

Sustainable Fisheries Strategy

2017–2027

Gulf of Carpentaria Line Fishery Scoping Study

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Summary

Feature	Details
Species targeted	<i>Commercial</i> —Spanish mackerel (<i>Scomberomorus commerson</i>) and other fin fish.
Fisheries symbols	L4—Line fishing west of the Cape York Peninsula and south of 10°48´S
Fisheries Legislation	<i>Fisheries Act 1994; Fisheries (Commercial Fisheries) Regulation 2019; Fisheries Declaration 2019; Fisheries (General) Regulation 2019</i>
Working Group	No
Harvest Strategy	No
Gear	The following apparatus are currently permitted for use within the Gulf of Carpentaria Line Fishery: <ul style="list-style-type: none"> • Hook/lure and line apparatus. • Recreational fishers may use hook and line, rods and reels and spearfishing gear (exc. Hookah/SCUBA). <i>See Appendix A for more information.</i>
Main management methods	<i>All fishers</i> <ul style="list-style-type: none"> • Spatial closures • Minimum legal size limits • No-take species • Gear restrictions <i>Commercial only</i> <ul style="list-style-type: none"> • Vessel & tender restrictions <i>Recreational only</i> <ul style="list-style-type: none"> • Possession limits <i>See Appendix A for more information.</i>
Fishing Season	1 January to 31 December
Commercial Fishery licences	Number of L4 symbols: 46 Number of active licences: 20 <i>Note—data on symbol numbers correct as of 5 April 2018</i>
Total annual harvest by sectors	Commercial: 211t Charter: <1t Recreational: Unknown Harvest by Aboriginal peoples and Torres Strait Islander peoples: Unknown
GVP	\$1.5 Million (2018 estimate)
Stock Status	Spanish mackerel from the Queensland Gulf of Carpentaria Stock are classified as ‘Sustainable’ (Langstreth <i>et al.</i> , 2018).
Accreditation under the EPBC Act (Part 13 & 13A)	Part 13: Accredited Part 13A: Accredited (expires 22 November 2019)

1 Overview

1.1 Commercial Fishery

With an estimated Gross Value of Production (GVP) of \$1.5 million and a maximum operating potential of 46 primary vessels, the Gulf of Carpentaria Line Fishery (GOCLF) is one of Queensland's smallest commercial line fisheries. Operators in the fishery primarily target Spanish mackerel with the remainder of the catch consisting of various pelagic and demersal fin fish species. When compared to analogous fisheries on the east coast (the East Coast Spanish Mackerel Fishery), the management framework for the GOCLF is less advanced. None of the key target species, including Spanish mackerel, are managed under quota, and effort in the fishery is largely managed through input controls.

Access to the GOCLF is managed through the L4 fishery symbol, which governs the area of operation and the types of apparatus permitted for use. Under this symbol, operators are permitted to fish in tidal waters south of latitude S10°48', between the tip of the Cape York Peninsula and Queensland – Northern Territory border (Fig. 1) using a variety of line configurations.

1.2 Non-commercial Fishing

Spanish mackerel feature in the *Queensland Statewide Recreational Fishing Survey* (Webley *et al.*, 2015) and the species is actively targeted by recreationally fishers in the Gulf of Carpentaria. Other notable species retained by recreational fishers in the Gulf of Carpentaria include javelin, mullet and threadfin (Department of Agriculture and Fisheries, 2019). Additional information on the *Queensland Statewide Recreational Fishing Survey* is available at: <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-our-fisheries/recreational-fisheries/statewide-and-regional-recreational-fishing-survey>.

The popularity of Spanish mackerel as an angling species is reflected in charter sector. In 2017, 85 charter fishing operators retained over 23t of Spanish mackerel (Department of Agriculture and Fisheries, 2019). However, the vast majority of this catch was reported from the east coast with only 1t of Spanish mackerel retained in the Gulf of Carpentaria. A number of factors would have contributed to this catch differential including the remoteness of the region, smaller population sizes, accessibility, and a smaller tourism sector. 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/>).

In addition to the commercial, recreational and charter fishing sectors, Aboriginal peoples and Torres Strait Islander peoples will target and retain species that come under the domain of the GOCLF. Data on catch and effort levels for Aboriginal peoples and Torres Strait Islander peoples is poorly documented. However, DAF anticipates that this sector has comparatively low levels of effort with fishing activities aligning closely with the recreational fishing sector.

