

South African Institute for Aquatic Biodiversity

COASTAL FISHERY RESOURCES

an easy guide

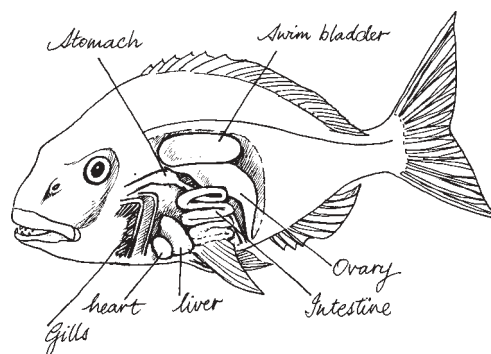
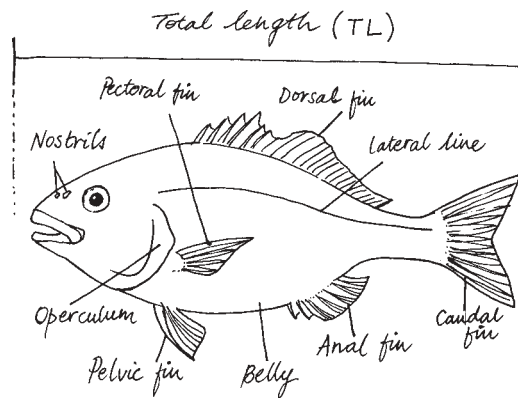
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INTRODUCTION

Democracy in South Africa has led to many positive changes, one of these being that marine and coastal resources have become more accessible over the last ten years, and the subsistence fishery is now a recognized sector. This accessibility has brought new challenges with respect to management and sustainable utilization of these resources. This booklet serves to provide some biological and ecological background to the commonly caught or harvested species along the Eastern Cape coast.

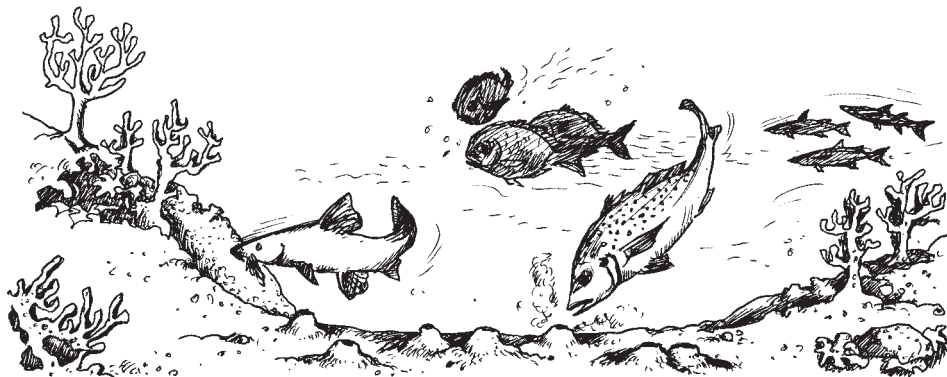


Fishing and collecting permits are required by law. These permits and further information on size limits, daily limits (how many per day) and bag limits (how many per person) are available at Post Offices and local Nature Conservation authorities (such as Marine and Coastal Management).



ESTUARIES

An estuary is formed where a river meets the sea. Some estuaries are permanently open to the sea, while others seldom open. The salinity (saltiness) of estuaries can vary greatly and depends on the mixing of the sea with freshwater from the river. Estuaries are constantly changing and are influenced by the tide, waves and rainfall. The big changes in temperature, salinity and oxygen concentration make estuaries a very harsh environment to live in. Despite this, many types of plants and animals have adapted to live in estuaries. Plants such as algae, eelgrass, saltmarsh plants, mangroves and reeds thrive in this environment. Estuaries are important nursery areas for many fish and almost 100 species of fish are partially or completely dependent on estuaries at some stage of their lives. Common estuarine fish species include the spotted grunter, dusky kob, Cape stumpnose and several species of mullet. Many birds depend on estuaries for food. These include fish-eaters such as the fish eagle, herons and cormorants, invertebrate-eaters such as flamingos and weed-eaters such as red-knobbed coots. Estuarine environments are threatened by the construction of dams, agriculture, property development and pollution.

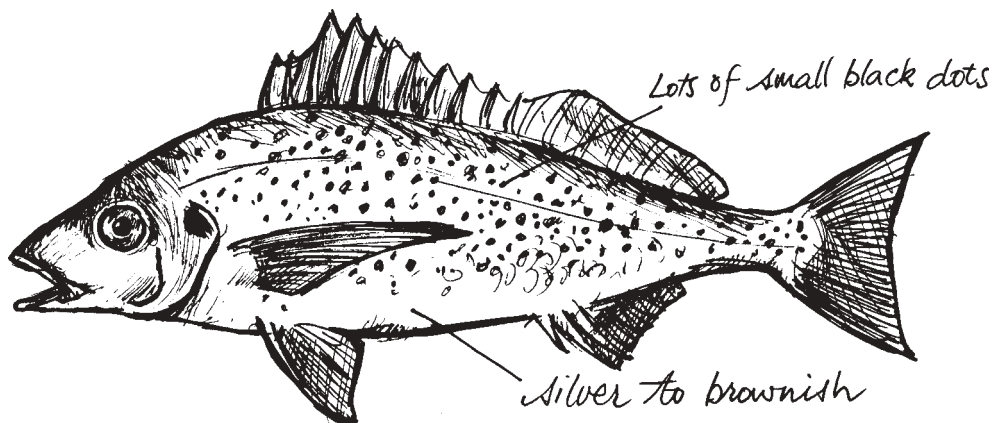




ESTUARIES

Spotted grunter, *Pomadasys commersonii*

The name “grunter” is due to the fact that when the fish is removed from the water it makes a grunting noise. Other common names include tiger, spotty, gespikkelde knorder and knorhaan. It is silver or brownish with lots of small black spots on the upper part of the body.



Spotted grunter commonly occur in estuaries and shallow coastal waters from False Bay up the east coast of South Africa, extending to Mozambique and beyond. Spotted grunter spawn in the sea near estuary mouths. Small juveniles (5cm) enter estuaries where they remain for at least the first two years of their life. When they become sexually mature (40cm) they spend more time at sea. Adult spotted grunter often enter estuaries in large shoals, an event commonly referred to as the 'grunter run'. Outside of the spawning migration, which is not fully understood, adults appear to be fairly resident in estuary mouths. Spotted grunter reach a maximum size of about 85cm, a maximum weight of 9kg and live to 15 years.

Spotted grunter eat mostly sandprawns and mud prawns. They are often seen blowing these small creatures from holes on shallow mud or sandbanks.

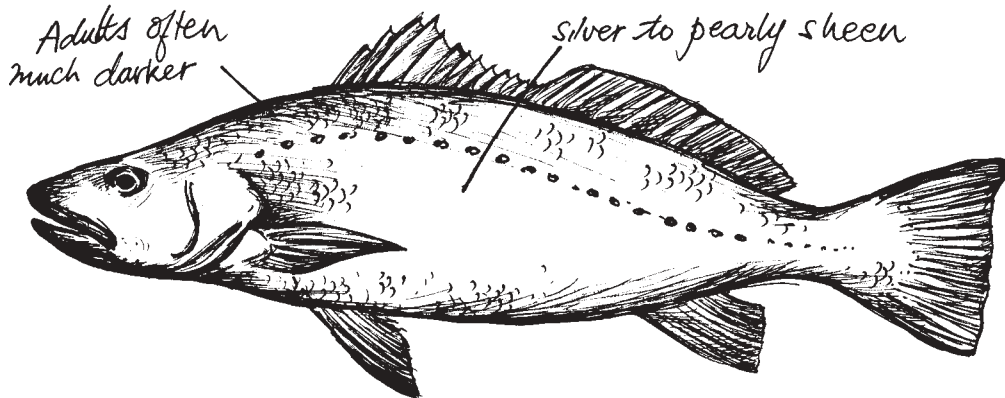




ESTUARIES

Dusky kob, *Argyrosomus japonicus*

Dusky kob are also known as kabeljou, salmon or daga salmon. It is the largest of the kob species found in South African waters and grows to a length of 1.8m, a weight of 75kg and an age of 42 years. It is often confused with the silver kob (*Argyrosomus inodorus*) which occurs in cooler water (e.g. Namibia) and deeper waters off the Western and Eastern Cape coasts.



