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8.2 Commercial Fisheries

South Africa has rich fishery resources with authorization to harvest commercially being given to a number of operators. There are several, widely-differing types of commercial fishery in KZN, comprising oyster gathering, estuarine bait collecting, beach seine-netting, linefishing, industrial trawling and pelagic long-lining. None of these activities are very extensive in scale, but they are of provincial significance as they provide employment as well as economic benefits to those who participate in them, while providing members of the public and the local hospitality industry with seafood.

Oyster gathering

This fishery is confined to the intertidal zone, with shore-based divers and collectors prying Cape rock oysters from rocks with crowbars during spring low tides.¹ Traditionally, women were the main participants, working in water reaching not higher than their chests and locating oysters by feel or sight. About ten years ago the use of masks and snorkels was permitted, and men now dominate the fishery, working in slightly deeper water (1.5 m). Harvesting areas extend from the Thukela River to the Umgeni River on the KZN North

Work aboard a prawn trawler.



Photo: Sean Fennessy

Coast, and from the Isipingo River to the Mzimkhulu River on the South Coast. The bulk of the stock is located on the north coast; in 2010/11 licensed harvesters collected approximately 1.5 tons from north coast sites.

Harvesting areas are each divided into four zones, with harvesting allowed in only one zone per site per year. There are thus three fallow years between subsequent harvests, which is the period required for new recruits to attain the minimum marketable size. Rotational harvesting as a management method is unique to oyster harvesting in KZN, and has been implemented since the early years of the fishery, ensuring its sustainability, in spite of several changes in the number of zones, fallow years and the time of zone rotation.^{2,3} The oysters are all sold locally, while farmed oysters are also imported to meet local demand.

Estuarine bait collecting

In years gone past, commercial permits were issued for the collection of prawns and/or bait fish such as mullet, either by using shove nets or small beam trawls. As estuaries have increasingly become degraded, these activities have gradually ceased, and currently there is only one remaining estuarine bait collection permit in KZN.

Beach seine-netting

This fishery comprises small surf-launched boats, which deploy seine nets in the surf zone or just behind the backline. The nets are then retrieved and hauled onto the beach. All except one permit allows for the use of motorized boats, and all operate between Durban and Port Edward. The majority of permits (currently 25) are issued exclusively for the seining of sardines during the sardine run (*Section 5.2*). Annual catches by the KZN sardine netters are relatively small in relation to the south and west coast industrial purse-seine catches, but in some years have been in the region of 500-700 tons, which exceeded both the KZN commercial linefish and trawl catches.⁴

There is also one general beach-seine permit, which entitles the permit holder to catch sardines as well as other shoaling fish species. This permit is restricted to the Durban beachfront and mainly targets bait species such as squid and small pelagic fish.⁵ The permit-holder uses a rowing boat to deploy the net, and this represents the last survivor of the fleet of

traditional beach seine-netters which used to operate in Durban in the early 1900s, an activity which was introduced to Durban by indentured Indian immigrants (*Section 7.1*).

Industrial trawling

The trawl fishery in KZN targets crustaceans and has two facets, namely the shelf-edge fishery, conducted about 10-20 nautical miles offshore between Durban and the Thukela River in deep water (200-500 m); and the shallow water (< 50 m) prawn fishery for penaeid prawns on the Thukela Bank between Zinkwazi and Mtunzini.⁶ The shallow water fishery targets mainly white prawns and brown prawns, while several crustacean species are targeted in the deep water fishery, namely pink or knife prawns, langoustines, red crabs and deep water spiny lobsters.

The fishery started in the 1970s and at its height in the mid-1980s there were some 15 trawlers based in Durban. However, this was artificially inflated through vessels that had been banned from Mozambican waters basing themselves in KZN.

Currently there are seven permits issued, although not all are used regularly, despite the fact that local demand exceeds what the local fleet can supply. In the 1980s, total landed catch of crustaceans was around 500 tons per annum, but is currently around 200 tons, almost all from the deep water industry.

In South Africa and elsewhere, imports of farmed prawns from Asia have resulted in a substantial drop in the market price, and together with increased fuel prices, have affected the viability of both the local shallow water and deep water operations. Additionally, the St Lucia estuary, which is a major source of prawn recruits to the Thukela Bank, has been closed for several years (since 2002), so catches in the shallow water fishery are poor.

The prawns are caught using large steel trawler vessels ranging from 25-35 m in length. The trawl net is deployed from the stern using nets with mouth widths from 25-60 m across. The catches are size-sorted, graded, packed and blast frozen on-board, while at sea.

The deep water fishery operates throughout the year, while the Thukela Bank fishery is closed for six months in order to minimize catches of other species when prawn catches are low. Trawling is quite indiscriminate, and anything that is not



fast enough to avoid the net is caught, resulting in large quantities of bycatch, most of which has low value, and is discarded, dead, back into the sea.^{7;8;9} As a rough guideline, approximately 3-6 kg of bycatch is caught for every kg of commercially valuable crustaceans.

Commercial linefishery

The offshore linefish resources of KZN have been exploited for at least the past 100 years.^{10;11} At first these resources were only accessed through a limited number of large lineboats (14-20 m in length) that operated out of Durban Harbour.¹² However, with the development of the ski-boat after 1945,¹¹ offshore fishing effort expanded along the KZN coast. Although the distance range of ski-boats was minimal (<25 nautical miles) compared to lineboats, the number of ski-boats operating off KZN increased rapidly. Ski-boats are compact, trailer-able, beach-launched vessels 4-8 m long, powered by twin outboard engines and are more affordable, fuel efficient and cheaper to run than large harbour-based vessels.¹¹ One of the key advances brought about by ski-boats was the fact that linefishers could now launch from just about any reasonably protected beach (including river mouths) and access many productive fishing grounds that had previously not been exploited.¹³

It was only in 1984 that the commercial linefishery was formally split from the recreational ski-boat fishery (*Section 7.4*) and managed separately.^{11;14;15} The main distinction was that commercial fishermen were legally allowed to sell their catch while recreational fishers were not.

