed fishing areas**



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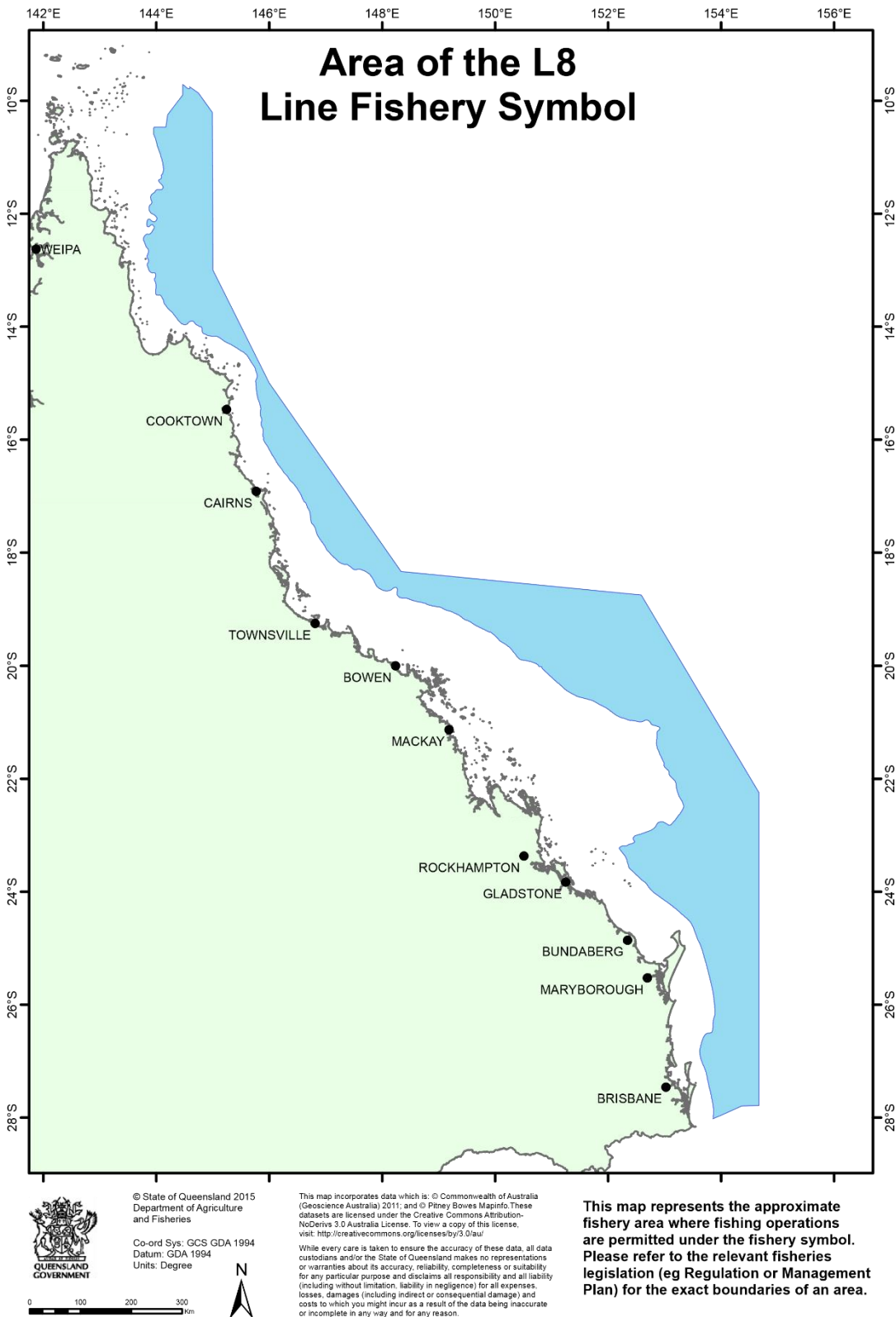


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**This map represents the approximate fishery area where fishing operations are permitted under the fishery symbol. Please refer to the relevant fisheries legislation (eg Regulation or Management Plan) for the exact boundaries of an area.**

**APPENDIX 1 cont. — Fishery symbols permitted to fish in the Coral Reef Fin Fish Fishery (CRFFF) including the prescribed fishing areas**



**APPENDIX 2 — Species regulated under the RQ quotas (Fisheries Regulations 2008)**

Species Grouping	Common name	Scientific name	Species Grouping	Common name	Scientific name	
<b>Particular cod and grouper</b>	Barramundi cod	<i>Cromileptes altivelis</i>		Potato rockcod	<i>Epinephelus tukula</i>	
	Bar rockcod	<i>Epinephelus ergastularius</i> and;		Purple rockcod	<i>Epinephelus cyanopodus</i>	
	Bar rockcod	<i>Epinephelus septemfasciatus</i>		Queensland grouper	<i>Epinephelus lanceolatus</i>	
	Bass grouper	<i>Polyprion americanus</i>		Redmouth rockcod	<i>Aethaloperca rogoa</i>	
	Birdwire rockcod	<i>Epinephelus merra</i>		Sixband rockcod	<i>Cephalopholis sexmaculata</i>	
	Blacksaddle rockcod	<i>Epinephelus howlandi</i>		Sixbar grouper	<i>Epinephelus sexfasciatus</i>	
	Blacktip rockcod	<i>Epinephelus fasciatus</i>		Snubnose grouper	<i>Epinephelus macrospilus</i>	
	Bluelined rockcod	<i>Cephalopholis formosa</i>		Speckled grouper	<i>Epinephelus magniscuttis</i>	
	Bluespotted rockcod	<i>Cephalopholis cyanostigma</i>		Specklefin grouper	<i>Epinephelus ongus</i>	
	Brownbarred rockcod	<i>Cephalopholis boenak</i>		Strawberry rockcod	<i>Cephalopholis spiloparaea</i>	
	Camouflage grouper	<i>Epinephelus polyphekadion</i>		Thinspine grouper	<i>Gracila albomarginata</i>	
	Chinaman rockcod	<i>Epinephelus rivulatus</i>		Tomato rockcod	<i>Cephalopholis sonnerati</i>	
	Comet grouper	<i>Epinephelus morrhua</i>		Whitelined rockcod	<i>Anyperodon leucogrammicus</i>	
	Coral grouper	<i>Epinephelus corallicola</i>		Whitespotted grouper	<i>Epinephelus coeruleopunctatus</i>	
	Coral rockcod	<i>Cephalopholis miniata</i>		Wirenet rockcod	<i>Epinephelus hexagonatus</i>	
	Dot-head rockcod	<i>Cephalopholis microprion</i>		Yellowspotted rockcod	<i>Epinephelus areolatus</i>	
	Eightbar grouper	<i>Epinephelus octofasciatus</i>		<b>Particular coral trout</b>	Barcheek coral trout	<i>Plectropomus maculatus</i>
	Flagtail rockcod	<i>Cephalopholis urodeta</i>			Bluespotted coral trout	<i>Plectropomus laevis</i>
	Flowery rockcod	<i>Epinephelus fuscoguttatus</i>			Common coral trout	<i>Plectropomus leopardus</i>
	Foursaddle grouper	<i>Epinephelus spilotoceps</i>			Coral trout	<i>Plectropomus</i> spp. and <i>Variola</i> spp.
Greasy rockcod	<i>Epinephelus tauvina</i>	Passionfruit coral trout	<i>Plectropomus areolatus</i>			
Hapuku	<i>Polyprion oxygeneios</i>	Vermicular cod	<i>Plectropomus oligacanthus</i>			
Highfin grouper	<i>Epinephelus maculatus</i>	White-edge coronation trout	<i>Variola albimarginata</i>			