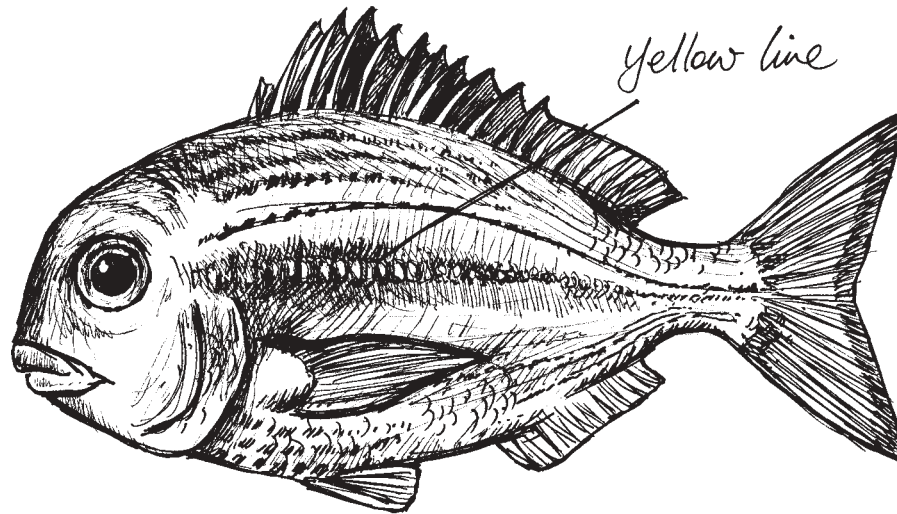
The dusky kob is a highly sought-after coastal and estuarine fishery species from Cape Point to southern Mozambique. Dusky kob are carnivorous predators that feed mostly on shrimps and prawns as juveniles and on a variety of fish, squid and octopus as larger individuals. This fast growing species is sexually mature at a length of about 1m (5-6 years old). Spawning occurs at sea, on shallow inshore reef areas at night. When juveniles are about 3cm they migrate into turbid (muddy) estuarine waters to find food and shelter. They remain in their estuarine nursery areas for the first year of their lives, after which they spend more time at sea. Adults occur mostly at sea, but are also found in estuaries and in the surf-zone, particularly sandy beaches. The dusky kob is a shoaling species and groups of individuals may shoal together for several years. Each year much of the Cape adult population follows the 'sardine run' and migrates to KwaZulu-Natal to spawn.



ESTUARIES

Cape stumpnose, *Rhabdosargus holubi*

Cape stumpnose are also known as flatty, silvie, blinkvis, Kaapse stompneus and mbande. The Cape stumpnose is one of several stumpnose species found in South African waters. The scientific name *Rhabdosargus* means striped bream. Cape stumpnose are silvery in colour with a single yellow/gold band which runs along the middle of each side of its body. They are endemic to southern Africa, found from St Helena Bay to Maputo. Adults occur mostly inshore over sandy areas and shallow reefs down to 50m.



Cape stumpnose spawn throughout the year in the nearshore zone and larvae enter estuaries at a size of approximately 1.5cm, where they remain until reaching sexual maturity at about 19cm (2 years old). They grow to roughly 40cm (1.5kg). Little is known about adults in the marine environment, including their movements and migrations.

Juveniles graze on algae and seagrass while the adults feed on snails, shrimps, crabs, barnacles and worms.

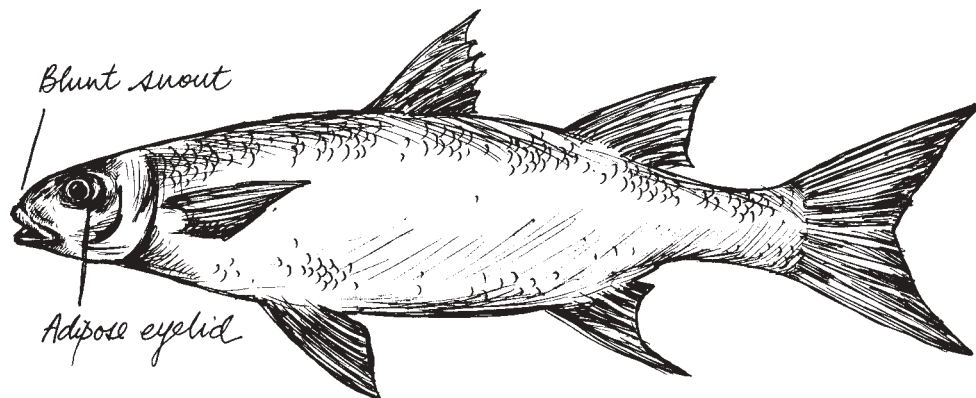




ESTUARIES

Flathead mullett, *Mugil cephalus*

Flathead mullet are renowned for being able to leap high into the air, hence are also known as 'springer' mullet. The flathead mullet is one of several mullet species occurring in South African waters. Mullet typically have a cylindrical front end (including the head), but are more slender towards the tail and have a distinctive forked tail. They are mostly olive green in colour above, with silvery sides and a white belly. Several mullet species have a yellow golden spot on the gill cover but it is not a distinguishing feature. The flathead mullet, as the name implies, has a broad flat head and large eyes with fatty "see-through" eyelids. They have about seven thin dark stripes along the body and their fins are dusky, sometimes with pale blue edges. A dark blue spot can also be seen at the base of the pectoral fins, but often disappears when out of the water.

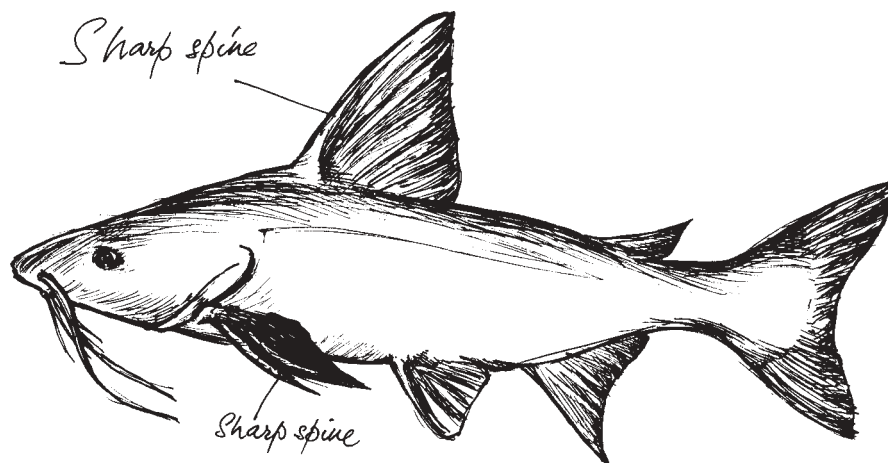


Flathead mullet occur world-wide and are found all round the coast of southern Africa. Juveniles and adults are abundant in large schools in estuaries, often found high up in the freshwater reaches. Spawning occurs at sea and early juveniles (approximately 5cm) move into and remain in estuaries for the first year of their life. They feed on very small organisms (plant and animal matter) living on the mud banks. Flathead mullet mature at about 40 to 45cm (about 3 years old). At St Lucia (KwaZulu-Natal) there is an annual migration ('mullet run') of large schools that leave the estuary and lake to spawn at sea.

 ESTUARIES

White sea-barbel, *Galeichthys feliceps*

The white sea-barbel (or white sea-catfish) is generally brown to greyish, or greenish brown above and lighter in colour to whitish on the sides and below. The body has no scales and is covered by thick mucus. The dorsal and pectoral fins have hard, serrated spines that can inflict a painful wound. The white sea-barbel is endemic to southern Africa and occurs from Namibia to KwaZulu-Natal. Although not sought-after, this fish is commonly caught by anglers in estuaries and the sea. They prefer muddy and sandy areas and reef fringes down to 60 m. The white sea-barbel attains a maximum size of about 45cm, a weight of 3.8kg and lives to 18 years. They are sexually mature at about 33cm (9 – 10 years old).



Little is known of the spawning behaviour, but the males carry (incubate) the pea-sized eggs and hatched young (embryos) in their mouth for up to 4 months, during which time the males do not eat (eggs hatch after 75 to 80 days). For some time after being released in estuaries, the juveniles may return to the male's mouth for protection from predators. Adults are poor swimmers and it is not likely that they make any long migrations.

White sea-barbels feed on crabs, shrimps, prawns and worms and they scavenge on dead fish.

