Chapter 29
Joint authority fisheries
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FIGURE 29.1 Geographic extent of the joint authority fisheries
The Australian Government is a party to several fisheries managed under joint authority arrangements with state governments or the Northern Territory Government. These arrangements are species- or area-based, and recognise that stocks are likely to be shared with adjacent national or international jurisdictions. In northern Australian waters, several shark and finfish joint authority fisheries are collectively referred to in this report as the ‘northern shark fishery’ and the ‘northern finfish fishery’ (Figure 29.1). In each case, strategic directions are provided by members of the joint authority, while the relevant state or territory government provides day-to-day management of the fishery under its legislation. The relevant jurisdictions assess and report on the management and status of the fisheries. The stocks harvested in these fisheries are not formally classified in this report.

In 1995, under the Offshore Constitutional Settlement (OCS), the Western Australia Fisheries Joint Authority (WAFJA) was given responsibility for the management of the northern shark fishery in accordance with the provisions of the Western Australian Fish Resources Management Act 1994.

Also in 1995, under the OCS, the Northern Territory Fisheries Joint Authority (NTFJA) and the Queensland Fisheries Joint Authority (QFJA) were given jurisdiction to manage northern finfish (except for tuna and tuna-like species) and sharks in waters adjacent to each jurisdiction out to the boundary of the Australian Fishing Zone (AFZ) (Figure 29.1).

Torres Strait fisheries are managed under different arrangements by the Protected Zone Joint Authority established under the Torres Strait Fisheries Act 1984 (Cth) (see Chapter 15).

29.1 Northern shark fishery

Australian gillnetters began fishing in northern Australian waters in about 1980, although foreign vessels were fishing in the area before then and continued to do so until 1986. Fisheries comprising the northern shark fishery were developed during the 1980s and 1990s, and transferred to the relevant joint authorities in 1995. They include the Northern Territory Offshore Net and Line Fishery, the Queensland Gulf of Carpentaria Inshore Fin Fish Fishery and the Western Australia Joint Authority Northern Shark Fishery (JANSF). The fisheries cover waters off Australia’s northern coast, encompassing the Gulf of Carpentaria, the Timor and Arafura seas, Joseph Bonaparte Gulf and the north-east coast of Western Australia (Figure 29.1).

The primary fishing methods used are gillnets and longlines, and most activity and catch occur in waters off the Northern Territory. Historically, the main commercial species have been blacktip sharks (Australian blacktip *Carcharhinus tilstoni*, and common blacktip *C. limbatus*), spot-tail shark (*C. sorrah*) and grey mackerel (*Scomberomorus semifasciatus*). The Australian and common blacktip sharks are difficult to differentiate and so have been treated as a species complex, with the assumption that most are Australian blacktip; genetic analyses have, however, challenged this assumption (discussed in ‘Status of stocks’, below). Other shark species, including hammerheads (*Sphyraena* spp.), bull shark (*C. leucas*), pigeye shark (*C. amboinensis*) and tiger shark (*Galeocerdo cuvier*), are also caught. Sharks are also taken as bycatch and byproduct in other fisheries in the area.
Northern Territory Offshore Net and Line Fishery

This fishery is managed by the NTFJA, in accordance with the Fisheries Act (NT, 1988). An individual transferable quota management framework and associated harvest strategy were introduced in December 2018 (Northern Territory Government 2018). Most fishing in the waters off the Northern Territory occurs in inshore waters (less than 12 nautical miles [nm] from the coast), targeting blacktip shark and grey mackerel. Pelagic gillnets (limited to 2,000 m net length) are the main gear. Although longlines can also be used, they have not been used in the fishery since 2013 (Northern Territory Government 2018).