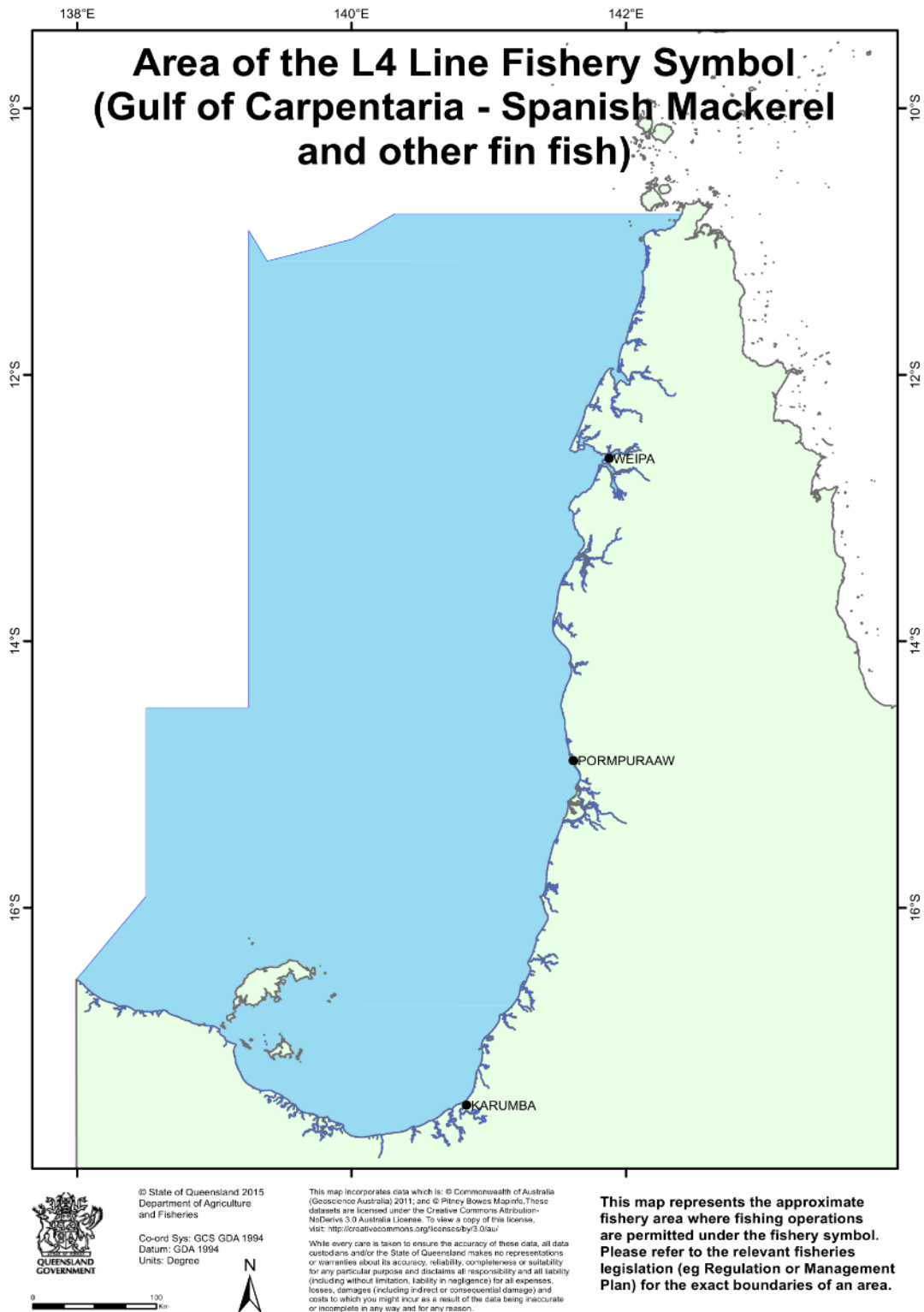


Figure 1. Primary fishing area of the Gulf of Carpentaria Line Fishery (GOCLF).

2 Legislation & Advisory Bodies

The GOCLF is managed in accordance with the broader objectives of the *Fisheries Act 1994* and its subordinate legislation, and continues to be managed as part of the *Queensland Fisheries Joint Authority* (QFJA). The QFJA includes representatives from the Commonwealth and Queensland Governments and the body is responsible for the management of fisheries operating in waters adjacent to Queensland e.g. the GOCLF, the Gulf of Carpentaria Inshore Fin Fish Fishery (GOCIFFF) and the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery (GOCDFFTF) (Australian Fisheries Management Authority, 2017).

Prior to 2011, the GOCLF was managed through the *Fisheries (Gulf of Carpentaria Inshore Fin Fish) Management Plan 2009*. In November 2011, the Management Plan was repealed and the management strategy consolidated into the *Fisheries Regulation 2008*. Since this has been repealed, the GOCLF is now managed under subordinate legislation of the *Fisheries Act 1994* including *Fisheries (Commercial Fisheries) Regulation 2019*, *Fisheries (General) Regulation 2019*, and *Fisheries Declaration 2019*. While the fishery does not operate under a management plan, the *Queensland Sustainable Fisheries Strategy* (the Strategy) identifies the development of harvest strategies as one of the major areas of reform (Department of Agriculture and Fisheries, 2017). The development of harvest strategies will be largely driven through Fisheries Working Groups (FWG) established through the broader Strategy. These groups include a wide range of stakeholders from the scientific community, management agencies, conservation groups and the commercial and recreational fishing sectors.

Given the dynamics of the fishery and the comparatively low levels of effort a Fisheries Working Group has not been established for the GOCLF under the *Queensland Sustainable Fisheries Strategy 2017–2027* (Department of Agriculture and Fisheries, 2017).

3 Key Management Controls

The GOCLF manages catch and effort using a number of input and output controls including limited entry, gear and vessel restrictions, and spatial 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 10nm miles from the primary boat. Gear is restricted to three fishing lines at a time with no more than six hooks (total) (Appendix A). Size limits apply to Spanish mackerel and most other fin fish permitted for harvest within the commercial, recreational and charter sectors. The recreational and charter sectors are also subject to possession limits.

The system of spatial closures used in the Gulf of Carpentaria is less expansive when compared to the Queensland east coast. The main reason for this is that the Queensland east coast has a more developed system of State and Commonwealth marine parks. This situation improved on 1 July 2018 when a number of Commonwealth managed (Department of Environment and Energy) marine reserves came into effect. These spatial closures are in addition to those outlined in the *Fisheries Declaration 2019* and will have a direct impact on the spatial extent of the GOCLF.

As the GOCLF is managed under the QFJA, operators have (historically) been allowed the use of configurations not encompassed in state legislation. For example, operators holding an L4 or L5¹ line fishing endorsement could apply for permits allowing them to use multi-hook apparatus (demersal trotline or dropline) instead of the maximum of six hooks and three lines outlined in legislation (*Fisheries*

¹ See Section 5 for more details about the L5 symbol.

(*Commercial Fisheries*) Regulation 2019). Although the QFJA no longer renews permits for alternative line fishing gears in the GOCLF, it is important to highlight the management controls that existed in the past.