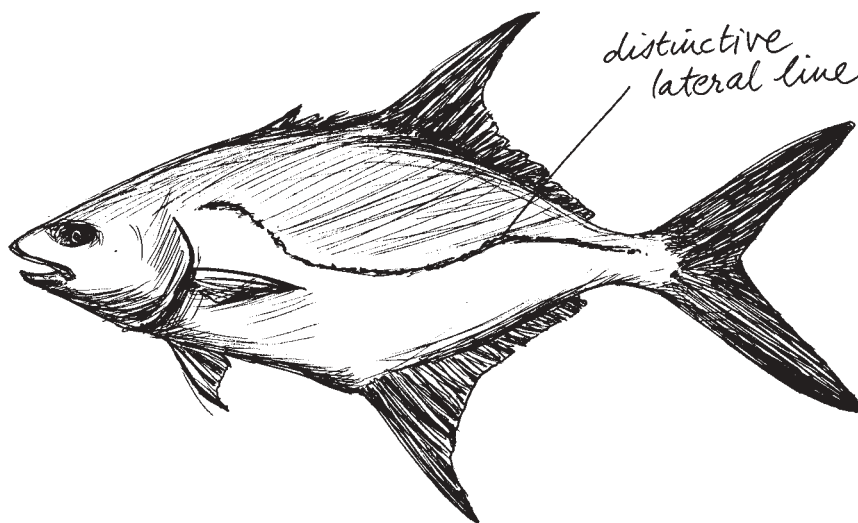




ESTUARIES

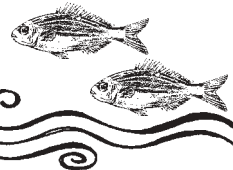
Leervis, *Lichia amia*

This prized angling and spearfishing species is known as leervis in Cape waters and as garrick in KwaZulu-Natal and along the Transkei Wild Coast. Leervis have a compressed elongated body and a large mouth. The head and body are blue-grey to greenish above and silvery white below, while the fins are dark. Leervis occur from the Mediterranean Sea, along the west African coast, right round South Africa to Maputo. Adults are found near shore in clear surface waters, from the surf zone to 50m. Juveniles are dependent on estuaries as nursery areas.



Small juveniles (10-15cm) feed on shrimps and fish, and are able to swallow prey 70% of their own length. Larger juveniles (up to 30cm) feed mainly on estuarine fish such as mullet. Leervis are mature at about 85cm (about 3-4 years old) and grow to about 190cm and an age of about 10 years. Leervis migrate up the east coast of South Africa with the annual 'sardine run' during winter months. Most leervis spawn along the KwaZulu-Natal coast from September to November, after which they migrate back to Cape waters.

Adult leervis are swift predators that hunt in packs and feed on fish such as elf, piggies and strepies.

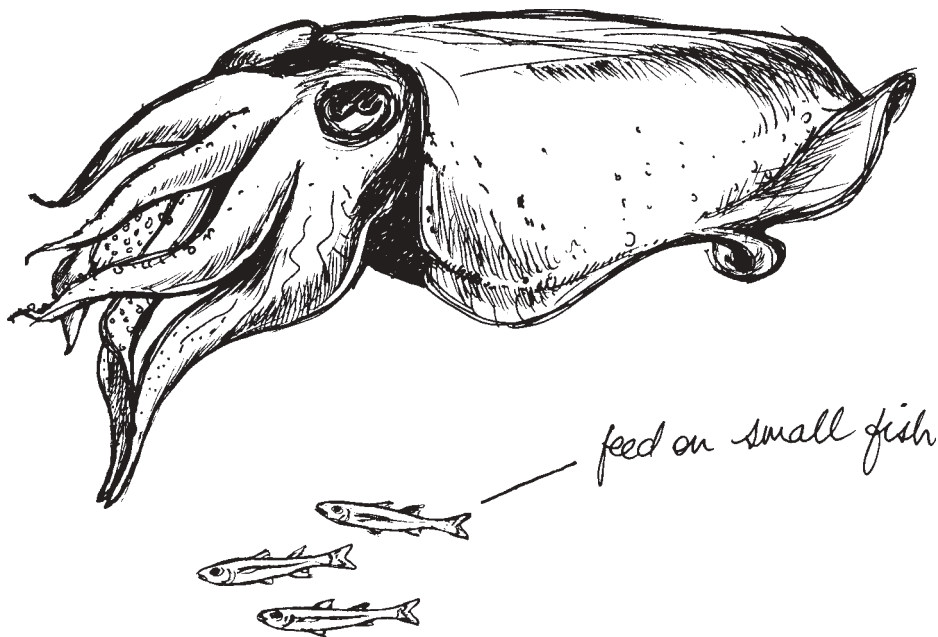




ESTUARIES

Common cuttlefish, *Sepia vermiculata*

Cuttlefish, also known as ink-fish, are common in permanently open estuaries and sheltered lagoons (often seen in very shallow water at night). They are found along the whole South African coastline from north Western Cape into Mozambique. Cuttlefish are fast-moving animals: an advantage in terms of catching their food (such as small fish) and for escaping predators (such as dusky kob). They also have an ink gland, squirting out a black cloud to confuse the predator while they escape.



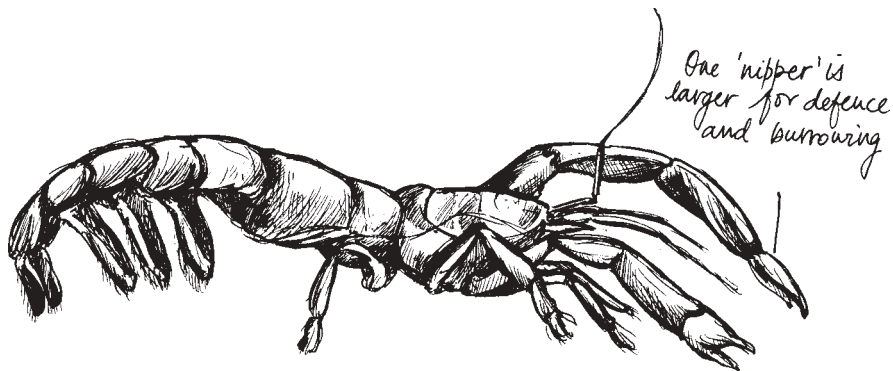
Cuttlefish can change colour very quickly, and even change to match the background. They grow to about 15cm. They lay small bunches of pea-sized black eggs which are attached to algae. The demand for cuttlefish is fairly low; it is used as bait or food by recreational fishers.



ESTUARIES

Common sand prawn, *Callinassa kraussii*

Common sandprawn are also known as cracker shrimp or sand garnaal. They are abundant on the sand flats and sand banks of closed estuaries and sheltered marine environments where they may dig burrows to at least 1m deep. Sand prawns are pink, fragile and "see-through" and they have one nipper which is much bigger than the other, used for defence and for burrowing. They are detritivores, sifting the sediments eating detritus (particles of decomposing plants and animals). Sandprawn are found along the entire South African Coast. There is high pressure on these animals for bait, and in some areas subsistence harvesters sell their catch to tourists. Sandprawn grow to about 6cm TL (they are sexually mature at this size) and live for about 2 years. They breed between May and August and between November and January. Females carry the eggs on the underside of the abdomen.



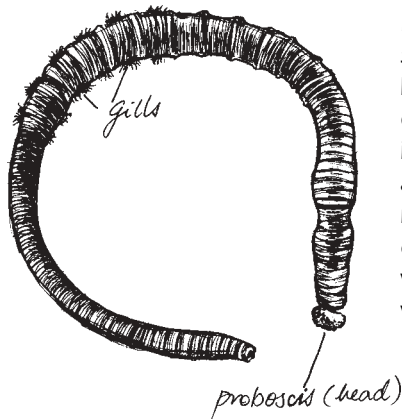
Juveniles burrow tiny side tubes from the parent burrow, and after 2-3 months burrow their own opening to the surface.



ESTUARIES

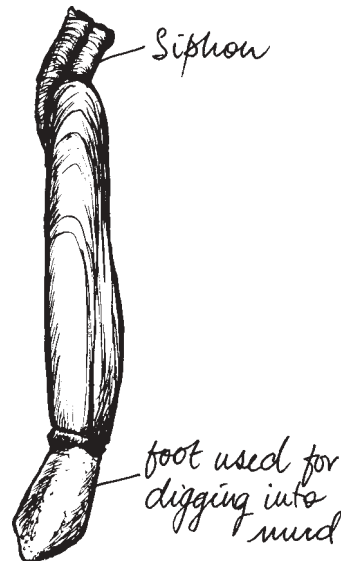
Blood worm, *Arenicola loveni*

Also known as bloodworm, the bloodworm is endemic to South Africa, occurring from Saldanha Bay to northern KwaZulu-Natal. Bloodworm are dark brown with tufts of pale bristles and branched red gills in the centre of the body. They are found in the sandy areas of permanently open estuaries and on sheltered beaches. Bloodworm have U-shaped burrows in the sand which can be up to 1m deep. The blood worm is a detritivore, eating particles of decomposing plant and animal material in the sand. Blood worm grow up to 80cm and reach an average age of 3-4 years but may live up to 7 years. There is a very high demand by recreational fishers on blood worm as bait. Subsistence fishers may collect worms to sell to recreational fishers.