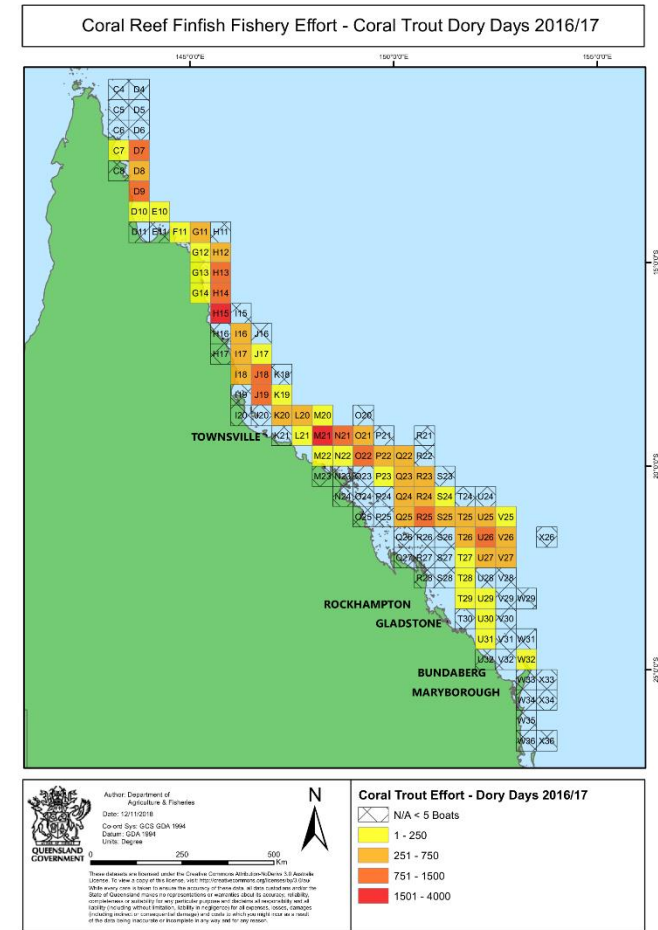
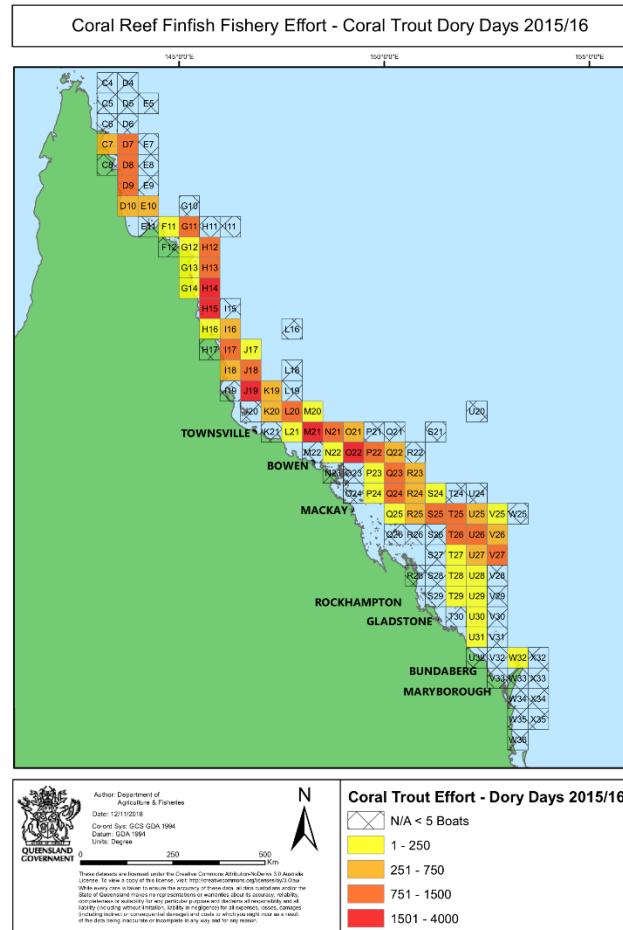
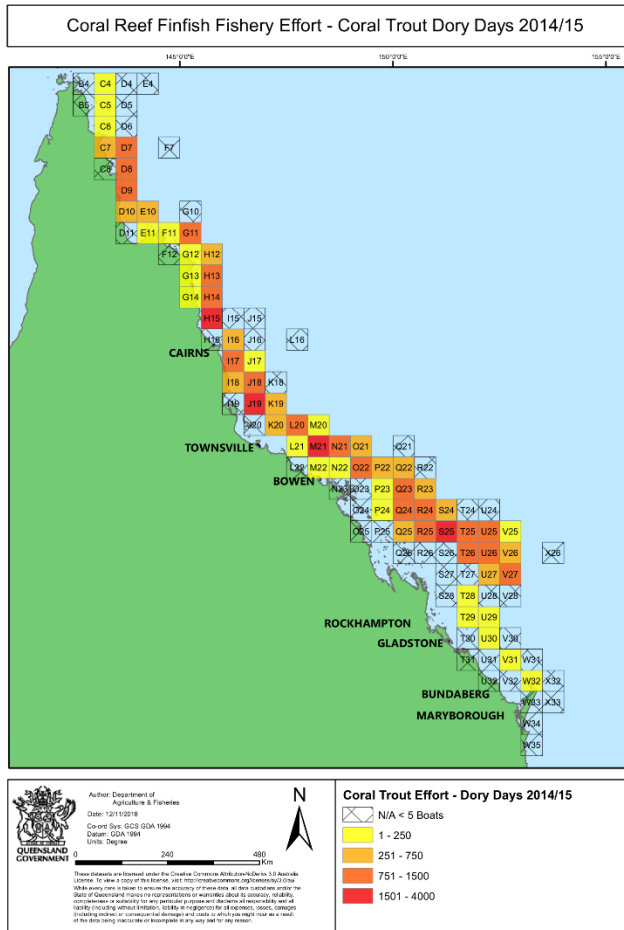
	Leopard rockcod	<i>Cephalopholis leopardus</i>		Yellowedge coronation trout	<i>Variola louti</i>
	Longfin rockcod	<i>Epinephelus quoyanus</i>	<b>Particular emperor</b>	Bigeye seabream	<i>Monotaxis grandoculis</i>
	Maori rockcod	<i>Epinephelus undulatostratus</i>		Collar seabream	<i>Gymnocranius audleyi</i>
	Radiant rockcod	<i>Epinephelus radiatus</i>		Goldspot seabream	<i>Gnathodentex aureolineatus</i>
	Peacock rockcod	<i>Cephalopholis argus</i>		Longnose emperor	<i>Lethrinus olivaceus</i>
	Miscellaneous emperor, other than Grass emperor	<i>Lethrinus</i> spp., other than <i>Lethrinus laticaudis</i>		Blacktail snapper	<i>Lutjanus fulvus</i>
	Mozambique seabream	<i>Wattsia mossambica</i>	Bluestriped snapper	<i>Lutjanus kasmira</i>	
	Orangespotted emperor	<i>Lethrinus erythracanthus</i>	Brownstripe snapper	<i>Lutjanus vitta</i>	
	Orangestriped emperor	<i>Lethrinus obsoletus</i>	Chinamanfish	<i>Symphorus nematophorus</i>	
	Ornate emperor	<i>Lethrinus ornatus</i>	Crimson snapper	<i>Lutjanus erythropterus</i>	
	Paddletail seabream	<i>Gymnocranius euanus</i>	Darktail snapper	<i>Lutjanus lemniscatus</i>	
	Spotcheek emperor	<i>Lethrinus rubrioperculatus</i>	Fiveline snapper	<i>Lutjanus quinquelineatus</i>	
	Redspot emperor	<i>Lethrinus lentjan</i>	Flame snapper	<i>Etelis coruscans</i>	
	Redthroat emperor	<i>Lethrinus miniatus</i>	Goldband snapper	<i>Pristipomoides multidens</i> and;	
	Robinson's seabream	<i>Gymnocranius grandoculis</i>	Goldband snapper	<i>Pristipomoides typus</i>	
	Seabream	<i>Gymnocranius</i> spp.	Green jobfish	<i>Aprion virescens</i>	
	Spangled emperor	<i>Lethrinus nebulosus</i>	Hussar	<i>Lutjanus adetii</i>	
	Threadfin emperor	<i>Lethrinus genivittatus</i>	Lavender snapper	<i>Pristipomoides sieboldii</i>	
	Thumbprint emperor	<i>Lethrinus harak</i>	Maori snapper	<i>Lutjanus rivulatus</i>	
	Variiegated emperor	<i>Lethrinus variegatus</i>	Midnight snapper	<i>Macolor macularis</i>	
	Yellowlip emperor	<i>Lethrinus xanthochilus</i>	Moses snapper	<i>Lutjanus russelli</i>	
	Yellowtail emperor	<i>Lethrinus atkinsoni</i>	Onespot snapper	<i>Lutjanus monostigma</i>	
<b>Fusilier</b>	Fusilier family	Caesionidae	Paddletail	<i>Lutjanus gibbus</i>	
<b>Particular parrotfish</b>	Bicolour parrotfish	<i>Cetoscarus bicolor</i>	Red bass	<i>Lutjanus bohar</i>	
	Bumphead parrotfish	<i>Bolbometopon muricatum</i>	Red emperor	<i>Lutjanus sebae</i>	