Refer to the *Fisheries Act 1994* and its subordinate legislation (<https://www.legislation.qld.gov.au/>) for a full account of the current rules governing the use of the L4 fishery symbols. Catch harvested by Aboriginal peoples and Torres Strait Islander peoples is managed in consideration of the *Fisheries Act 1994* and the *Native Title Act 1993*.

4 Assessment History

The GOCLF was included in a previous Ecological Risk Assessment (ERA) examining the potential impacts of Queensland managed fisheries in the Gulf of Carpentaria (Zeller & Snape, 2006). This study found that the fishery posed a moderate risk to regional Spanish mackerel stocks and negligible risks to a number of byproduct and non-target species. This ERA was undertaken as part of the *Wildlife Trade Operation* (WTO) approvals process and a full copy of the report can be found at: https://www.daf.qld.gov.au/_data/assets/pdf_file/0003/61671/EcolRiskAssess-GOC-ERA.pdf

Spanish mackerel has been the subject of a detailed stock assessment on Queensland's east coast (Campbell *et al.*, 2012; O'Neill *et al.*, 2018) but one is yet to be completed for this species in the Gulf of Carpentaria. A report by Sumpton & O'Neill (2004) highlighted the challenges of completing a stock assessment for Spanish mackerel in the Gulf of Carpentaria with limited resourcing, less established monitoring programs and insufficient data from the commercial and recreational sectors highlighted as some of the key challenges. These challenges, in part, relate to the remoteness of the fishery and the additional expenses associated with monitoring fisheries in this region.

Outside of Spanish mackerel, stock assessments have been completed for a range of tropical snappers in the Gulf of Carpentaria (O'Neill *et al.*, 2011; O'Neill & Leigh, 2016). These species are primarily targeted by demersal fin fish trawls and only make a small contribution (<1t) to the annual GOCLF catch. To this extent, the results of these assessments and the biological reference points would be of more relevance to the GOCDFTF.

While a stock assessment has not been completed for Spanish mackerel in the Gulf of Carpentaria, the species have been included in the National *Status of Australian Fish Stocks* (SAFS) process. Based on the SAFS assessment criteria, Spanish mackerel stocks in the Gulf of Carpentaria were found to be fished at 'sustainable' levels (Langstreth *et al.*, 2018). A number of the byproduct species including grey mackerel (*S. semifasciatus*), red emperor (*Lutjanus sebae*) and golden snapper (*Pristipomoides multidens*) have been subject to the same assessment process (Helmke *et al.*, 2018; Newman *et al.*, 2018; Penny *et al.*, 2018).

Additional information on the stock status assessments be obtained through the SAFS website (<http://fish.gov.au/>) and through the DAF *Sustainability Reporting* website (<https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-compliance/data/sustainability-reporting>).

5 Licence & Fishery Symbols

Access to Queensland's commercial fisheries is managed using fishery symbols. These symbols, in effect, 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 access one fishery 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 Coral Reef Fin Fish Fishery (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 that represents the number of operators accessing the fishery over a 12-month period.

Queensland Fisheries 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. This is significant as the active licence data a) does not take into consideration the intentions of the fisher and b) differentiate between species that were taken opportunistically and those that were actively targeted. As a consequence, the active licence data may not provide a complete account of the current fishing environment or the broader priorities of a fishery.

Licensing arrangements for the GOCLF have evolved through time with the area of operation and permitted activities becoming more prescriptive. The L4 symbol was introduced in 1993 and superseded the more generic Line (L) fishing symbol. This was followed by the introduction of the L5 fishing symbol (inshore line fishery) in 1995 (Table 1). The L5 endorsement had identical gear restrictions to the L4, but differed with respect to the permitted fishing area (inshore *versus* offshore) (Roelofs, 2004). This symbol remained in effect until the end of June 2006 when all L5 symbols were replaced with L4 symbols. When this amalgamation occurred, the L4 fishing area was expanded to cover all waters of the Gulf of Carpentaria south of 10°48'S (Fig. 1).

As the GOCLF comes under the control of joint jurisdiction, operators could (previously) obtain permits from the QFJA authorising the use of alternate line configurations e.g. longlines, droplines. In recent years, efforts have been made to streamline the management of QFJA managed fisheries and transition them to single jurisdiction management system. For example, a number of jurisdictional issues between Queensland and the QFJA were resolved as part of the 2009 review of the Gulf of Carpentaria Inshore Fin Fish Fishery. While this review largely focused on the rationalisation of offshore net authorities, a number of changes enacted under this review impacted the GOCLF. This included amendments to state legislation that prohibited the use of demersal longline apparatus previously authorised for use under QFJA permits. While QFJA permits are independent of the L4 fishery symbol, catch and effort reported under these approvals are frequently included in broader GOCLF assessments as it relates to line caught species.

The number of line symbols permitted for use in the GOCLF peaked in 1995 at 105 before experiencing a period of decline. The most notable of these declines occurred in 2003 and 2004 where the total number of L4 and L5 fishery symbols reduced by 49% and 67% respectively (Table 1; Fig. 2). This reduction can be largely attributed to a 2003 latent effort removal process undertaken by the QFJA. While the removal of the L5 fishery symbol resulted in a marginal increase in the number of L4 symbols, licensing data for the fishery (overall) has been relatively stable across the post-2004 period (Table 1; Fig. 2).

When compared to fishing symbols, data on the number of operators accessing the fishery has more variability. At a whole of fishery level, the GOCLF has experienced a general but inconsistent decline in participation rates since its peak in 1997 (Table 1; Fig. 2). This decline accelerates in the post-2008 period where the number of licences accessing the fishery declined from 35 down to 16–20 (Fig. 2).