Pencil bait, *Solen capensis* and *Solen cylindricus*

Pencil bait, also known as razor clam, has a very elongate, almost cylinder shape. There are two species of pencil bait: the larger, *Solen capensis* (about 16 cm), is found in the sandy lower reaches of the estuary (near the mouth) and occurs from the Olifants River on the Western Cape coast to southern Transkei on the Eastern Cape coast. The smaller species, *Solen cylindricus* (about 10cm), is found in the intertidal and subtidal muddy-sand areas (away from the estuary mouth) and occurs from Port Elizabeth up the east coast to central Mozambique. Pencil bait is a filter feeder, feeding from its burrow, which has a keyhole-shaped entrance. There is a very high demand on pencil bait which is used mainly as bait but is also eaten by subsistence fishers in some areas.

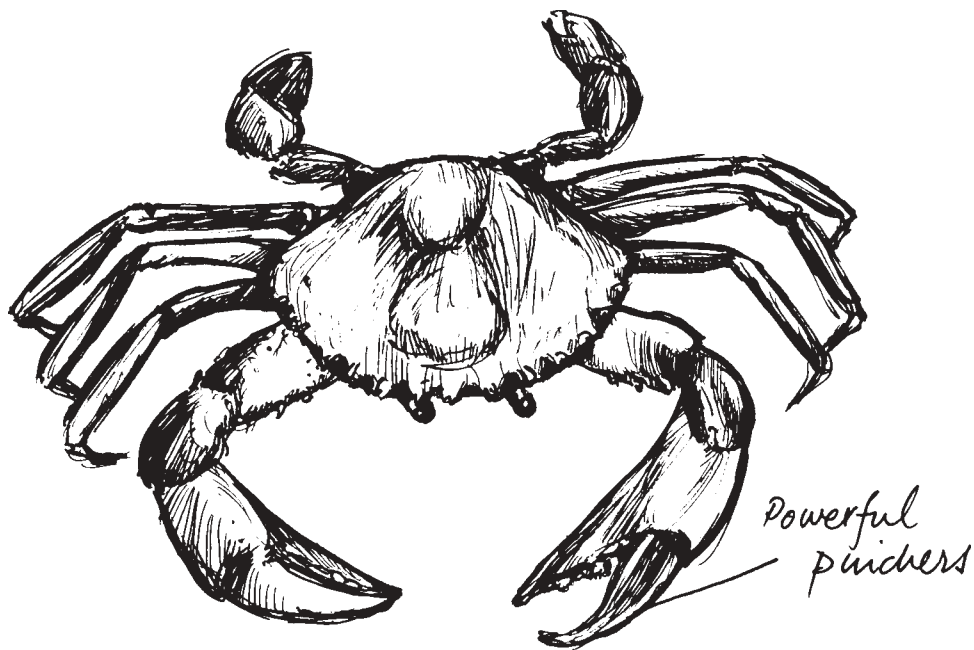




ESTUARIES

Giant mud crab, *Scylla serrata*

Also known as Knysna crab, modder krap, unonkala (Xhosa) and inkalankala (Zulu), the mud crab is one of the largest crabs in South Africa and occurs both in the intertidal and subtidal areas of estuaries from Knysna up the east coast of Africa into the Indo-Pacific. Although found over muddy bottoms and often associated with mangroves, it is one of the swimming crabs. Mud-crabs are green-brown in colour. Large adults grow up to 40cm across and their powerful pincers can become the size of a man's fist! Although formidable predators, they eat mainly tiny molluscs but also scavenge on dead fish. The mud crab is a popular food item caught by recreational harvesters. Mud crabs migrate to the sea to breed. The eggs are brooded under the abdomen of the female and hatch into larvae that float in the sea.

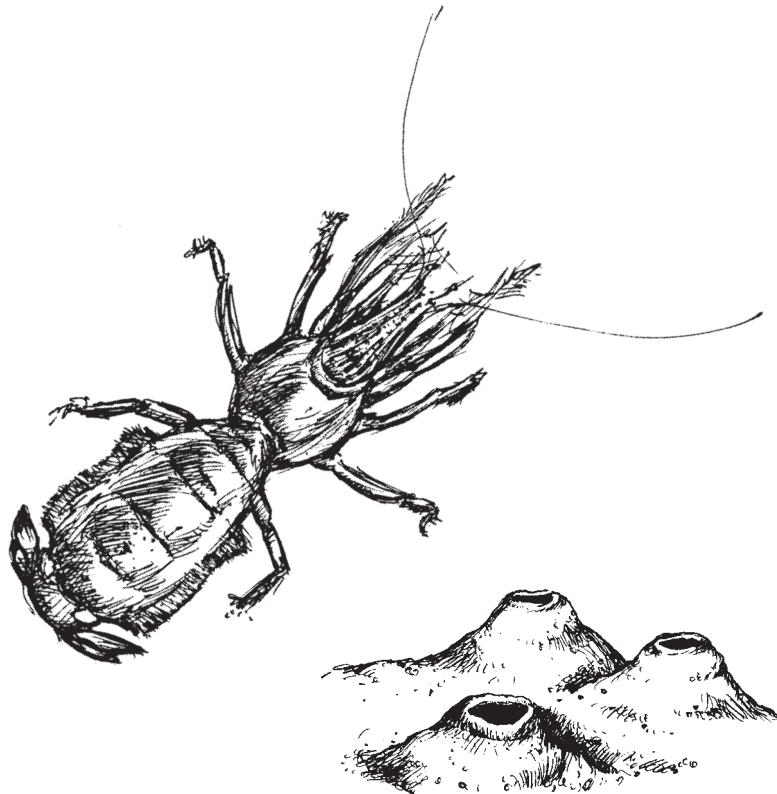




ESTUARIES

Estuarine mud prawn, *Upogebia Africana*

Mud prawn are green-brown and robust; they are abundant in estuaries around the low tide level where burrow openings are easily visible. They live in U-shaped burrows on the mud flats of sheltered bays and permanently open estuaries and are found from Lambert's Bay to Maputo. They are filter feeders, feeding from their burrows. There is high pressure on these animals for use as bait, and in some areas bait collectors rely on selling bait as their only source of income. Mud prawn live for up to 4 years. They breed between July and October and between December and March. Eggs are carried (incubated) by the female on the underside of the abdomen until they hatch and the young are released into the sea after which the juveniles return to estuaries.





ROCKY SHORES

Rocky shores range from headlands with sheer cliffs, to wave cut-platforms or boulder beaches. Many plants and animals live totally submerged in pools and gullies, while those found on open rocks are exposed to heat and loss of water when the tide falls. Some plants and animals are better adapted to these stresses than others. These generally live near the high tide mark where they are exposed to the heat of the day for long periods of time. The area between the high tide mark and the low tide mark (intertidal zone) can be zoned according to the types of animals and plants that occur here. The highest zone is most barren and inhabited by a few species of hardy animals (eg. snails) and hardy algae (seaweeds). The upper semi-dry zone hosts barnacles, limpets, periwinkles and several algae species. The lower zone is much richer in animal and plant life and is dominated by colourful sponges, green algae, coral-like seaweeds and mussels. The lowest zone (below the low tide mark) is the richest and inhabited by animals such as red bait, anemones, sea urchins, starfish and many fish species such as blacktail, zebra and strepie. Many plants also live here and include colourful branched seaweeds and kelp. Rocky shores are threatened by pollution, development and over-exploitation of fishery resources.

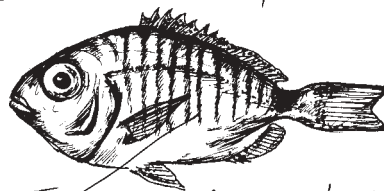
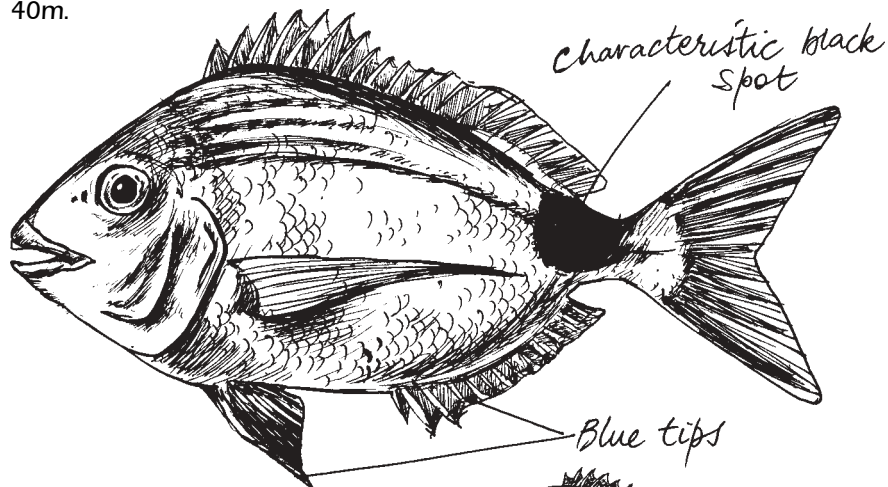




ROCKY SHORES

Blacktail, *Diplodus capensis*

Big or small, blacktail are easily identified by a large black spot at the base of the tail. Other common names include dassie, kolstert and ntimla. The scientific name *Diplodus*, meaning "double-toothed", refers to its distinctive dentition (teeth). The blacktail is a very common inshore coastal species and a very popular angling fish along the entire South African coastline. This species occurs over rocky and sandy areas from shore to a depth of 40m.