	Miscellaneous parrotfish	family Scaridae		Rosy snapper	<i>Pristipomoides filamentosus</i>
<b>Particular surgeonfish</b>	Surgeonfish	<i>Acanthurus</i> spp. and <i>Ctenochaetus</i> spp.		Ruby snapper	<i>Etelis carbunculus</i>
	Unicornfish	<i>Naso</i> spp. and <i>Prionurus</i> spp.		Saddletail snapper	<i>Lutjanus malabaricus</i>
<b>Particular sweetlip</b>	Miscellaneous sweetlip	<i>Plectorhinchus</i> spp.		Sailfin snapper	<i>Symphoricichthys spilurus</i>
	Painted sweetlip	<i>Diagramma pictum labiosum</i>		Smalltooth jobfish	<i>Aphareus furca</i>
<b>Particular tropical snapper and seaperch</b>	Bigeye snapper	<i>Lutjanus</i>		Stripey snapper	<i>Lutjanus carponotatus</i>
	Black-and-white snapper	<i>Macolor niger</i>		Miscellaneous jobfish and snapper, Other than mangrove jack and Golden snapper	<i>Aphareus</i> spp., <i>Etelis</i> spp., <i>Pristipomoides</i> spp., and <i>Lutjanus</i> spp., other than <i>Lutjanus argentimaculatus</i> and <i>Lutjanus johnii</i>
	Blackspot snapper	<i>Lutjanus fulviflamma</i>	<b>Particular wrasse</b>	Anchor tuskfish	<i>Choerodon anchorago</i>
	Blackspot tuskfish	<i>Choerodon schoenleinii</i>		Purple tuskfish	<i>Choerodon cephalotes</i>
	Blue tuskfish	<i>Choerodon cyanodus</i>		Redbreast Maori wrasse	<i>Cheilinus fasciatus</i>
	Humphead Maori wrasse	<i>Cheilinus undulatus</i>		Tripletail Maori wrasse	<i>Cheilinus trilobatus</i>
	Pigfish	<i>Bodianus</i> spp.		Venus tuskfish	<i>Choerodon venustus</i>

**APPENDIX 3** — Summary of the species retained in the Coral Reef Fin Fish Fishery (CRFFF) that assessed as part of the National Status of Australian Fish Stocks (SAFS) and Queensland Stock Status processes.

Species	SAFS Stock name	2015 QLD status (Non-SAFS year)	2016 SAFS status	2017 QLD status (Non-SAFS year)	2018 SAFS status
<b>Snapper–crimson</b> ( <i>Lutjanus erythropterus</i> )	East Coast Queensland	Not assessed	Undefined	Not Assessed	Undefined
<b>Snapper–saddletail</b> ( <i>Lutjanus malabaricus</i> )	East Coast Queensland	Not assessed	Undefined	Not Assessed	Undefined
<b>Snapper–golden</b> ( <i>Lutjanus johnii</i> )	East Coast	Not assessed	Undefined	Not Assessed	Undefined
<b>Coral trout</b> ( <i>Plectropomus and Variola</i> spp.)	CRFFF Management Unit	Not assessed	Sustainable	Not Assessed	Sustainable
<b>Emperor–redthroat</b> ( <i>Lethrinus miniatus</i> )	East Coast Queensland	Not assessed	Sustainable	Not Assessed	Sustainable
<b>Emperor–red</b> ( <i>Lutjanus sebae</i> )	East Coast Queensland	Not assessed	Undefined	Not Assessed	Undefined
<b>Snapper–goldband</b> ( <i>Pristipomoides multidens</i> )	East Coast Queensland	Not assessed	Undefined	Not Assessed	Undefined
<b>Snapper–stripey</b> ( <i>Lutjanus carponotatus</i> )	Not assessed	Not assessed	Not assessed	Undefined	Not assessed
<b>Emperor–spangled</b> ( <i>Lethrinus nebulosus</i> )	Not assessed	Not assessed	Not assessed	Undefined	Sustainable

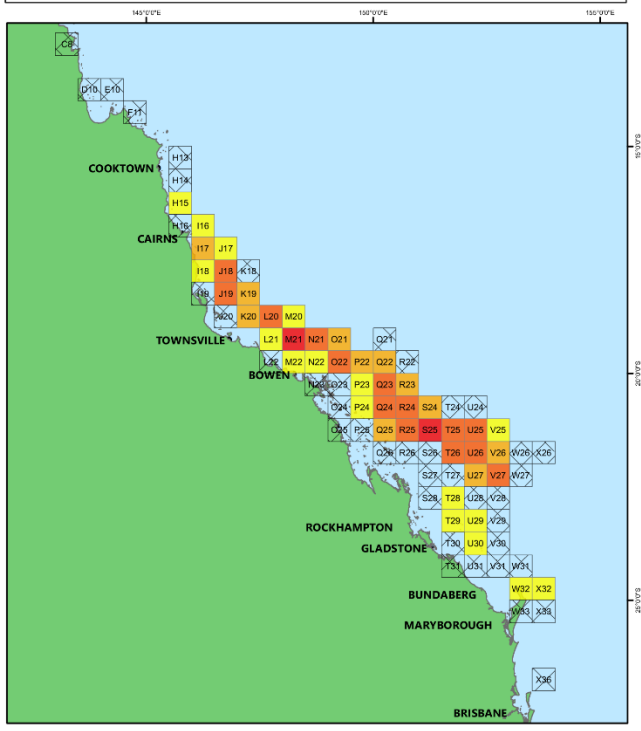
**APPENDIX 4 — Effort distribution for the coral trout (CT) quota category for the 2014/15, 2015/16 and 2016/17 fishing seasons based on dory (effort) days.**  
 Cross-hatched grids represent areas where effort has been reported but information is protected by commercial in confidence provisions i.e. grid contains <5 boats.