While it is difficult to ascertain the reasons behind the decline in participation rates, several external factors would have contributed to these trends including the 2009 *Gulf of Carpentaria Fin Fish Fishery Review* and the associated amendments affecting QFJA permits, the influence of other fisheries (e.g. the GOCDFFTF) and the introduction of Spanish mackerel quota on the east coast which may have been viewed as a higher priority for some fishers.

Table 1. An overview of the total number of active licences, and L4 and L5 fishing symbols in the GOCLF. *Discrepancies between the number of active licences and total number of symbols are due to the issuing and use of QFJA permits, which allowed operators to line fish in the Gulf of Carpentaria using endorsements other than L4 or L5.

Year	No. Active Licences	No. Symbols		
		Total	L4 (only)	L5 (only)
1993	29*	23	23	-
1994	33*	27	27	-
1995	46*	41	32	9
1996	45	54	42	12
1997	45	79	65	14
1998	35	96	76	20
1999	36	105	83	22
2000	26	102	82	20
2001	31	103	82	21
2002	37	102	81	21
2003	33	102	81	21
2004	27	48	41	7
2005	32	47	40	7
2006	29	44	37	7
2007	31	47	47 ²	-
2008	35	47	47	-
2009	28	47	47	-
2010	23	47	47	-
2011	22	46	46	-
2012	16	46	46	-
2013	16	46	46	-
2014	16	46	46	-
2015	15	46	46	-
2016	16	46	46	-
2017	20	46	46	-

² In 2007 the number of L4 fishing symbols increased by a number greater than the total number of L5 symbols ($n = 10$ versus $n = 7$). This is likely because symbol amalgamation during 2006 went beyond replacing all L5 fishing symbols with L4s, and may have included several QFJA permit licences to also be replaced with L4s.

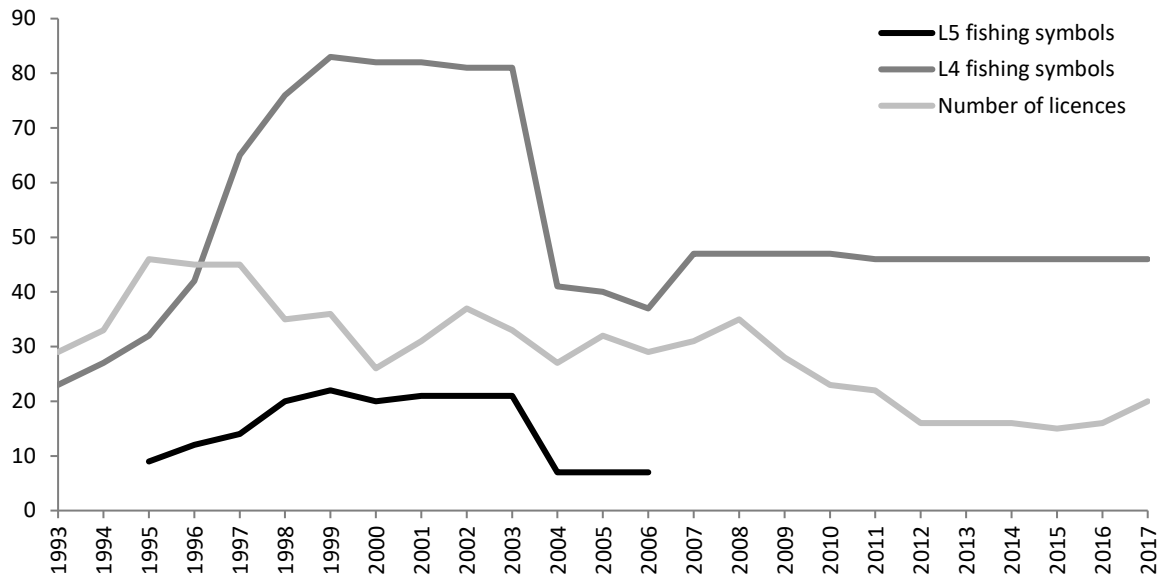


Figure 2. Fishing symbols (L4 & L5) and active licence summary for the GOCLF.

6 Catch & Effort

6.1 Effort

Total effort for the GOCLF is recorded as primary vessel days despite the use of tender vessels being permitted for this fishery. This differs from other line fisheries including the Coral Reef Fin Fish Fishery and the Rocky Reef Fin Fish Fishery where effort is reported as both primary effort days and dory days. Primary effort in the GOCLF is relatively low when compared to line fisheries on the Queensland east coast (Table 2). While effort levels in the GOCLF have notable fluctuations, annual effort levels in the post-2008 period are lower. This decline coincides with a corresponding decline in participation rates (Table 2, Fig. 3a). Of note, effort increased from 2003 to 2007 suggesting that the QFJA latent effort review had minimal impact on the operational capacity of the fishery (Table 2; Fig. 3a).

Over the past three years, effort in the GOCLF was distributed across both inshore and offshore areas (Appendix B). The highest concentration of effort is around the north Queensland town of Weipa, whereas effort in the southern half of the L4 fishing area is more sporadic. Between recent years, effort in this fishery appears to be spatially consistent.

6.2 Catch

For the most part, the relationship between catch and effort in this fishery is correlated. This is most evident between 1993–2002 and 2009–2017 where catch and effort rises and falls together (Fig. 3b). There is however a notable peak in catch in 2006 which was not matched by the effort data (Table 2; Fig 3b). This peak (654t) was over three times higher than the 1993–2002 and 2009–2017 average (196t annually) and was largely driven by an increase in shark catch (Table 2, Fig, 3b–c, Appendix C)³. This increase can be attributed to the issuing of QFJA permits that allowed the use of alternate apparatus (e.g. longlines, droplines). This trend reversed in subsequent years when state legislation

³ Shark species comprised around half of the catch weight (44–64%) during the 2006–2007 period compared to 0–3.5% in the preceding and proceeding year (Appendix C).

was amended to prohibit the use of multi-hook line apparatus e.g. demersal long lines (Fig. 3c) (Department of Employment Economic Development and Innovation, 2010).