Juveniles have faint grey bars

Blacktail are omnivorous and feed on a range of organisms including algae, sponges, worms, mussels and crabs.



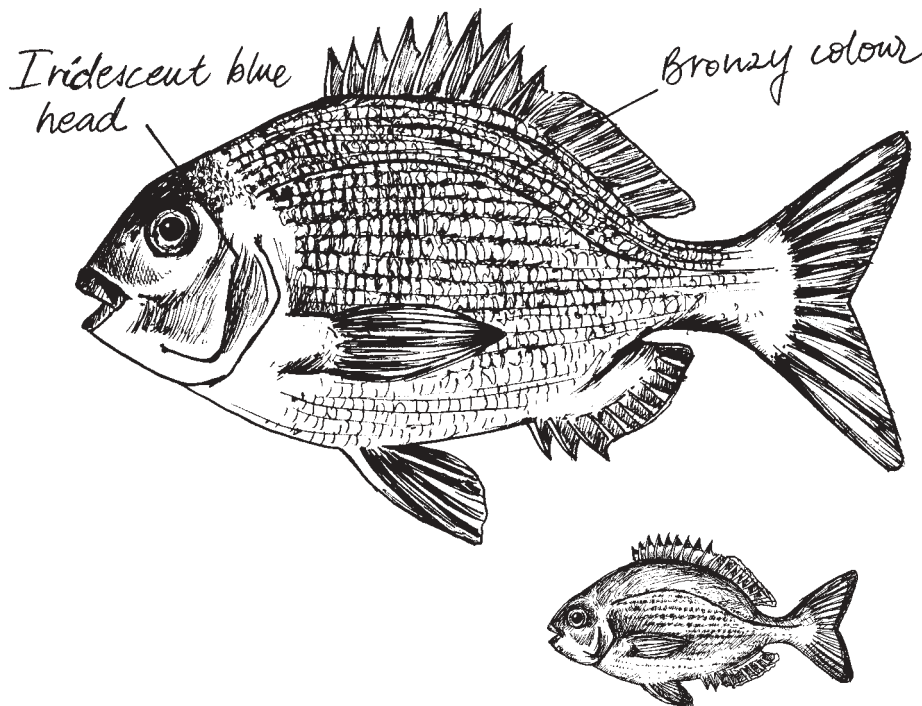
Juvenile fish use intertidal rock pools and gullies as nursery areas. Blacktail reach a maximum size of 45cm (about 3 kg) and live to 25 years. They reach sexual maturity at about 25cm (3 - 4 years) and spawning takes place during spring and summer. They are non-migratory and remain fairly resident in areas for extended periods.



ROCKY SHORES

Bronze bream, *Pachymetopon grande*

Bronze bream are also known as hottentot, bluefish, janbruin, JB and pensen-derm at different places on our coast. This inshore reef-associated species is endemic to southern Africa (False Bay to Maputo) and Madagascar. The bronze bream is a highly prized catch by shore-anglers along the southeast coast of South Africa. Juveniles are found in subtidal gullies and on shallow inshore reefs, while adult fish occur from the rocky intertidal zone down to 25m. Bronze bream are herbivorous and eat mainly red and green algae. This slow growing species grows to 50cm in length, a maximum weight of about 5 kg and lives to 38 years. Large (old) individuals often have distinct bulges (knobs) on their heads. They reach sexual maturity at about 30cm (approximately 6 years old) and spawning takes place in small shoals for most part of the year. Adults are highly resident and tend to live in one area for many years.

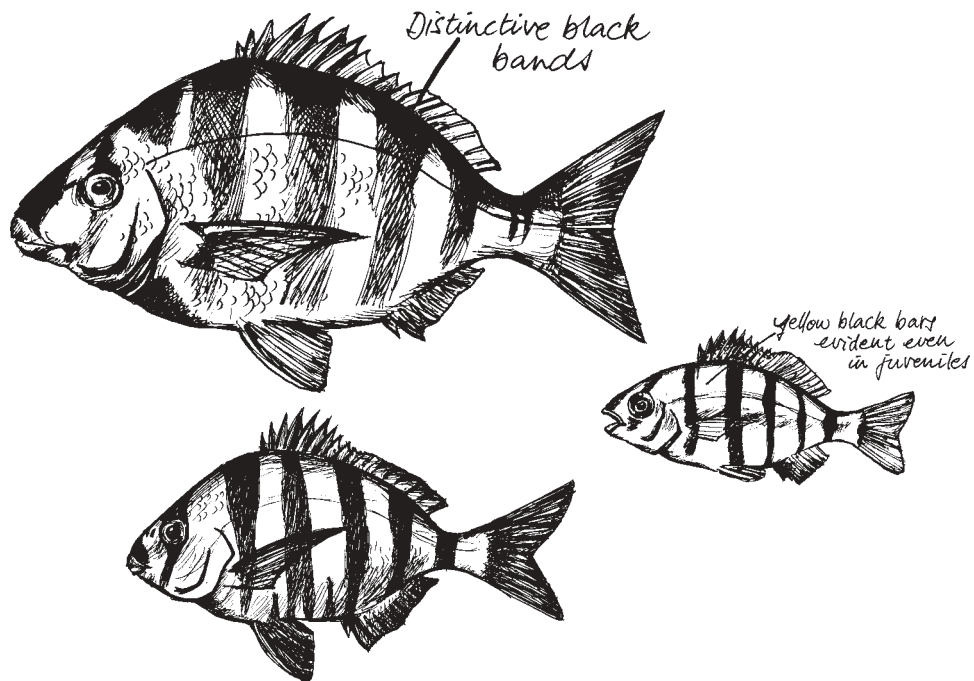




ROCKY SHORES

Zebra, *Diplodus hottentotus*

The zebra is a close relative of the blacktail, but is easily identified by several dark vertical black bars on a silvery (sometimes yellowish) body. They also have a distinctive strong body odour (smell). This colourful fish has several common names at different places along our coast, including wildeperd, bontrok, bontdassie and mbentsu. The zebra is a common inshore coastal endemic species occurring from False Bay to Kosi Bay. Zebra are associated mostly with reef areas.



Juveniles use rock-pools, gullies and occasionally estuary mouths as nursery areas, while adults are found from the intertidal zone down to 60m. Juveniles are omnivorous, while adults eat mainly worms and small crustaceans. Zebra grow to a maximum size of about 50cm, a maximum weight of 4kg and live to 33 years. They are sexually mature at about 30cm (6 years) and spawning takes place during the spring and summer. The zebra is a resident species.

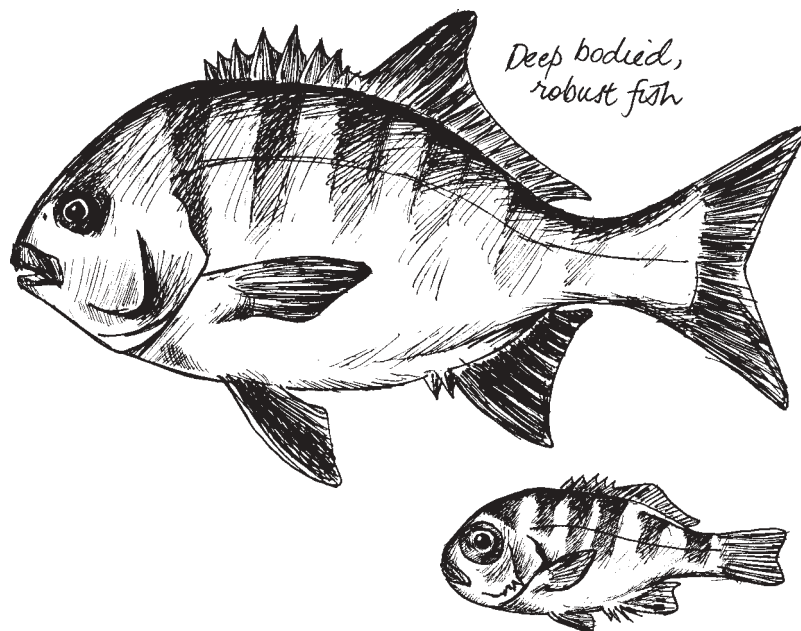


ROCKY SHORES

Galjoen, *Dichistius capensis*

The galjoen is South Africa's National Fish!