**APPENDIX 4 cont. – Effort distribution for the redthroat emperor (RTE) quota category for the 2014/15, 2015/16, and 2016/17 fishing seasons based on dory (effort) days. Cross-hatched grids represent areas where effort has been reported but information is protected by commercial in confidence provisions i.e. grid contains <5 boats.**

Coral Reef Finfish Fishery Effort - Redthroat Emperor Dory Days 2014/15



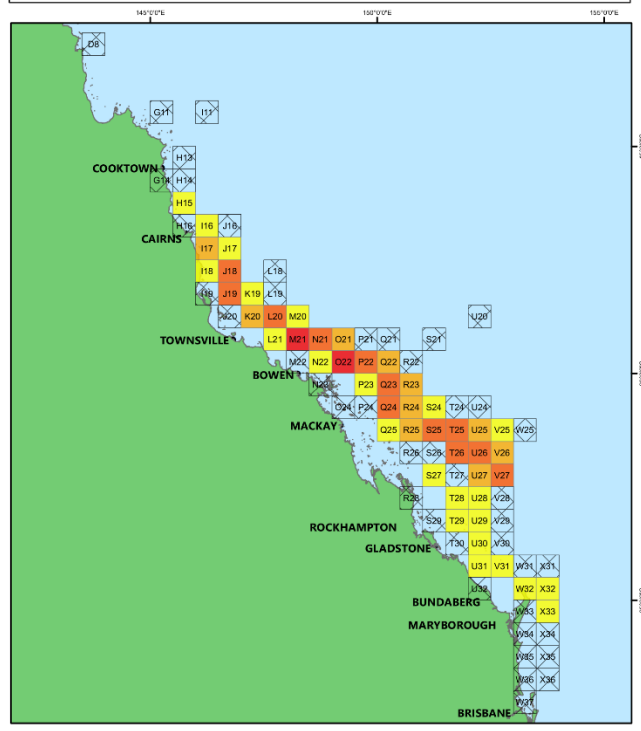
Author: Department of Agriculture & Fisheries  
 Date: 12/11/2018  
 Co-ord Sys: GCS GDA 1994  
 Datum: GDA 1994  
 Units: Degree

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**Redthroat Emperor Effort - Dory Days 2014/15**

- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000

Coral Reef Finfish Fishery Effort - Redthroat Emperor Dory Days 2015/16



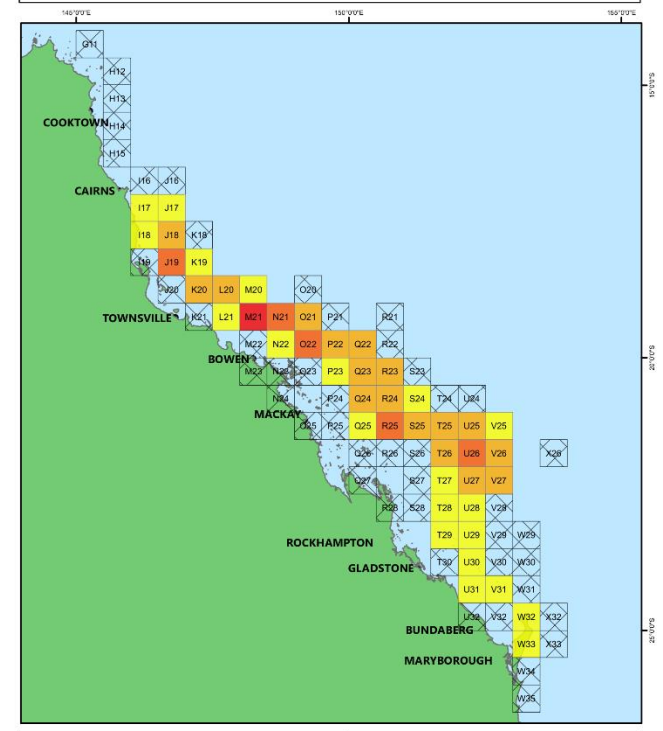
Author: Department of Agriculture & Fisheries  
 Date: 12/11/2018  
 Co-ord Sys: GCS GDA 1994  
 Datum: GDA 1994  
 Units: Degree

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**Redthroat Emperor Effort - Dory Days 2015/16**

- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000

Coral Reef Finfish Fishery Effort -Redthroat Emperor Dory Days 2016/17



Author: Department of Agriculture & Fisheries  
 Date: 12/11/2018  
 Co-ord Sys: GCS GDA 1994  
 Datum: GDA 1994  
 Units: Degree

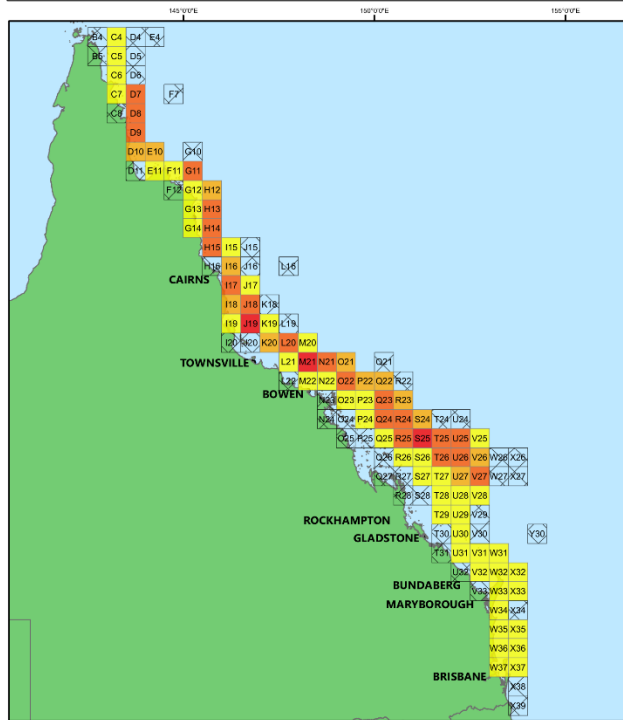
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**Redthroat Emperor Effort - Dory Days 2016/17**

- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000

**APPENDIX 4 cont.** — Effort distribution for the entire 'other species' (OS) quota category for the 2014/15, 2015/16, and 2016/17 fishing seasons based on dory (effort) days. Cross-hatched grids represent areas where effort has been reported but information is protected by commercial in confidence provisions i.e. grid contains <5 boats.

Coral Reef Fin Fish Fishery Effort - Other Species Dory Days 2014/15



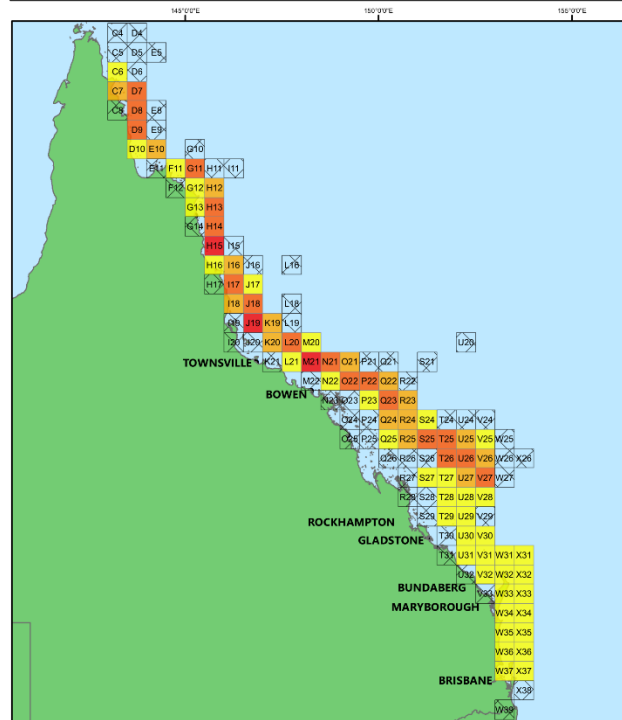
Author: Department of Agriculture & Fisheries  
Date: 12/11/2018  
Coordinate System: GCS: GDA 1984  
Datum: GDA 1984  
Units: Degree

Other Species Effort - Dory Days 2014/15

- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000

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Coral Reef Fin Fish Fishery Effort - Other Species Dory Days 2015/16