Catch-and-effort data for 2019 were provided directly to ABARES from the Northern Territory Department of Primary Industry and Resources. Of the 24 licences issued in 2019, 13 were active, recording 751 boat-days fished—well below the peak of 1,801 boat-days in 2003. The highest domestic catch was reported in 2003 at 1,687 t, including 899 t of shark (of which 501 t was blacktip shark) and 766 t of grey mackerel. Total landings have decreased since 2003, to a total catch of 538 t in 2019 (down from 694 t in 2018). The 2019 catch included 44 t of blacktip shark and 350 t of grey mackerel.

Export accreditation has been granted under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) until 27 March 2022.

Queensland Gulf of Carpentaria Inshore Fin Fish Fishery

The QFJA manages shark fishing in Gulf of Carpentaria waters off Queensland as part of the Gulf of Carpentaria Inshore Fin Fish Fishery. The fishery has 2 sectors: an offshore sector (7–25 nm) that targets tropical sharks and grey mackerel, and an inshore sector (within 7 nm of the shore) that targets barramundi (Lates calcarifer), threadfins (Polynemidae) and sharks. The main gear used is gillnets; operators in the offshore sector are limited to a maximum net length of 1,800 m.

Catch-and-effort data for 2019 were provided directly to ABARES from the Queensland Department of Agriculture and Fisheries. Of the 89 licences issued in 2019, 71 were active—3 in the offshore sector and 68 in the inshore sector. In 2019, reported catch of blacktip shark was 110 t (a slight decrease from 112 t in 2018).

Queensland considers most barramundi stocks to be sustainable, except for the southern Gulf of Carpentaria stock, which is classified as depleting (Saunders et al. 2018a). The east coast stock of king threadfin (Polydactylus macrochir) is considered sustainable; however, the Gulf of Carpentaria stock is considered to be depleting (QDAF 2017; Whybird et al. 2018). No concerns for harvest of shark species were identified in reviews by Holmes et al. (2013). Export accreditation has been granted under the EPBC Act until 18 March 2022.
Western Australia Joint Authority Northern Shark Fishery

This fishery is managed by the WAFJA. For reporting and assessment purposes, it is combined with the adjacent Western Australia North Coast Shark Fishery (WANCSF) and reported as part of the northern shark fishery. The JANSF extends from longitude 123°45'E to the Northern Territory border, and the WANCSF extends from longitude 114°06'E to 123°45'E. Western Australia reported on the status of these fisheries in McAuley and Rowland (2012), and Molony, McAuley & Rowland (2013); however, the JANSF and the WANCSF are no longer included in the Western Australian state of the fisheries report. Since 2005, demersal gillnets and longlines have been permitted in both fisheries, with longlines being the main gear used.

Effort increased in this fishery between 1999–2000 (less than 100,000 hook-days) and 2004–05 (1.2 million hook-days). The total catch showed a corresponding increase, from approximately 100 t (1999–2000) to 1,294 t (2004–05). Fishing practices also changed, with a shift from primarily gillnetting in the north-eastern region of the fishery to increased demersal longline effort in the south-western region (McAuley & Baudains 2007). The changes reflected increased targeting of sandbar shark (*Carcharhinus plumbeus*) and other large species. Fishing activity has not been reported in the JANSF since 2008–09.

The stock assessment for sandbar shark, which considers all take of the species across Western Australian fisheries, suggested that cumulative levels of fishing mortality were increasingly unsustainable between 2001 and 2004, and had probably been unsustainable since at least 1997–98 (McAuley et al. 2015). Three-quarters of the total catch in 2004–05 was from the JANSF alone. A decline in breeding stock abundance has been inferred from fishery-independent survey data from the north-coast region (McAuley et al. 2015).

Management measures to prevent targeting of sandbar shark in the WANCSF were put in place in 2005; these included closure of about 60% of the fishery to protect breeding stock, and limits on the permitted number of fishing days. At the same time, management arrangements to limit effort were established in the JANSF. These measures resulted in a substantial decline in total fishing effort and an associated decrease in total reported catch.