Galjoen are also known as black bream, blackfish, highwater and damba at different places on our coast. In rocky areas galjoen are usually dark grey, sometimes mottled with faint black bars, but change to a silvery colour when they move over sandy areas. Galjoen are endemic to southern Africa and occur from Namibia to Durban. They may swim in small groups or in large shoals and are highly sought-after by shore anglers, particularly in the Western Cape.



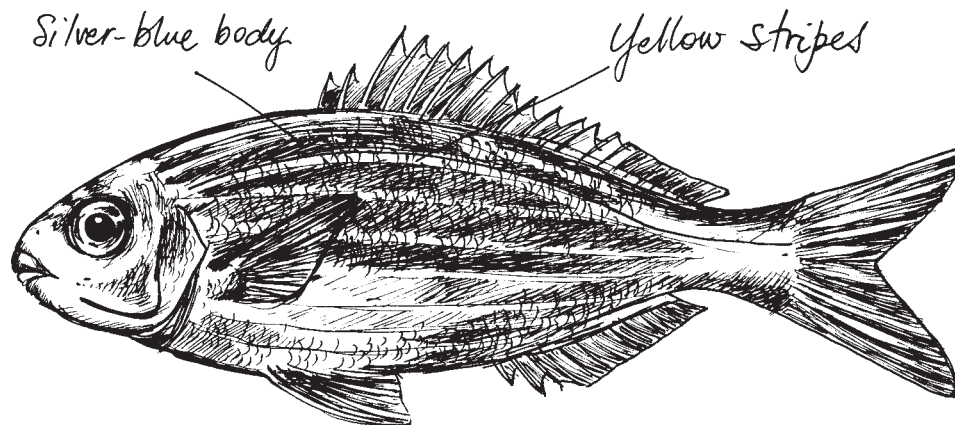
Adults and juveniles are found mostly in the shallow inshore surf zone, usually in association with rocky areas with strong wave action. They feed on mussels, barnacles, worms and small crabs. Galjoen grow to a length of 67cm, weigh up to 6.5kg and live to over 15 years. Females are sexually mature at 34cm and males at 31cm, both at an age of 6 years. Most galjoen display resident behaviour and hold home ranges no larger than 1.5km. However, some undertake long, unpredictable migrations.



ROCKY SHORES

Strepie, *Sarpa salpa*

Strepie are also known as karanteen, bamboo fish, mooi nooitjie and sasa. They are small, fairly streamlined, silvery blue fish with 8-10 golden yellow stripes (bands) running along the length of the body. They are widespread and occur in the eastern Atlantic around South Africa to southern Mozambique. Adults are found in subtidal gullies and over shallow rocky reefs in the surf zone.



Juveniles are found in tidal rock-pools, along sandy beaches, over shallow reefs and are also common in estuaries. Strepie often swim in large schools and are the favoured food of many predatory fishes like elf and leervis. They are herbivorous and graze on eelgrass and red algae. Like all herbivorous fish they have a long intestine. Strepie also change sex: after spawning as a male one year they can change sex and spawn as a female the following year. It was thought that strepie migrate to KwaZulu-Natal in the winter but increasing evidence suggests that they are more resident.

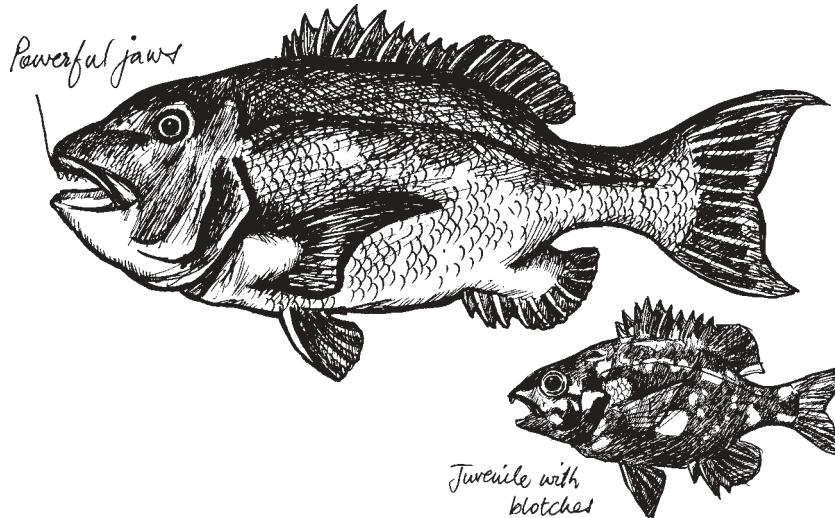
Strepie grow to a maximum size of about 30cm (1.3kg) and live 8 years. They mature at a length of 16 - 18cm (approx. 2 years old).



ROCKY SHORES

Black musselcracker, *Cymatoceps nasutus*

Black musselcracker are also known as poenskop, black steenbras, blou biskop, stompkop, bank blouer, witbek and saqomolo. The scientific name *Cymatoceps* means "swollen head" and *nasutus*, means "prominent nose". Large adults develop thick lips and a large fleshy "nose". The black musselcracker is a stocky fish with a heavy head and powerful jaws lined with rows of crushing teeth. Adults are dark grey to blue-black in colour, while juveniles are greenish brown to black with irregular white blotches. Black musselcracker are endemic, occurring along the coast from Cape Town to Maputo. They are found on rocky inshore reefs down to 100 m. Small juveniles use rock-pools and inter-tidal gullies as nursery areas, while larger individuals prefer deeper waters. Occasionally bigger fish come over shallow reefs to feed inshore.



Adults feed on starfish, sea urchins, crabs, chitons, and fish. Black musselcracker are very slow growing and reach a maximum length of 1.1m, a weight of 38kg and live up to about 45 years. Females mature at about 55cm (approximately 10 years old) and they change sex at about 75cm (at about 18 years old). Juveniles are highly resident and perhaps even territorial with small home ranges. It is possible that large adults also hold sites but may move vast distances during the spawning season.

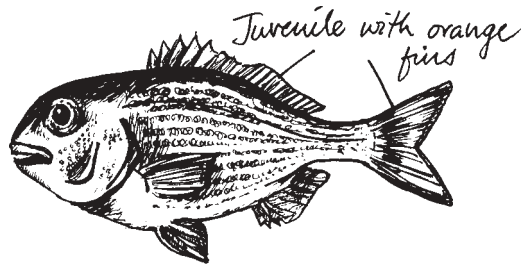
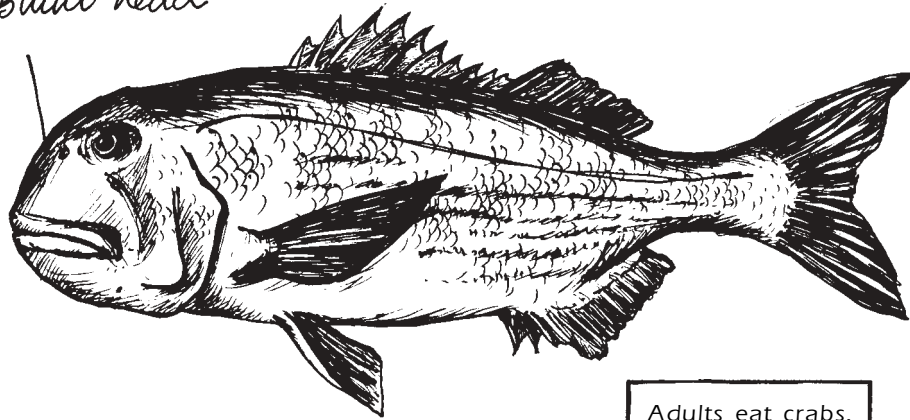


ROCKY SHORES

White musselcracker, *Sparodon durbanensis*

White musselcracker are also known as silver steenbras, cracker, wit biskop, brusher, sand stompkop, sand blouer and mhlungumenye. The white musselcracker is a powerful fish, easily recognized by its big head, blunt snout, strong jaws and a robust silver-grey body. Musselcracker are endemic to South Africa, occurring from St Helena Bay to north of Durban. They are associated mostly with reef areas and are heavily targeted by shore anglers and spearfishers along the south and south-east coasts.

Blunt head



Adults eat crabs, red bait, abalone, crayfish and fish. They grow to a maximum size of 120cm, a maximum weight of 23kg and live to 31 years.