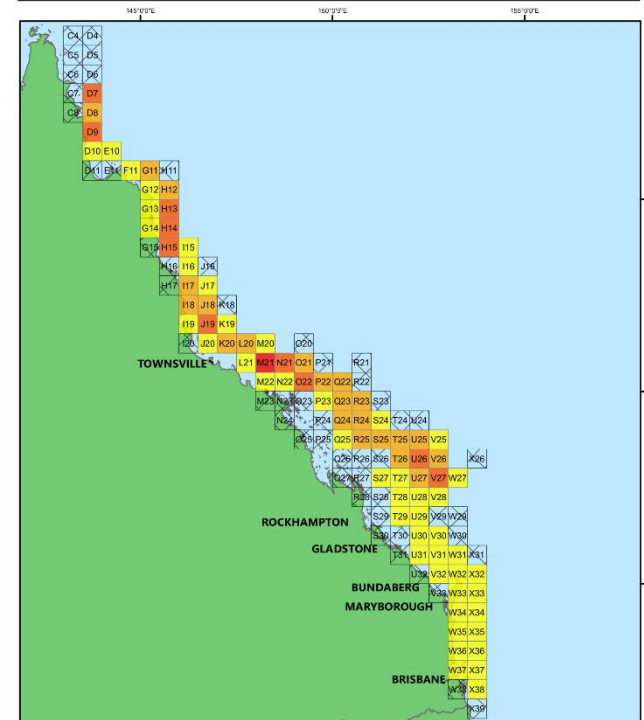
Author: Department of Agriculture & Fisheries  
Date: 12/11/2018  
Coordinate System: GCS: GDA 1984  
Datum: GDA 1984  
Units: Degree

Other Species Effort - Dory Days 2015/16

- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000

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Coral Reef Fin Fish Fishery Effort - Other Species Dory Days 2016/17



Author: Department of Agriculture & Fisheries  
Date: 12/11/2018  
Coordinate System: GCS: GDA 1984  
Datum: GDA 1984  
Units: Degree

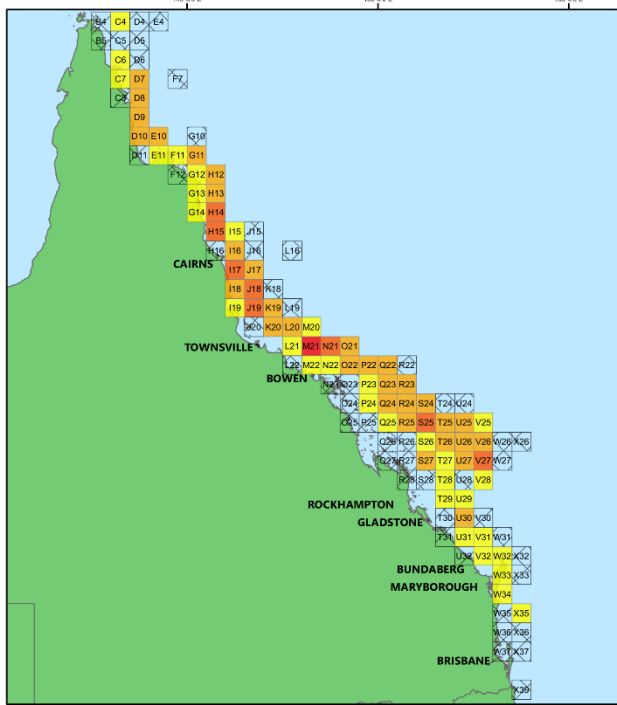
Other Species Effort - Dory Days 2016/17




- N/A < 5 Boats
- 1 - 250
- 251 - 750
- 751 - 1500
- 1501 - 4000






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**APPENDIX 5 – Effort distribution for the 5 most prominent species in the ‘other species’ (OS) quota category for the 2014/15, 2015/16, and 2016/17 fishing seasons based on primary vessel effort (days). Data presented as primary vessel days due to the inherent difficulties of assigning combined effort values to individual tenders. Cross-hatched grids represent areas where effort has been reported but information is protected by commercial in confidence provisions i.e. grid contains <5 boats.**

Coral Reef Finfish Fishery - Top 5 'Other Species' Effort (Days) 2014/15



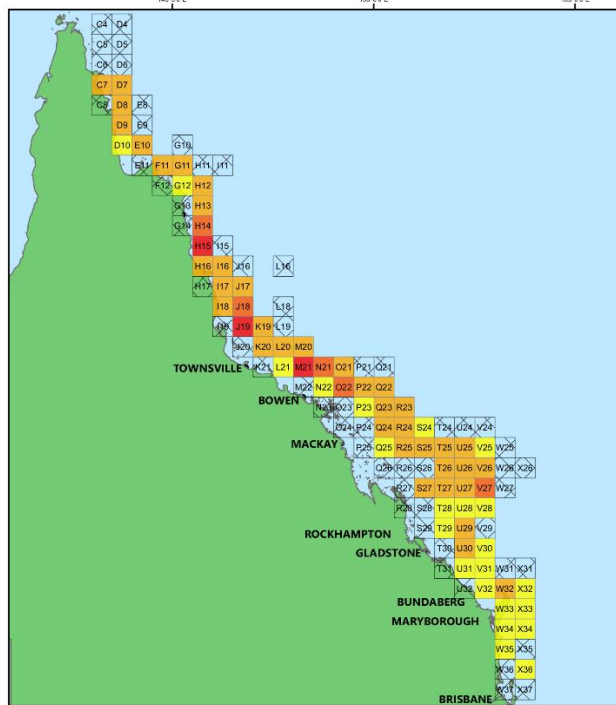

 Author: Department of Agriculture & Fisheries  
 Date: 14/11/2016  
 Co-ord Sys: GCS GDA 1984  
 Datum: GDA 1994  
 Units: Degree  






**OS Effort (Primary Days)**  
 N/A < 5 Boats  
 1 - 50  
 51 - 250  
 251 - 500  
 501 - 725






**CRFFF 'Other Species'**  
 - Goldband snapper  
 - Spangled emperor  
 - Saddletail snapper  
 - Red emperor  
 - Stripey snapper

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Coral Reef Finfish Fishery - Top 5 'Other Species' Effort (Days) 2015/16



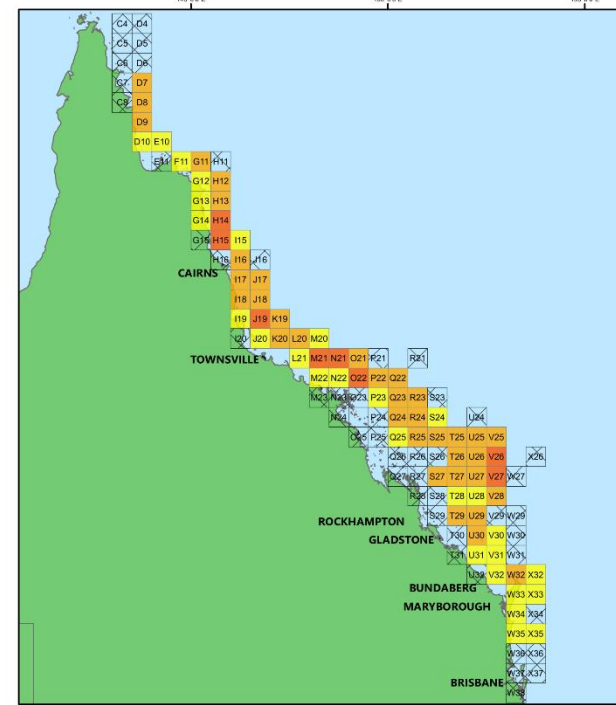

 Author: Department of Agriculture & Fisheries  
 Date: 14/11/2016  
 Co-ord Sys: GCS GDA 1984  
 Datum: GDA 1994  
 Units: Degree  






**OS Effort (Primary Days)**  
 N/A < 5 Boats  
 1 - 50  
 51 - 250  
 251 - 500  
 501 - 725






**CRFFF 'Other Species'**  
 - Goldband snapper  
 - Spangled emperor  
 - Saddletail snapper  
 - Red emperor  
 - Stripey snapper

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Coral Reef Finfish Fishery - Top 5 'Other Species' Effort (Days) 2016/17




 Author: Department of Agriculture & Fisheries  
 Date: 14/11/2016  
 Co-ord Sys: GCS GDA 1984  
 Datum: GDA 1994  
 Units: Degree  



**OS Effort (Primary Days)**  
 N/A < 5 Boats  
 1 - 50  
 51 - 250  
 251 - 500  
 501 - 725

**CRFFF 'Other Species'**  
 - Goldband snapper  
 - Spangled emperor  
 - Saddletail snapper  
 - Red emperor  
 - Stripey snapper

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**APPENDIX 6** — The yearly total catch (t) for RQ quota restricted species (CT, RTE and OS) in the CRFFF. OS has been broken down into reported species<sup>7</sup>. The fishery season runs from 1 July to 30 June.