In 2008, the JANSF’s Wildlife Trade Operation approval under the EPBC Act was revoked because a formal management plan had not been finalised. The WANCSF’s approval expired in early 2009 and has not been renewed. Therefore, product from these fisheries cannot be exported.

Other catches, including illegal fishing

Across the area of the northern shark fishery, sharks are caught as bycatch and byproduct in other Commonwealth, state and territory fisheries. In Western Australia, the 2016–17 catch of sharks by other state-managed fisheries was negligible—less than 10 t (it peaked at 31 t in 2005–06) (Gaugan, Molony & Santoro 2019)—as a result of a ban on retention in all but 3 non-shark fisheries (McAuley & Baudains 2007; Molony, McAuley & Rowland 2013). The Northern Territory Government estimates that incidental catch in other Northern Territory fisheries is around 1% of the total combined fisheries shark catch; retention is banned in some fisheries and limited by byproduct limits in others (Martin & McKey 2012). Retention of any shark product has been banned in the Northern Prawn Fishery since 2001.
Under a memorandum of understanding (MOU), Australia allows access by traditional Indonesian fishers to a limited area of the AFZ off north-western Western Australia, known as the ‘MOU box’. Operation Snapshot is an opportunistic activity that aims to estimate catches by traditional Indonesian fisheries operating in these waters (Marshall, Giles & Johnson 2016). In 2015, genetic analysis of 152 shark fins from 9 fishing vessels identified 16 species belonging to the families Carcharhinidae (whaler sharks) and Sphyrnidae (hammerhead sharks). The 2 most abundant species by number were sandbar shark and tiger shark, which made up 43.4% and 29.6% of the catch, respectively, followed by spinner shark (*Carcharhinus brevipinna*; 7.2%) and grey reef shark (*C. amblyrhynchos*; 5.3%) (Marshall, Giles & Johnson 2016). The observed species composition was similar to that found on other Indonesian vessels fishing in northern Australian waters; however, there was a notable absence of smaller inshore shark species (Marshall, Giles & Johnson 2016).

Historically, illegal foreign fishing in northern waters is generally conducted by small vessels that target a range of species, including shark, reef fish and sedentary species such as sea cucumber and trochus (Vince 2007). In 2018–19, 5 illegal foreign fishing vessels (all Indonesian) were apprehended in Australian waters (AFMA 2019). In 2017–18, 14 illegal foreign fishing vessels were apprehended (9 Indonesian and 5 Papua New Guinean). Overall numbers are well down on the 367 vessels apprehended in 2005–06, reflecting a sustained and coordinated effort by Australian Government agencies to reduce the number of vessels being apprehended each year.

**Status of stocks**

The Northern Territory Government updated a stock assessment of common blacktip shark and Australian blacktip shark in 2013 (Grubert et al. 2013). The assessment indicated that the species have recovered from depletion associated with the historically high catches of the 1970s and 1980s, when foreign-flagged vessels operated in Australian waters. Fishing mortality for both species was estimated to be below the level that produces maximum sustainable yield (MSY; 19% of MSY for common blacktip shark and 12% of MSY for Australian blacktip shark), and the current level of fishing effort was sustainable. Current biomass is estimated to be at 81% of unfished biomass for common blacktip shark and 90% for Australian blacktip shark.

A 2015 stock assessment of sharks encountered by Queensland commercial fishers concluded that commercial catches of blacktip sharks are below MSY limits (Leigh 2015). However, the assessment also acknowledged data limitations with respect to accuracy of species identifications and the quantity and reliability of available catch data. As a result, current catch levels and their impact on the biological stock are unknown, and there is insufficient information to confidently classify the status of the stock in the Gulf of Carpentaria (Johnson et al. 2018).
Genetic studies (Ovenden et al. 2009) of spot-tail and Australian blacktip sharks show little genetic variation in either species across the north, suggesting that it may be appropriate to manage each species as a single stock across the region. In contrast, common blacktip shark may have genetic subdivisions in Australian waters (Ovenden et al. 2009). Genetic studies also detected an apparent change in the relative proportion of common and Australian blacktip sharks in the catch. In the 1980s, Australian blacktip shark was understood to be the major component of the catch, and common blacktip shark was caught in much lower numbers (the ratio of Australian to common blacktip shark was estimated to be 300:1; Stevens & Davenport 1991). More recent studies have indicated a ratio closer to 1:1 (Morgan et al. 2012). In 2011, genetic research demonstrated that hybridisation was occurring between the species (Morgan et al. 2012). The results have increased the uncertainty in the status of the stocks, and the implications have yet to be fully assessed.