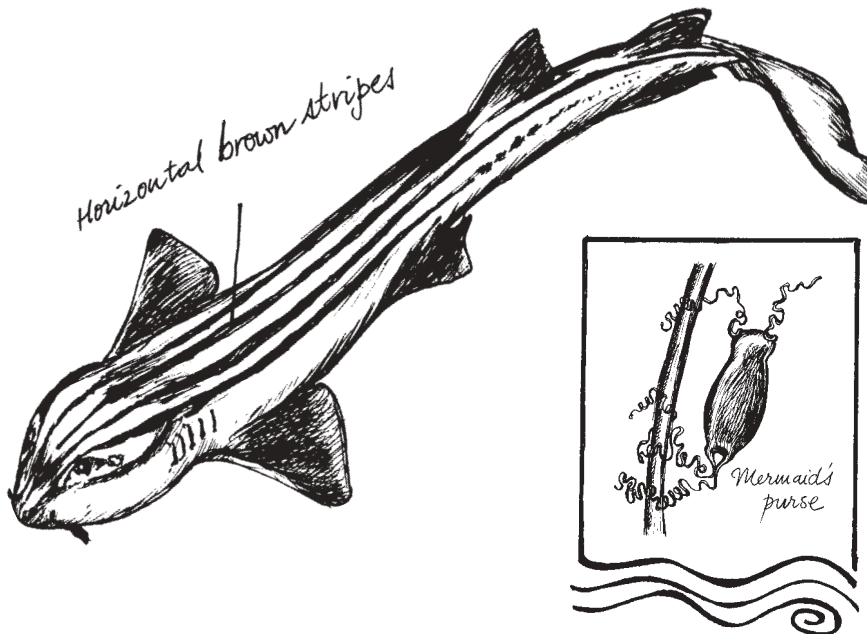
Juveniles are found in intertidal rock-pools and on shallow reefs, while adults occur from the intertidal zone down to 30m. White musselcracker mature at about 45cm (approximately 6 years old). These fish are very resident, with small home ranges, but adults are known to move great distances during spawning migrations.

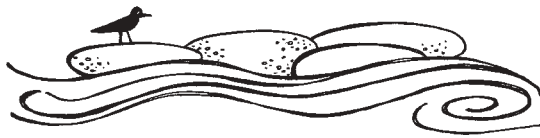


ROCKY SHORES

Pyjama catshark, *Poroderma africanum*

The name pyjama shark originates from its distinct colour pattern, consisting of long horizontal dark brown bands on a pinkish background. It is a member of the catshark family, also known as shysharks. This endemic species occurs in the cool temperate waters along our coast from Saldanha Bay to East London. It favours rocky reef areas from the intertidal zone down to 100 m. It is more active at night, often resting in rock crevices and caves during the day. Their rows of sharp, hook-like teeth are perfect for latching onto small fish, squid and octopus. They also eat crabs and worms, and scavenge on larger dead fish. The pyjama shark grows to a maximum size of 1m and a maximum weight of 8kg. Females mature at 65 – 72cm and produce two offspring annually. The eggs are deposited in egg-cases, often referred to as “mermaids’ purses”, and released in the inshore zone where they become attached to kelp and other hard algae. After absorbing the yolk-sac the pups hatch at approximately 14cm in length and are perfect miniatures of their parents. All the catsharks appear to be resident and possibly undertake short offshore movements during the day and onshore movements by night.

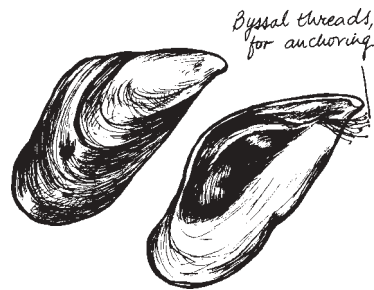




ROCKY SHORES

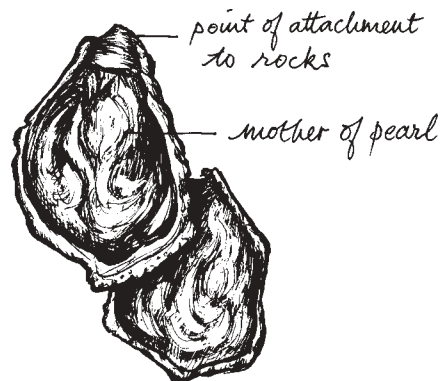
Brown mussel, *Perna perna*

The brown mussel is also known as imbaza along the coasts of Transkei and KwaZulu-Natal. They occur as dense beds in the lower intertidal zone on rocky shores from Cape Point to Mozambique. Mussels attach themselves to rocks by means of a beard of strong threads. The edible flesh of mussels is either whitish yellow (males) or orange brown (females), which consists mostly of their gonads (reproductive organs). Brown mussels are harvested as an important protein source by subsistence collectors and also as a luxury food item by others. Brown mussels filter-feed on plankton drifting in the water, which is washed over them by wave action. They spawn twice a year and reach a maximum size of 15cm.



Cape rock oyster, *Striostrea margaritacea*

The Cape rock oyster is also known as Kaapse oester and ingwathu. They are widely distributed from False Bay to Mozambique and are common on rocky reefs and ledges from the lower intertidal zone down to 10m. They are also found on rocky banks in some permanently open estuaries. Oysters remain attached by cementing their shell to the rocks. Oysters are considered to be a delicacy and highly sought-after as a luxury food item by recreational and commercial collectors and also as a food source by subsistence collectors. Cape rock oysters are filter feeders. They become sexually mature at about 1.5cm (4 months old) and grow to about 18 cm in length. They spawn mostly during autumn.

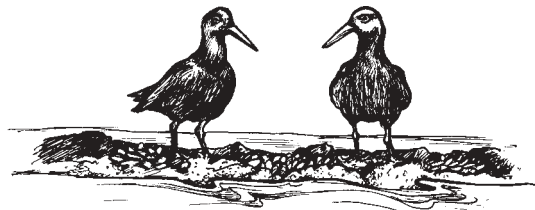
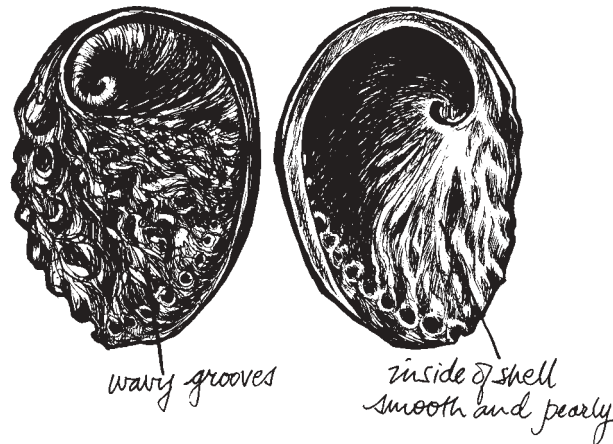




ROCKY SHORES

Abalone, *Haliotis midae*

Abalone is more commonly known as perlemoen or ingquba. They occur from St Helena Bay to Mbashe River and live in areas of strong wave action, from the intertidal zone down to 5m. Their shells are broad and flat, with wavy creases on the upper surface. Abalone use their broad muscular foot to cling to the rocks, while the flat shell helps reduce resistance from wave action (making them more streamlined). The holes in their shells are for water to leave the body after passing over the gills. Abalone are highly sought-after as a luxury food item. There is a very high demand for the meat on overseas markets, particularly in Asian countries. The very high price for abalone meat has led to illegal poaching and over-exploitation in South African waters. The shell, with beautiful "mother of pearl" on the inside, is also popular on both South African and overseas markets. Abalone are very slow growing and graze mainly on red seaweeds.