Species	Catch (t)																							
	1993–1994	1994–1995	1995–1996	1996–1997	1997–1998	1998–1999	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005	2005–2006	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
<b>CT</b>	1320	1358	1638	1577	1440	1487	1606	1894	2112	2041	1539	973	1025	994	1071	1105	940	801	725	751	840	753	817	850
<b>RTE</b>	674	566	583	783	797	719	712	798	863	875	679	228	213	328	276	247	271	248	226	218	219	202	164	137
<b>OS</b>	501	594	704	948	1430	1628	1323	1480	1684	1402	920	300	307	349	392	508	498	430	358	374	409	416	437	401
<i>Species Specific Catch Data</i>																								
<i>Bass - red</i>	0.3	0.1	0.1	0.3	0.3	0.1	0.5	1.3	5.3	2.8	0.9													
<i>Bass groper</i>							0.3	0.0	0.0	0.1					0.3	1.5	0.7	1.7	0.3	0.1	0.1	0.6	0.7	0.8
<i>Bream</i>																								
- <i>blubber lip</i>								0.1		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.1		0.0	0.0	0.0	0.0	
- <i>Japanese large-eye</i>												0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.0	0.0	0.0	
- <i>maori</i>				0.0	0.4	2.0	0.8	0.3	0.8	0.6	0.4	0.2	0.3	0.1	0.5	0.5	0.6	0.3	0.1	0.3	0.5	0.2	0.6	0.3
- <i>mozambique</i>					0.8	0.1	0.1	0.0	0.3	0.0	0.0		0.0	0.0	0.1	0.1	0.1	0.0	0.0		0.0	0.0	0.0	0.1
- <i>sea</i>		0.0							1.3	1.2	1.5	0.6	0.1	0.2	0.1	0.5	0.2	0.2	0.2	0.1	0.2	0.4	0.3	0.3
<i>Camouflage rockcod</i>												0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.0
<i>Cardinal fish - gold lined</i>										0.0														
<i>Chinaman</i>				0.1			0.1	0.6	0.0															
<i>Cocoa snapper</i>															0.0	0.0	0.0							
<i>Cod</i>																								
- <i>bar</i>			0.0	0.1	0.8	6.0	9.4	14.0	11.3	14.4	13.6	1.5	3.7	0.9	25.9	38.0	17.3	23.0	16.2	5.9	13.0	8.5	10.7	13.9
- <i>barramundi</i>	2.9	2.9	4.4	5.8	9.8	12.9	21.6	25.2	25.1	20.5	10.0													
- <i>birdwire</i>			0.0						0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.4	0.1	0.0	0.0	0.2	0.2	0.2	0.1
- <i>black-finned</i>				0.0	0.1	0.3	0.8	0.0	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	
- <i>black-tipped rock</i>		0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.5	0.3	0.1			0.0		0.0	0.0	0.0	0.0	0.2				
- <i>blue maori</i>	0.0	0.0	0.0	0.0	1.3	0.1	0.4	0.2	0.7	0.1	0.0	0.2	0.1	0.0	0.3	0.5	0.5	0.5	0.3	0.3	0.2	0.4	0.5	0.3
- <i>blue spot rock</i>									0.3	0.0	0.1		0.0								0.0			0.0
- <i>brown banded</i>											0.0	0.0												
- <i>coral</i>	0.3	0.1	0.1	0.5	0.6	0.1	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0
- <i>flowery</i>		0.0	0.0		0.3	0.1	0.2	0.3	0.4	0.6	0.1	1.3	0.7	1.5	0.6	0.5	0.5	0.2	0.2	0.4	0.2	0.3	0.3	0.1
- <i>greasy</i>			0.1	0.1	1.1	0.5	0.2	1.1	1.6	2.5	1.0	0.8	0.4	0.5	2.8	2.9	2.7	3.2	1.9	1.1	2.2	3.7	2.9	4.3
- <i>groper unspecified</i>				0.5		0.3	1.9	1.1	0.4	0.1		0.0				0.0		0.1	0.1	0.0	0.0		1.1	0.0
- <i>hapuku</i>	0.1	0.1	0.1	0.1	6.0	1.9	7.6	0.1	2.7	0.2		0.1		0.0	0.6	0.6	0.7	0.8	0.2		0.1	0.1	0.2	0.1
- <i>leopard rock</i>									0.0	0.0			0.0				0.0							
- <i>long finned</i>													0.0									0.0	0.0	
- <i>maori</i>	2.5	2.7	8.0	9.3	15.3	10.6	7.7	4.2	3.6	3.5	2.9	1.1	1.6	1.9	2.4	3.6	2.2	1.3	1.5	1.4	1.0	1.2	1.1	1.3
- <i>potato</i>				0.0		0.0									0.0									

<sup>7</sup> Some species are recorded under previous synonyms e.g. the accepted name for small mouth nannygai is crimson snapper