Table 2. The number of active licences, effort (days fished) and total catch (tonnes) for the GOCLF⁴.

Year	Active licences	Effort (days)	Catch (t)
1993	29	1127	199
1994	33	1233	184
1995	46	1733	217
1996	45	1463	147
1997	45	1708	236
1998	35	1229	144
1999	36	1620	268
2000	26	812	137
2001	31	868	148
2002	37	1240	214
2003	33	1254	197
2004	27	929	212
2005	32	1192	311
2006	29	1190	654
2007	31	1469	515
2008	35	1561	381
2009	28	1108	247
2010	23	820	200
2011	22	951	254
2012	16	803	204
2013	16	602	185
2014	16	721	195
2015	15	764	160
2016	16	625	179
2017	20	1101	211

⁴ Includes data recorded against both the L4 and L5 fishing symbols. The L5 fishing symbol was in effect from 1995 to 2006 before it was amalgamated with the L4 symbol.

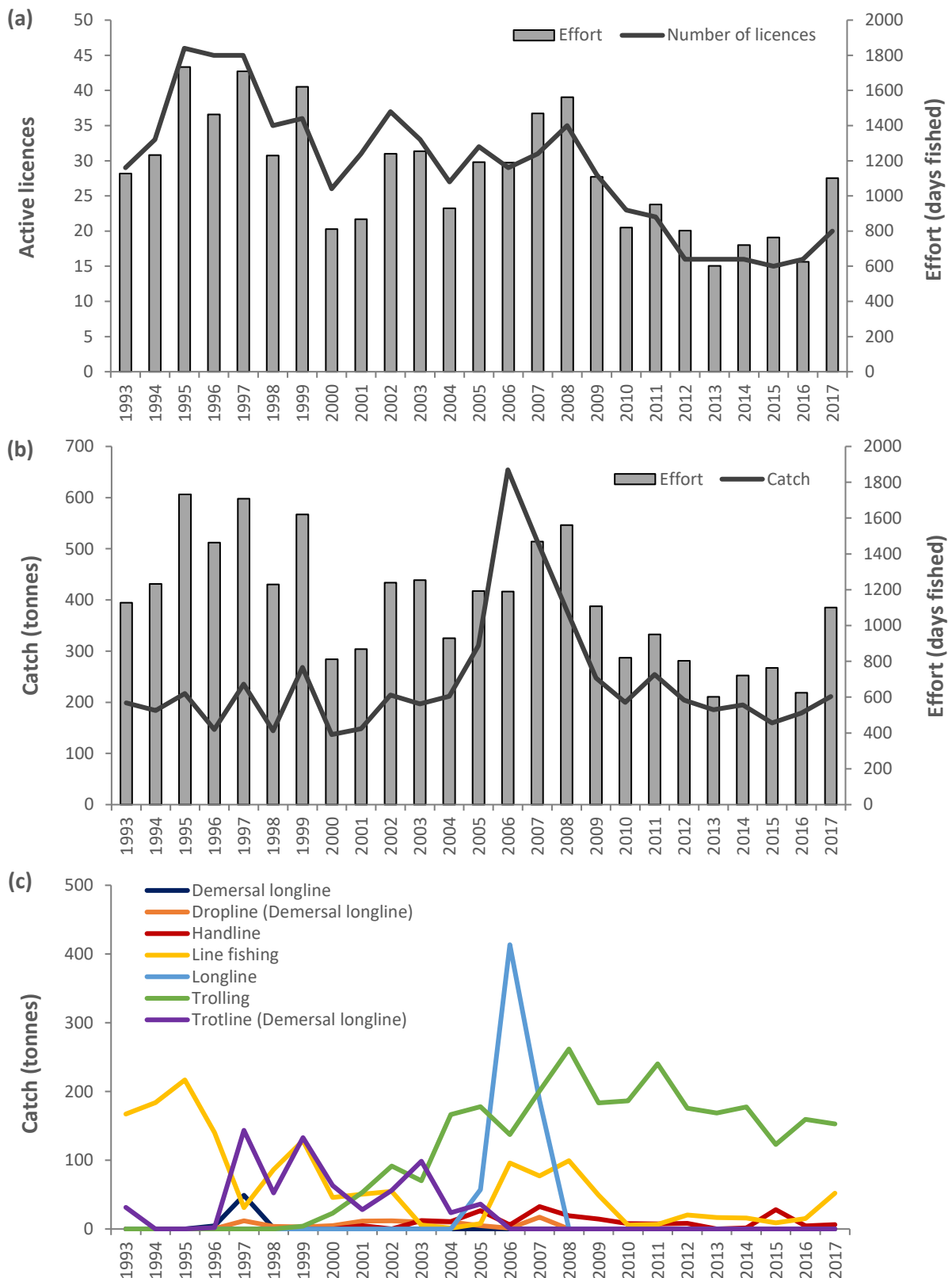


Figure 3. Data for the GOCLF between 1993 and 2017 (inclusive): (a) the number of active licences and effort (days fished), (b) effort (days fished) and catch (tonnes), and (c) fishing method change through time according to catch (tonnes).

6.3 Species Composition

There have been changes in the management regime which have resulted in a subtle transition from a multi-species targeted fishery to one focused on catching Spanish mackerel. This is especially evident in the species-specific catch data post-2010 (Appendix C) and observed changes in fishing methodology (Fig. 3c). The most significant of these management changes included the non-renewal of permits for some types of line fishing (demersal longlines and trotlines), restricting operators to target pelagic fin fish by trolling or line fish using rods/handlines (Fig. 3c). While other fin fish, sharks, and rays are able to be retained in this fishery, most are caught incidentally when targeting Spanish mackerel (vs. being actively targeted).