Commercial fishers were historically limited in terms of effort (i.e. number of vessels and crew) and had to apply for a commercial fishing licence annually. Initially a two-tiered approach was used whereby commercial operators were split into full-time operators (called A-licences) and part-time operators (called B-licences). Linefish species were grouped into categories (i.e. critical, restricted, exploitable, recreational and bait species) based on their assumed vulnerability.¹⁶

Generally, commercial fishers had unlimited access in terms of catch but were limited in terms of effort, recreational ski-boat anglers were unlimited in terms of effort (open access) and limited in terms of catch by means of daily bag limits, while minimum sizes and closed seasons applied to both fishery sectors.

Assessment of the status of linefish populations off the KZN coast during the 1990s revealed that many of the species targeted by the commercial linefishery were overexploited and could not sustain the fishing pressure.^{11;15;17} A similar situation existed in the Cape¹⁸ which resulted in the Minister declaring an emergency in the linefishing industry in December 2000. Under the emergency, a radical decrease in commercial fishing effort (~70%) was recommended to enable the rebuilding of overexploited fish stocks. This was implemented through the allocation of firstly medium-term (2003) and then long-term rights (2006). Under the *Traditional Linefish Policy* (June 2005) fishing effort was regionalised and total allowable effort (TAE) was set at 52 rights for KZN. This was a 70% reduction of the approximately 173 commercial fishing licences that existed in the province prior to the rights allocation process.¹⁹ Long-term commercial rights were issued for a period of eight years (2006-2013) and species-specific linefish regulations were substantially revised in April 2005 (*Government Gazette No. 27453*).

Based on a recent survey of the KZN skiboat fishery,¹³ there were a total of 38 commercial vessels that activated their rights in 2009. These vessels undertook a total of 3 331 launches with a total annual catch of approximately 785 tons. Catch composition was comprised primarily by seabreams, rockcods and kob, with slinger comprising 53% of the total catch by weight.¹³ Commercial ski-boats launch from a number of sites along the KZN coast with Richards Bay, Shelly Beach, Rocky Bay, Port Edward and uMvoti being favoured.

Pelagic longline fishery off KZN

Pelagic longlining is an industrial fishery which requires vessels large enough to remain at sea for a few weeks at a time with sufficient freezing facilities on-board. The fishing process itself involves the setting of a buoyed main line in the water to which shorter branch lines with baited hooks are attached. The main line may be many kilometres in length (sometimes up to 120 km for large 400 ton vessels) and there may be thousands of baited hooks attached to the main line (roughly 25 hooks set per km depending on conditions and target species). In KZN pelagic longlining is only allowed beyond 20 nautical miles offshore (37 km), and the most productive waters are often beyond the Agulhas Current with vessels sometimes travelling beyond South Africa's Exclusive Economic Zone (200 nautical miles offshore) to find fish in the Mozambique Channel.

Photo: Sean Fennessy



Seine-netters hard at work.

Pelagic longlining is a technologically advanced method of fishing with skippers requiring remote sensing of sea surface temperatures, currents and other oceanographic data to find the fish. The main targeted species in KZN waters are swordfish, yellowfin tuna and bigeye tuna, and minimal catches of albacore and southern bluefin tuna. There is also substantial bycatch of blue and mako sharks retained for their fins and fillets for overseas markets. Mitigating the bycatch of seabirds and turtles is an on-going battle and some successful measures have been established thus far. Around 80% of the catch is exported to the United States, Europe and Asia for use as sushi, canning or fillets.

Prior to 1994, South Africa did not have its own pelagic longline fishery but instead issued permits to foreign countries (mainly Japan and Taiwan) as part of *Bilateral Trade Agreements*. After 1994 South Africa decided to develop its own pelagic longline fleet and foreign permits were gradually phased out.

In 1997, 30 experimental longline permits were issued to target tuna. These permits included using foreign flagged vessels which were “chartered” to help develop the necessary expertise in South Africa. At the end of 2005, 50 long-term rights were made available of which 17 were allocated to swordfish directed vessels and 26 to tuna-directed vessels. Fewer rights were issued for swordfish-directed vessels with the aim of reducing the amount of targeting on the overfished subpopulation of swordfish in the South West Indian Ocean. In 2005 the total catch landed by these vessels was greater than 3 500 tons with bigeye and yellowfin making up more than half of the catch. The catch has fluctuated annually and the fleet continues to include at least 10-15

Photo: Bruce Mann



Longliner fishing vessel.

foreign flagged vessels every year. Catches made by all permitted vessels must be landed in South African ports and in KZN this includes both Richards Bay and Durban.

Tuna and swordfish are oceanic migrants and their stocks are fished by a number of nations. Consequently management of these fish stocks in the Indian Ocean is the responsibility of *Regional Fishery Management Organizations (RFMOs)* such as the *Indian Ocean Tuna Commission (IOTC)*. These RFMOs are responsible for conducting stock assessments, devising control measures and issuing country allocations.

While commercial fishery activities have decreased over the years, they still contribute significantly to the coastal economy of the KZN province. However, their long term sustainability can only be assured through careful management of the fisheries themselves. ■

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