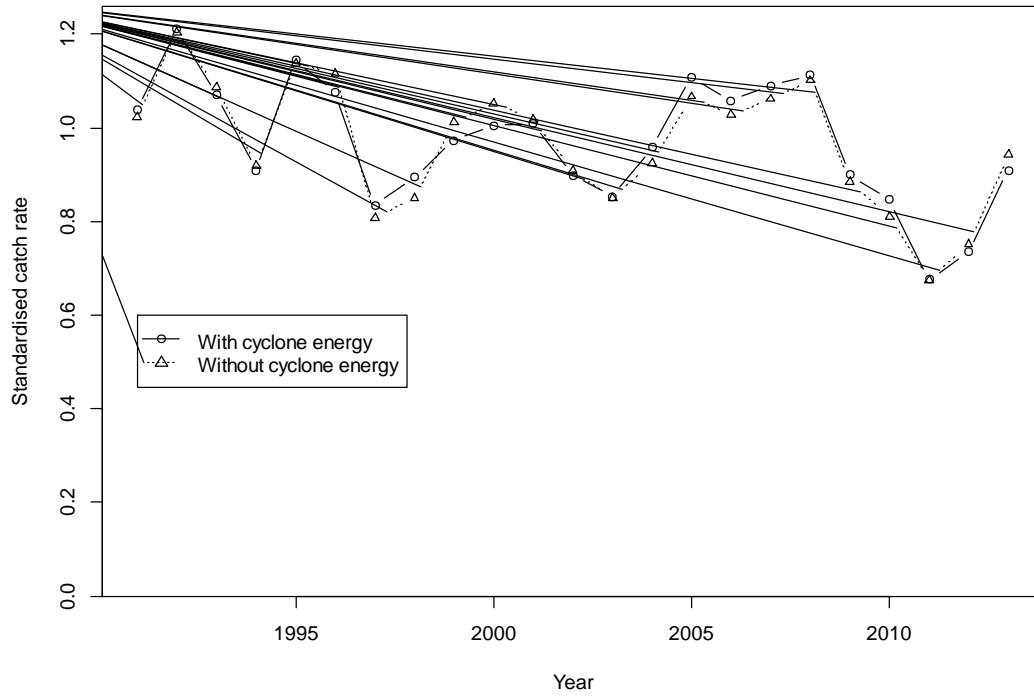
Species	Catch (t)																							
	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
- red flushed																					0.0		0.0	
- red rock								0.0	0.6	0.2	0.4	0.0	0.0	0.0	0.1	0.7	1.1	0.9	0.1	0.1	0.4	0.0	0.1	0.1
- reef unspecified			0.2		0.3	0.1	0.2	1.2	2.3	2.2	0.8	0.0	0.1	0.3	0.0	0.1	0.0	0.4	0.0	0.4	0.2	0.0	0.0	0.1
- speckled fin			0.1	0.0	0.1	0.1	0.1	1.4	0.3	1.4	0.4	0.1	0.0		0.0	0.2	0.3	0.2	0.1	0.3	0.2	0.2	0.4	0.3
- strawberry rock																0.0	0.0							
- tomato		0.1		0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0		0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
- unspecified	52.4	53.3	57.0	81.7	134.6	126.9	102.4	129.7	119.8	78.4	45.6	23.1	27.8	22.6	23.5	38.5	22.3	18.3	21.2	22.2	25.6	20.9	30.3	19.6
- white lined												0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- yellow spotted rock												0.0	0.1	0.4	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.3
Eastern Pigfish			0.0	0.0	0.5	0.2	0.2	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.1
Emperor																								
- long nose	0.1	0.2	0.0	0.8	2.7	1.5	1.2	1.6	3.9	2.2	0.8	1.0	0.3	0.3	1.0	1.1	1.8	0.8	1.1	1.5	2.3	0.8	0.7	1.8
- orange striped																	0.0	0.0			0.0	0.0	0.0	0.0
- pink-eared										0.2	0.0	0.1	0.1	0.0	0.1	0.2	0.1	0.2	0.4	0.3	0.2	0.2	0.3	0.2
- red	21.6	22.3	20.7	25.6	74.5	103.9	95.2	144.1	200.0	172.0	121.1	26.6	28.0	29.4	42.6	58.8	61.2	59.5	42.2	44.2	45.7	43.5	40.1	35.7
- red ear												0.0	0.0	0.1	0.2	0.1	0.7	0.2	0.1	0.2	0.2	0.1	0.1	0.1
- reticulated															0.0	0.0	0.3	0.2	0.5	0.7	0.5	0.5	0.9	0.5
- spangled	24.0	14.4	21.4	32.5	42.3	38.2	56.8	60.5	84.1	61.7	37.9	12.4	11.6	16.2	30.9	57.3	66.6	54.3	49.2	52.7	60.3	59.4	54.8	50.5
- Unspecified	67.9	80.7	85.2	122.0	168.7	162.3	135.1	107.0	61.9	43.5	21.9	22.9	25.2	26.2	13.6	7.7	13.1	10.8	7.5	10.3	7.6	7.7	11.3	8.7
- variegated												0.0	0.0	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1
- yellow lipped													0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- yellow spotted												0.0				0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
- yellow tailed												0.2	0.1	0.1	0.3	0.4	1.2	0.6	1.2	1.2	0.9	1.7	1.0	0.9
Fish - mixed reef	103.0	157.2	153.5	168.8	246.9	238.7	213.3	248.6	381.3	330.3	259.0	55.6	44.9	59.7	26.0	24.6	19.6	16.7	11.9	12.5	16.2	21.7	15.1	9.3
Fish - mixed reef a	19.8	20.1	28.6	56.2	52.6	52.8	24.3	30.6	37.0	44.7	21.7	0.8	0.2	1.2	0.8	0.4	1.0	3.7	3.0	2.1	1.7	2.3	2.1	1.0
Fish - mixed reef b	91.4	95.0	87.5	105.1	142.4	151.4	148.3	150.4	157.0	133.1	72.5	1.1	1.0	3.5	1.1	0.7	0.8	0.9	0.4	0.6	1.6	0.3	0.0	0.0
Fiveline Snapper																0.0	0.0							0.0
Fusilier - southern									0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Fusilier - yellow tail	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Goldeneye snapper																					0.1	0.0	0.1	0.1
Grouper - comet	0.0									0.4	0.1	0.9	0.9	0.9	1.7	1.4	1.0	0.7	0.7	0.8	0.7	1.1	1.3	1.6
Grouper - eight bar							1.2	3.0								0.2	2.8	0.5	0.4		0.8		0.0	
Hussar																					0.0		0.0	0.0
Hussar - unspecified	20.5	42.7	64.0	89.2	110.3	83.0	81.4	102.2	96.0	89.7	46.9	17.0	14.5	19.0	23.1	27.4	24.6	21.3	19.7	21.3	16.6	14.9	16.7	16.0
Jobfish																								
- gold banded				9.1	30.0	38.4	39.5	33.1	67.6	41.1	30.9	28.0	41.4	45.4	47.2	52.1	38.7	35.5	32.8	43.1	50.6	53.8	61.8	
- green	0.0	0.2	0.0	0.1	1.1	0.7	2.3	1.1	2.4	2.3	0.8	1.0	0.8	0.5	3.1	5.2	5.6	5.9	4.8	4.0	6.7	7.6	6.3	4.7

Species	Catch (t)																							
	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
- rosy	4.1	1.9	10.9	16.4	64.2	92.3	64.1	63.2	56.3	53.1	49.7	2.2	6.1	4.8	7.1	16.1	5.5	3.0	1.8	3.5	8.6	9.4	10.2	13.5
- small-toothed					0.2	0.6	0.5	0.1	0.2	0.1	0.3	0.2	0.4	0.6	0.1	0.3	0.4	0.4	0.1	0.3	0.4	0.3	0.7	0.4
- unspecified	16.4	17.2	46.3	60.5	117.2	151.6	76.3	58.3	94.3	33.5	14.8	23.1	34.9	30.3	10.7	5.1	6.6	3.4	3.3	8.4	9.0	11.4	9.3	6.0
Lancer												0.0			0.0		0.0	0.0				0.1	0.0	0.0
Lavender snapper																0.0	0.0					0.0	0.0	0.0
Longfin Emperor																							0.0	
Midnight Snapper																				0.0				
Nannygai																								
- large mouth	23.0	25.9	42.3	82.8	127.5	256.4	149.3	159.0	149.1	114.9	69.3	7.7	13.7	9.7	27.0	65.4	52.3	53.9	38.4	47.1	53.6	63.6	78.7	76.9
- small mouth	1.1	1.4	5.0	19.2	9.4	23.9	16.6	35.3	39.0	15.5	17.6	1.3	0.8	1.0	10.1	20.3	20.6	15.2	12.1	19.4	18.8	14.5	13.3	11.5
- unspecified	3.1	10.0	13.8	8.0	7.7	8.8	6.3	21.6	23.5	17.6	12.0	14.0	14.8	18.5	2.8	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1
Olbique-banded snapper																	0.1		0.0		0.0			0.1
Oriental Sweetlips																								0.0
Ornate Emperor																							0.0	0.0
Ornate snapper																				0.0	0.0	0.0	0.0	0.0
Paddle tail										0.1	0.0			0.1		0.0								
Painted sweetlip	1.2	1.5	2.2	3.8	4.1	2.4	2.5	1.5	2.1	1.7	2.5	1.8	0.3	1.5	2.3	4.8	5.0	3.9	2.5	2.8	1.5	1.1	1.8	1.7
Peacock cod												0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perch - dark tailed sea																		0.0	0.0	0.0	0.0		0.0	0.2
Perch - maori sea				0.0	0.1		0.1	0.1	0.0			0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.4	0.2	0.2	0.2	0.1
Perch - moses	0.6	0.8	0.7	1.4	2.5	8.5	1.1	1.0	0.7	0.9	0.8	1.2	1.4	1.6	2.2	2.8	2.8	2.0	2.4	2.2	2.0	2.0	2.1	1.6
Pigfish - gold spot							0.0	0.0	0.3	0.6	0.4	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.1
Radiant rockcod															0.3	0.0		0.0						0.0
Rusty jobfish														0.2		0.0	0.0	0.0	0.0		0.0		0.1	0.1
Sea bream																								
Sea bream - big eye																0.0				0.0		0.0	0.0	0.0
Seabream - Collar	0.4	2.7	11.3	9.8	9.3	6.5	8.0	7.4	8.7	11.5	8.1	2.0	2.0	2.8	2.3	4.3	4.1	3.8	1.9	1.8	0.7	0.8	1.0	0.8
Seaperch - swallowtail												0.0				0.0		0.1	0.0	0.0		0.0		
Sharptooth snapper																						0.0		0.2
Smalltooth Emperor																					0.0			
Snapper																								
- black and white																							0.0	0.0
- black spot															0.0									
- flame tail							2.4	11.9	10.8	9.8	4.1	5.7	1.6	0.8	4.1	0.9	0.2	0.4	0.2	0.2	1.2	1.5	4.2	3.5
- indonesian																					0.1	0.3	0.0	0.1
- onespot															0.0	0.0	0.0	0.0		0.0	0.0			0.0
- pale									0.0	0.2	0.0				0.0	0.0		0.0						0.0