The largest byproduct components by weight since 2008 include blacktip whaler and unspecified shark (approx. 4t per year), grey mackerel (approx. 2t per year), small mouth nannygai (approx. 2t) and large mouth nannygai (approx. 2t) (Appendix C). When compared to the average harvest of Spanish mackerel during this recent time period (202t per year), byproduct in the GOCLF makes up a small proportion of retained catch (Appendix C).

Several species of fin fish are not permitted to be retained in this fishery (e.g. Barramundi) and are managed under the Gulf of Carpentaria net fishery (GOCIFFF) (Appendix A).

6.4 Bycatch

There is likely to be very little bycatch in the GOCLF as fishing activities are generally designed to target a single species, Spanish mackerel (Roelofs, 2004). As operators will be in attendance for the duration of the fishing event, any product caught that cannot be retained will be readily released (Roelofs, 2004).

Although little information exists for bycatch compositions within the GOCLF, fisheries in neighbouring jurisdictions or other line fisheries provide insight into the kinds of species caught as bycatch in this fishery. The Northern Territory Spanish Mackerel Fishery records negligible bycatch, with sharks being the most incidentally caught species. The CRFFF operates throughout the Great Barrier Reef but has very similar fishing methods and gear restrictions to the GOCLF, and its records indicate that 25% of the total catch was bycatch, 50% of which was undersized target and byproduct species (Ryan *et al.*, 2003). The majority of bycatch in the CRFFF is released alive (Ryan *et al.*, 2003).

Dominant species likely to feature in the GOCLF's bycatch compositions include barracuda, sharks, tuna, rays, and sawfish, all of which are usually released alive (Roelofs, 2004). DAF notes though that the fate of released fish will vary depending on the species, water depth and their potential to avoid predation.

6.5 Species of Conservation Interest

Logbook data for the GOCLF reveal almost negligible interactions with *Species of Conservation Interest* (SOCI), consisting only of a single sea snake.

Prior to the introduction of the SOCI logbook in December 2002, interactions with protected species in commonwealth waters were required to be reported to the Department of the Environment under the *Environmental Protection and Biodiversity Act 1999*. These historical records indicate that a number of elasmobranchs were caught and released alive in the GOCLF. Due to the highly targeted nature of line

fishing and relatively small size of the fishery ($n = 15\text{--}37$ active licences since 1993), the GOCLF is likely to have very few interactions with SOCI (Roelofs, 2004).

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8 Appendix

- Appendix A—Permissions according to *Fisheries (Commercial Fisheries) Regulation 2019* regarding use of the L4 fishing symbol.
- Appendix B—Effort distribution maps for the GOCLF for the years 2015–17.
- Appendix C—Catch composition data for the GOCLF based on commercial logbooks (1993–2017).

APPENDIX A—Permissions according to Fisheries (Commercial Fisheries) Regulation 2008 regarding use of the L4 fishing symbol.

Permitted gear

- Fish may only be taken by line fishing.
- A person may use a maximum of 3 fishing lines at a time.
- No more than 6 hooks or lures may be used at a time.

Permitted species

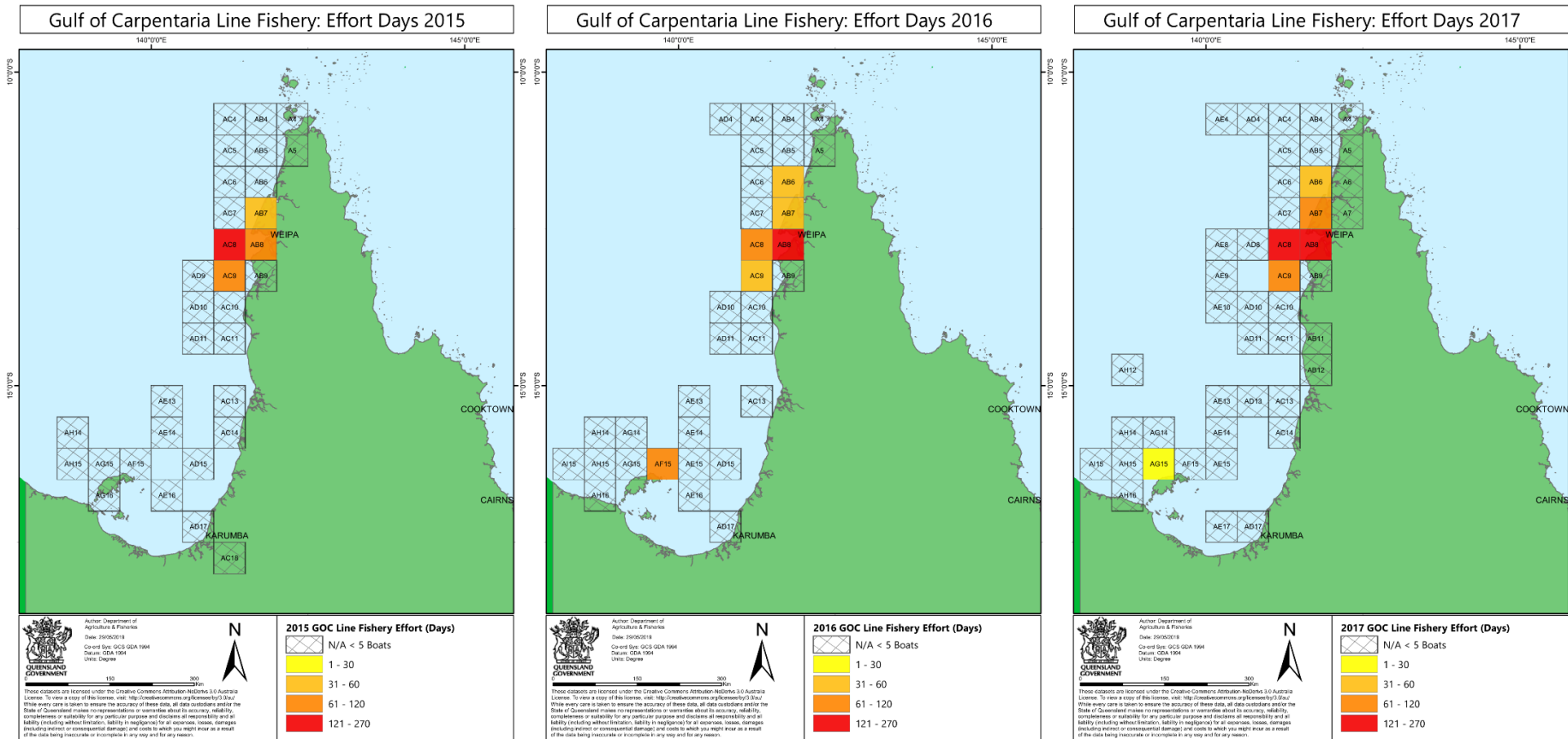
All fin fish except:

- Barramundi;
- Black Jewfish;
- Scaly jewfish;
- Blue threadfin;
- King threadfin;
- Silver javelin; and
- Giant queenfish.

Vessel regulations

- Primary boat must not be longer than 20m.
- Tender boat must not be used more than 10nm from its primary boat.

APPENDIX B—Effort (days fished) distribution maps for the GOCLF for the years 2015–17.



APPENDIX C—Catch (t) composition data for the Gulf of Carpentaria Line Fishery (GOCLF) based on commercial logbook receipts between 1993 and 2017 (inclusive).⁵

Species	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
Bait fish											0.14																
Barramundi						0.25																					
Bat fish - spotted			0.01																								
Bat fish - unspecified						0.04																					
Blacktip whaler shark															0.18	8.10	37.87	0.20	0.20	0.06	0.11						
Bream - black (luderick)					0.1																						
Bream - unspecified					0.02						0.21																
Catfishes			0.97	0.23			0.37	0.98		0.18	1.38	0.53		1.03	0.31		0.25	0.10	0.07								
Cod - bar															0.06	0.28											
Cod - barramundi		0.13	0.17	0.00						0.00																	
Cod - estuary													0.02	0.02													
Cod - greasy				0.01					0.04	0.04		0.05		0.18	0.21	0.09											
Cod - jumping (tripletail)			0.01																								
Cod - unspecified	0.29		0.32	0.53	0.44	0.53	0.33	0.01	0.09	0.15	1.59	0.37	0.12	1.08	6.09	0.64	0.68	0.01				0.05	0.07	0.03	0.06		
Cod - yellow spotted rock														0.1													
Coral trout	0.17	1.08	0.33	0.73	1.34	1.07	27.88	2.17	0.35	1.60	0.88	0.23	6.15	0.23	2.22	0.44	0.07		0.05	0.06		0.00	0.04	0.09	0.12		
Dart - unspecified					0.50						0.09																
Emperor - grass										0.15				0.03										0.17	0.73		
Emperor - long nose					0.00											0.10											
Emperor - red		0.04	2.90		0.02		0.04	0.95	0.23	0.94	0.59	1.33	2.16	0.33	3.61	1.49	1.18						0.15		0.04		
Emperor - red throat	0.08	0.19	0.01	1.49	0.22	0.64	31.19	0.28	0.07	0.19	0.36	0.17	4.89	0.00	6.39	0.12											
Emperor - spangled			0.01	0.01								0.01		0.24		0.16	0.09						1.60				
Emperor - Unspecified	0.92	0.89	1.63	0.42	0.91	0.91	22.84	1.05		0.06	0.03			0.06	0.15	0.70	0.01					0.03	0.02		0.01		
Fish - mixed reef	0.04	0.28								0.81	0.23		0.02														
Fish - mixed reef a		0.30		0.02		0.07																					
Fish - mixed reef b		0.90																									
Fish - unspecified	2.52	0.72	2.39	3.00	0.90	3.61	0.02	1.12	0.36	0.10	0.59		0.34	0.06	0.02	0.13	0.06	0.05	0.46	0.03				0.05	0.00		
Flathead - unspecified					0.05						0.05																
Frypan Bream																0.07											
Garfish - unspecified	1.28	0.30	1.29	0.90	0.05	0.09	0.13	0.74			0.45	0.10	0.05	0.16													
Golden Snapper											0.77	3.44	0.05	1.53	1.87	0.05	0.06	0.01			0.19		0.08	0.73	0.17		
Grunter - unspecified	0.04		0.06	0.22	1.25	0.27	0.45	0.45	4.77	0.24	0.85	0.49	0.20	0.36	0.32	0.32	0.32	0.09	0.18	0.05	0.02					0.33	
Guitarfishes - shovelnose unspecified												0.05	0.94	0.46	2.04	0.09											
Hammerhead shark															0.08	1.79	1.42	0.01	0.05								
Hussar - unspecified							0.28																				
Jew fish - black					0.03																						
Jew fish - mullo way			1.14	0.05																							
Jew fish - unspecified					0.53		0.20	0.20						0.03													
Jewel					0.02						0.09		0.11	0.03													

⁵ Logbook records include species which are not permitted to be retained under the L4 symbol (e.g. Barramundi). Possible explanations for these anomalies include operators legally retaining fish caught in a different fishery (i.e. Net) and incorrectly recording it into a line fishing logbook versus the net logbook. The amount of non-retainable product recorded in the GOCLF logbooks equates to <1t per annum.