### 29.2 Northern finfish fishery

Foreign pair and stern trawlers (Chinese, Japanese, Taiwanese and Thai) have fished waters off northern Australia periodically since the 1930s. After the AFZ was declared, foreign trawlers were licensed to fish in the northern AFZ until 1990. The main regions fished were the Timor and Arafura seas, and the North West Shelf off Western Australia. The foreign fleets’ highest catches were 37,100 t on the North West Shelf (1973), 9,100 t in the Timor Sea (1974) and 10,000 t in the Arafura Sea (1983). Australian trawlers started fishing in the area in 1985; a domestic trap-and-line fishery began on the North West Shelf in 1984, and droplining in the Timor Sea began in 1987.

The main species targeted are large red snappers (saddletail snapper—*Lutjanus malabaricus*, and crimson snapper—*L. erythropterus*) and goldband snappers (primarily *Pristipomoides multidens*, but also *P. typus* and *P. filamentosus*). The joint authorities include trawl, dropline and trap fisheries, which have developed differently over time.

### Northern Territory

The NTFJA manages 2 fisheries targeting tropical snappers: the Timor Reef Fishery and the Demersal Fishery. The Timor Reef Fishery operates offshore, north-west of Darwin in a specific area of the Timor Sea. The Demersal Fishery operates in waters from 15 nm out to the AFZ boundary, excluding the area of the Timor Reef Fishery. Until recently, the NTFJA also managed a third snapper fishery, the Finfish Trawl Fishery, but, in February 2012, this was amalgamated into the Demersal Fishery under a new management framework (Saunders, Johnson & Mckey 2014). In February 2011, the Northern Territory implemented quota management in the Timor Reef Fishery to better use the offshore snapper stocks and provide increased flexibility to operators (NT DoR 2011; Saunders, Johnson & Mckey 2014). Individual transferable quotas were introduced into the new management framework of the Demersal Fishery in 2012.
Vessels in the Demersal and Timor Reef fisheries use vertical droplines and baited traps to target goldband snappers, but also catch red snappers (Lutjanidae), red emperor (Lutjanus sebae) and cods (Epinephelus spp.). The Demersal Fishery also permits semipelagic finfish trawl gear in 2 multigear areas. Dropline fishing takes mostly goldband snappers, whereas traps catch nearly equal proportions of goldband snappers and red snappers. Trawl vessels mainly target saddletail snapper and crimson snapper. The status of these stocks is reviewed in *Status of key Northern Territory fish stocks report 2017* (Northern Territory Government 2019). Catch-and-effort data for 2019 were provided directly to ABARES from the Northern Territory Department of Primary Industry and Resources.

In 2019, 6 vessels were active in the Timor Reef Fishery, recording 650 vessel-days, and 6 vessels were active in the Demersal Fishery, recording 1,250 vessel-days. The Timor Reef Fishery reported a total catch of 439 t in 2019 (837 t in 2018), including 212 t of goldband snappers and 124 t of red snappers. The Demersal Fishery reported a total catch of 3,375 t in 2019, including 215 t of goldband snappers and 2,608 t of red snappers.

The Timor Reef Fishery and the Demersal Fishery have been granted an exemption from export restrictions until 13 June 2020.