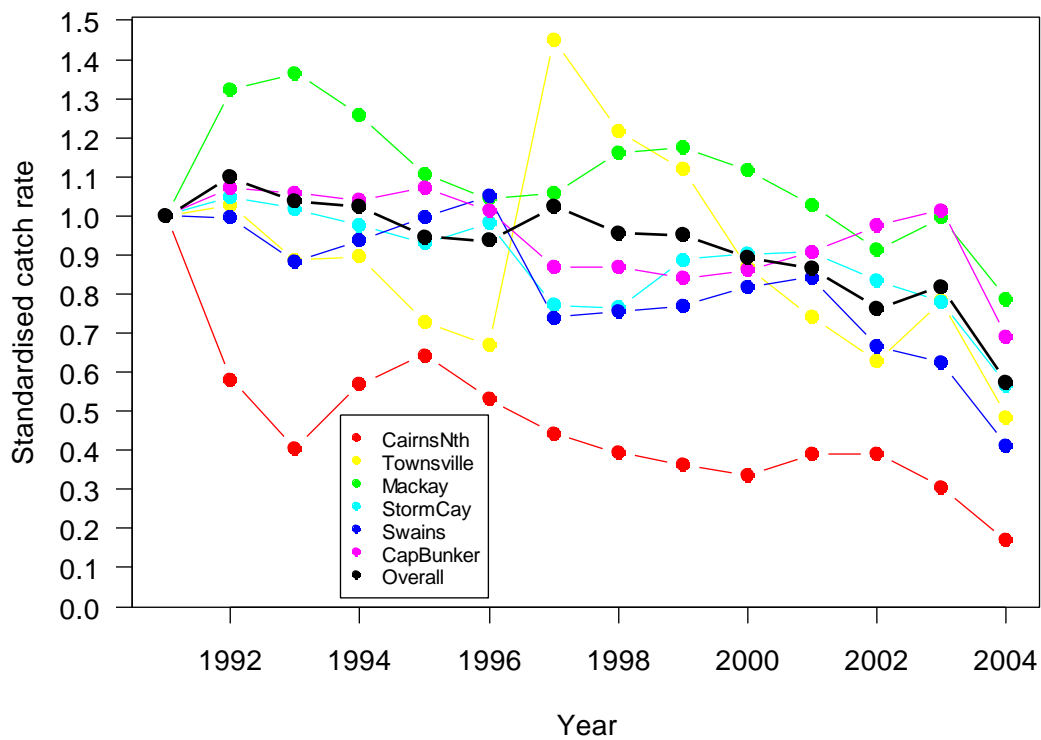
Species	Catch (t)																								
	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	
- ruby					1.4			1.3	5.2	15.9	0.9	1.6	0.2	0.0	0.5	0.8	0.5	0.3	0.7	0.4	0.1	0.7	1.2	0.9	
- saddleback												0.0		0.1	0.0	0.0	0.3	0.2	0.0	0.0	0.0		0.1	0.1	
- unspecified tropical	0.1	0.2	1.6	1.4	3.8	1.7	5.3	10.5	15.6	3.0	0.9	2.6	1.4	2.0	4.8	4.6	6.4	4.1	5.4	8.6	11.1	7.1	9.1	8.0	
Speckled grouper																0.0		0.0	0.0				0.0	0.0	0.1
Stripey - spanish flag	3.2	2.6	2.4	3.1	3.3	2.5	2.1	2.5	4.2	4.3	4.2	21.4	24.2	30.8	53.6	45.0	65.7	51.5	54.2	48.5	40.1	42.8	39.5	28.8	
Surgeon fish - convict				0.1	0.0	0.0		0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Sweetlip - clown																		0.0						0.0	
Tropical snapper														0.0											
Tusk fish																									
- black spot										0.0	0.0	0.0							0.0						
- blue					0.0	0.0					0.1	0.2	0.4	0.5	0.2	0.0	0.0		0.0						
- purple						0.1															0.0		0.0		
- unspecified	21.5	24.1	27.9	32.2	37.2	36.5	28.9	28.9	34.9	38.6	28.8	14.2	12.3	13.6	13.9	14.4	22.1	18.3	11.4	10.4	9.7	8.2	9.3	9.3	
- venus	1.5	1.0	0.7	0.7	2.0	1.7	2.2	1.6	1.0	1.3	1.9	1.4	2.2	3.0	1.2	1.0	1.8	1.8	1.3	1.2	1.1	2.0	1.7	1.5	
Whitespotted Grouper																							0.0	0.0	
Wrasse																									
- humphead maori	1.8			0.0	0.2																				
- sling-jaw						0.0	0.0	0.0	0.2	0.4	1.1		0.0		0.0	0.0	0.0	0.1		0.0	0.0	0.1	0.0	0.0	
- unspecified	16.3	12.9	7.9	9.9	17.2	9.9	5.3	4.6	3.9	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.2	

**APPENDIX 7** — Standardised catch rates for coral trout (Leigh et al., 2014) and redthroat emperor (Leigh et al., 2006)

**Coral trout**



**Redthroat emperor**





**APPENDIX 8** — Interactions reported in the Species of Conservation Interest (SOCI) logbook by fishers operating in the Coral Reef Fin Fish Fishery. Data includes all reports and encompasses dropline (demersal longline), handline, and line fishing operations.

Species	2003				2004	2005	2006				2007				2008				2009				
	Total	Disc. Alive	Disc. Dead	Other	N/A	N/A	Total	Disc. Alive	Disc. Dead	Other	Total	Disc. Alive	Disc. Dead	Other	Total	Disc. Alive	Disc. Dead	Other	Total	Disc. Alive	Disc. Dead	Other	
<b>Whales</b>					No Reports	No Reports																	
Humpback Whale																1	0	0	1	2	2	0	0
Minke Whale							4	4	0	0													
<b>Dolphin</b>																							
Off-shore bottlenose dolphin											15	15	0	0									
<b>Marine turtle</b>																							
Green																							
Unspecified							1	0	0	1													
<b>Teleosts</b>																							
Humphead Maori Wrasse																							
Queensland Groper																							
Barramundi Cod																							
<b>Seabirds</b>																							
Tern																							
<b>Non SOCI reports</b>	26	26	0	0																			

**APPENDIX 8 cont.** — Interactions reported in the Species of Conservation Interest (SOCI) logbook by fishers operating in the Coral Reef Fin Fish Fishery. Data includes all reports and encompasses dropline (demersal longline), handline, and line fishing operations.

Species	2010	2011	2012	2013	2014	2015	2016				2017									
	N/A	N/A	N/A	N/A	N/A	N/A	Total	Disc. Alive	Disc. Dead	Other	Total	Disc. Alive	Disc. Dead	Other						
<b>Whales</b>	No Reports	No Reports	No Reports	No Reports	No Reports	No Reports														
Humpback Whale																1	1	0	0	
Minke Whale																				
<b>Dolphin</b>																				
Off-shore bottlenose dolphin																				
<b>Marine turtles</b>																				
Green													4	4	0	0				
Unspecified																				
<b>Teleosts</b>																				
Humphead Maori Wrasse													444	440	4		293	286	7	0
Queensland Groper													1	1	0	0				
Barramundi Cod													473	467	6		349	323	26	0
<b>Seabirds</b>																				
Tern																	1	1	0	0
<b>Non SOCI reports</b>																				