Species	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jobfish - gold banded								0.04	0.23	0.13		0.24	0.05												
Jobfish - unspecified	0.03		0.01		0.03																				
Kingfish - black	0.17	0.15	0.05	0.22	0.20	0.48	0.04	0.36	0.19	0.14	0.26	0.04	0.12	0.07	0.19	0.25	0.28	0.11	2.72	0.73	0.04	0.12	0.30	0.05	0.35
Kingfish - unspecified			0.01										0.02												
Lobster - cray tails																									
Lobster - unspecified						0.04																			
Mackerel - grey	0.08	2.96	5.66	0.04	3.16	1.04	2.95	1.93	0.32	2.93	0.27	1.70	2.07	8.40	10.97	9.09	2.89	0.69	1.49	2.72	0.06	0.40	1.32	0.17	2.22
Mackerel - school	0.04	0.19	0.09	0.09											0.24		0.27	0.27				0.00	0.12	0.02	0.06
Mackerel - shark	0.02	0.02	0.03	0.07	0.32			0.02			0.02											0.06	0.12	0.01	0.05
Mackerel - Spanish	186.30	175.11	192.75	129.12	214.63	129.98	163.88	121.30	137.46	197.36	167.13	193.28	228.61	218.29	225.41	284.82	189.19	187.50	246.70	197.68	184.90	193.56	155.68	177.64	205.58
Mackerel - spotted			0.22	0.01										0.05						0.01					
Mackerel - unspecified	5.00	0.18	0.32		1.24		0.32		0.48		0.26			0.02								0.10			
Mangrove jack	0.00	0.05	0.53	0.95	1.38	0.09	0.09	0.01			0.93	0.33	0.00		2.79	0.19							0.02		
morwongs				0.02																					
Nannygai - large mouth		0.03		0.00	0.71	0.02			0.26	1.17	2.66	0.86	0.13	0.07	5.00	10.09	3.95	3.85		2.26		0.09	0.06	0.01	0.21
Nannygai - small mouth					0.75			0.96	0.05	0.05	2.80	4.54			11.58	8.91	1.41	3.55	0.01			0.06	0.04	0.12	0.50
Nannygai - unspecified			0.06	1.94	0.26			0.08	0.21				0.30		0.50										
Painted sweetlip						0.12																			
Perch - Moses				0.15	0.02	1.26	0.45	0.82	0.23	3.36	2.92			0.94	0.48										
Pike eel																	0.04								
Pomfret - unspecified						0.04				0.04															
Queenfish - unspecified	0.64	0.01	0.95	1.97	0.79	2.30	3.81	0.86	1.07	0.21	6.51	0.87	0.71	1.95	0.70	0.48	0.64	0.54	1.04	0.11					0.36
Queensland halibut									0.01																
Ray - eastern fiddler																									
Sailfish - pacific														0.15											
Samson fish				0.05	0.09																				
Sawfish - unspecified																0.37									
Sea bass															0.06									0.08	
Shark - Australian blacktip	0.10	0.09			0.02		0.02							0.01											
Shark - bull																0.20	4.59	0.36							
Shark - fins unspecified		0.04	0.16	0.17																					
Shark - lemon													4.39	40.07	5.68										
Shark - scalloped hammerhead										13.41	70.68	32.47													
Shark - silky																4.42									
Shark - tiger													5.16	27.90	7.18	0.54	0.48								
Shark - unspecified	0.62	0.08	3.84	4.03	2.65	0.50	9.47	0.87	0.38	2.53	3.24	1.56	1.60	3.57	42.06	40.83	0.05	0.00		0.02	0.01			0.01	
Shark - whaler unspecified													34.31	274.28	141.82			0.10							
Skins - unspecified																									
Snapper - ruby										0.02					1.71	3.85									
Snapper - saddleback													0.32												
Snapper - unspecified tropical					0.65		0.95	0.71	0.35	1.37	0.41	0.39	0.23	2.32	0.98	0.84	0.63	0.43	1.18	0.65					
Snapper (squire)			0.36	0.04	0.14	0.20	0.66	0.27	0.04	0.08	0.02	0.88	4.33	0.00											
Squid - unspecified					0.04	0.05	0.01			0.27															

Species	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
striped seapike	0.07		0.10		0.49		0.95	0.06	0.09			0.06	0.41												
Stripey - spanish flag		0.01			0.03										0.03										
Swordfish																				0.02					
Threadfin - blue				0.13	0.15	0.02		0.30	0.02	0.06	0.50	0.05	0.20				0.00								0.06
Threadfin - king	0.30		0.11	0.19	0.09	0.11		0.25	0.79	0.13	0.07					0.16	0.02								0.07
Threadfin - unspecified			0.25	0.06	0.89	0.03								0.05											
Trevally - black							0.01																		
Trevally - giant					0.11																				
Trevally - gold spot				0.00																					
Trevally - golden					0.03																				
Trevally - unspecified				0.04	0.15	0.01	0.01	0.14	0.11	0.12	0.41		0.26	0.03	3.74	0.06	0.35	0.03	0.25			0.20	0.18	0.02	0.23
Tuna - long tail					0.02		0.10																		
Tuna - unspecified				0.01			0.02							0.01											
Tusk fish - blue		0.01	0.00													0.01									
Tusk fish - unspecified			0.25	0.00	0.15	0.20	0.90		0.03			0.32	0.07		0.00										
Wrasse - blue banded		0.11																							
Wrasse - unspecified						0.10	0.01																		
Total	198.69	183.87	216.96	146.89	235.54	144.05	268.36	136.91	148.22	214.40	196.71	211.83	310.83	654.31	515.13	380.50	247.25	199.92	254.47	204.39	185.33	194.66	159.79	179.20	211.15