**Queensland**

The QFJA manages the Gulf of Carpentaria Developmental Fin Fish Trawl Fishery, which targets red snappers (Keag 2013). The fishery, which commenced in 1998, operates from 25 nm out to the AFZ boundary. A summary of this fishery is provided by the Queensland Department of Agriculture and Fisheries (QDAF 2019). Although 3 fishing permits are issued to access the fishery, there has been no fishing activity since 2016–17. Catch and effort in this fishery have declined substantially from 2009–10, when total catch was reported to be 781 t from 389 vessel-days. The fishery’s export approval expired on 22 November 2019.

The Queensland Gulf of Carpentaria Line Fishery is primarily a troll fishery for Spanish mackerel (*Scomberomorus commerson*). Red snappers are not considered to be target species for the fishery. There are 46 licences in the fishery; 16 were active in 2019. Total catch in 2019 was 157 t, with an effort level of 809 vessel-days. Spanish mackerel accounted for 99% of the catch in 2019. The fishery has been granted export approval until 22 November 2022.

**Other catches, including illegal fishing**

Queensland and the Northern Territory collect catch data for target species taken by recreational fishers and charter vessels. The Northern Prawn Fishery also takes some red snappers as byproduct.

Fishing for red snappers occurs in Indonesia’s waters, particularly trawling in the Arafura Sea (Blaber et al. 2005). Saddletail snapper is the dominant species caught in this area. An Australian–Indonesian project in 1999–2000, supported by the Australian Centre for International Agricultural Research (ACIAR), examined the relationship between Australian and Indonesian stocks. The project found that catch levels of red snappers at that time would be unsustainable in the longer term, and that data collection and licensing systems in Indonesia were inadequate. The project provided a catalyst for changes to management arrangements in Australia and Indonesia.
Quantities of red snappers have been documented on Indonesian vessels that have been apprehended fishing illegally in northern Australian waters (McKey 2008). Illegal fishing has decreased, but the extent of catch and the impact on Australian stocks have not been fully quantified. A more recent ACIAR-supported project used data and modelling outcomes from the northern Australian harvest strategy for tropical snappers (O’Neill et al. 2011) to develop new fisheries policy and management frameworks, fishery-specific stock assessment processes, and improved frameworks for managing red snapper stocks in Indonesia that include the control and management of illegal, unreported and unregulated fishing. The outcomes of this project are reported in West et al. (2013).

**Status of stocks**

In 2019, the commercial catch of goldband snappers in the Northern Territory was 427 t; 45 t was caught in Queensland. Although there is no total allowable commercial catch (TACC) for goldband snappers in Queensland because of relatively low catches, the Northern Territory has a TACC of 1,300 t (900 t in the Timor Reef Fishery and 400 t in the Demersal Fishery).

The northern Australian goldband snapper stock was assessed with data up to 2016 using a stochastic stock reduction analysis model (Northern Territory Government 2019). Egg production was estimated to be between 60% and 70% of production before the start of the fishery, and the current harvest rate was estimated to be below that required to achieve MSY (Saunders et al. 2018b). The goldband snapper stocks in the Timor Sea may be shared by Indonesia and Australia (Ovenden et al. 2002); however, understanding of the Indonesian catch and its implications for stock assessment is limited.

In 2019, the commercial catch of red snappers was 2,732 t (2,055 t of saddletail snapper and 677 t of crimson snapper) in the Northern Territory and 69 t (58 t of saddletail snapper and 11 t of crimson snapper) in Queensland. In the Northern Territory, crimson and saddletail snappers are managed together as ‘red snappers’ (Saunders et al. 2018c) with a combined TACC of 3,800 t.

The northern Australian saddletail snapper stock was assessed in 2016 using a stochastic stock reduction analysis model (Northern Territory Government 2019). Egg production was estimated to be around 60% of production before the start of the fishery, and the current harvest rate for red snappers was estimated to be below that required to achieve MSY (Saunders et al. 2018c).
29.3 References


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