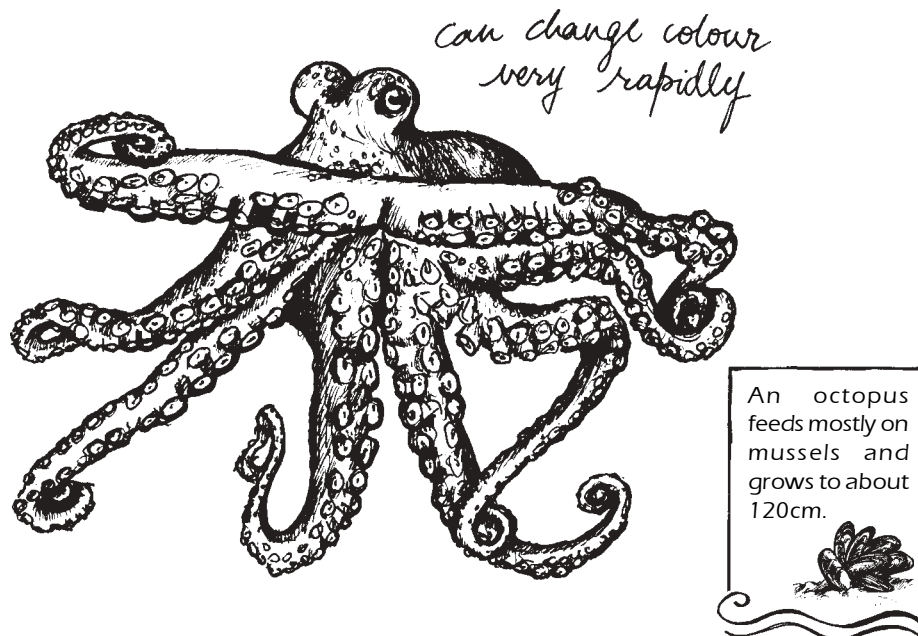




ROCKY SHORES

Common octopus, *Octopus vulgaris*

The common octopus is also known as catfish, seekat and ingwane. The octopus belongs to the group of animals known as the cephalopods (meaning head-footed), which includes squids and cuttlefish. It has eight tentacles with suckers around the mouth, and has no shell. Octopus have very good eyesight, and their eyes are very similar to human eyes. They can change colour very quickly, which allows them to camouflage themselves (to look like the background) to avoid predators. The common octopus occurs from Walvis Bay to northern KwaZulu-Natal. They are found in reef areas from the intertidal region down to 200m. Octopus hide in crevices and are very territorial. They are in demand as bait and as food for subsistence collectors in rural areas. They reach sexual maturity at about 3 to 4 months and only live for 9 to 15 months. The female octopus guards her eggs and aerates them by blowing water over them. During this time she stops feeding and dies after the eggs hatch.

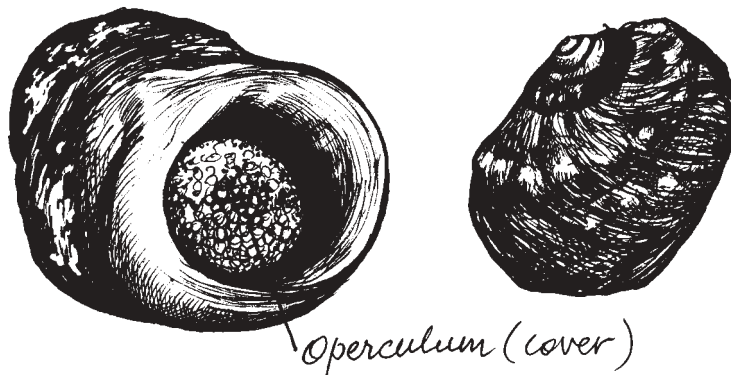




ROCKY SHORES

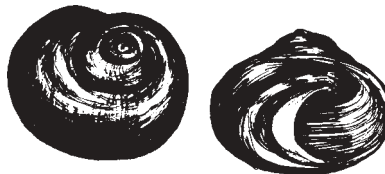
Alikreukel, *Turbo sarmaticus*

The alikreukel is also known as giant periwinkle and iqongwe. They occur from False Bay to the Transkei and live in rock pools and on reefs in the intertidal area to a depth of about 8m. They have a rough brown-black spiral shell and a large white knobby operculum. Alikreukel are harvested for food by both recreational and subsistence collectors, and are sometimes used for bait. They are herbivores, grazing on fine algae and small seaweeds. They reach sexual maturity at about 6.5cm and grow to about 10cm in size. Spawning takes place during the summer.



Periwinkle, *Oxystele sinensis*

The periwinkle is also known as the pink-lipped topshell and icakula. It has a dark, mostly black, smooth spiral shell and a thin "see-through" operculum. They occur from Cape Point to the Transkei and are found from the lower intertidal zone to a depth of about 5m. Periwinkles are harvested by subsistence collectors along the Transkei coast and sometimes used as bait by anglers. Periwinkles are herbivores, grazing on fine algae and small seaweeds. They grow to about 4.5cm.

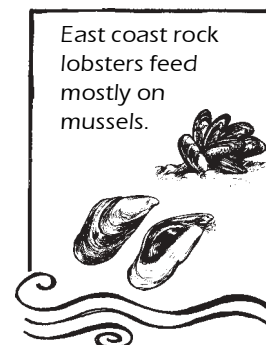
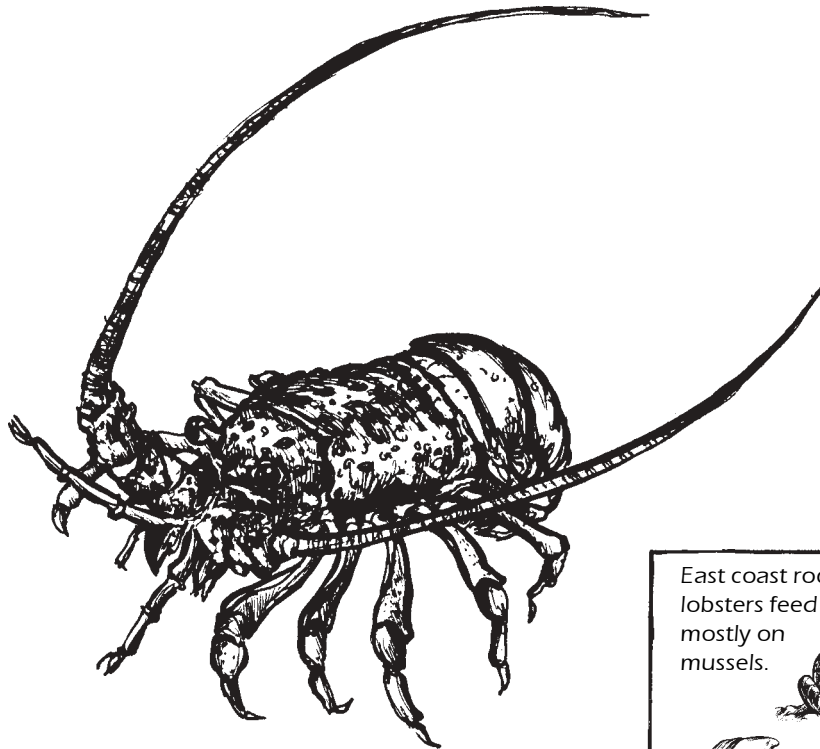




ROCKY SHORES

East coast rock lobster, *Panulirus homarus*

The east coast rock lobster is also as known as crayfish, kreef and umdambi. They occur from Port Elizabeth all the way up the east coast of Africa, but are most abundant between the Transkei and northern KwaZulu-Natal. They live in crevices and holes under rocks on rocky reefs down to 20m, but are found mostly shallower than 10m. The hard outer skeleton and antennae are covered with sharp spines. Rock lobsters (both the east coast and the west coast lobsters) are delicious to eat and are in great demand as a luxury food item.





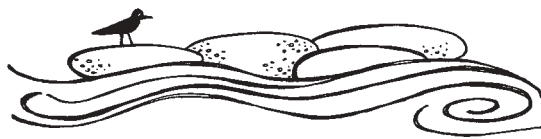
ROCKY SHORES

Redbait, *Pyura stolonifera*

Redbait is also known as rooi-aas and isenene. On the outside redbait looks like a barrel-shaped hard brown potato with two nipples, but inside the flesh is soft and bright orange-red in colour. Redbait have two siphons, one for taking water (with food and oxygen) in and one for squirting waste water out. They are filter feeders, eating mainly broken down plant material. Redbait is common and occurs all around our coast from Luderitz in Namibia to southern Mozambique. The firmly attached redbait occur mostly from the low tide zone down to 10m.



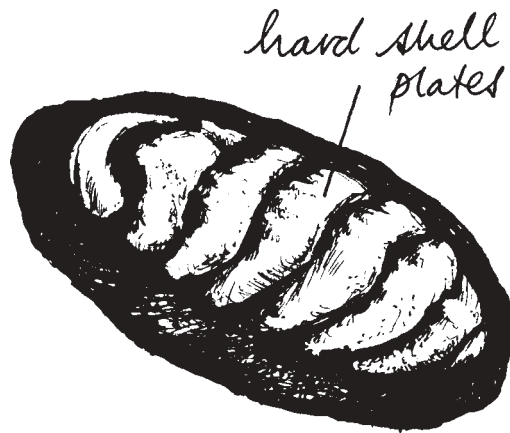
Redbait is very good bait for catching many fish and is sought-after by subsistence and recreational anglers along the entire coastline. It is also harvested as a basic food source by subsistence collectors in the Transkei. Redbait matures at about 4.5cm (about 10 months old) and grows to about 15cm in height but can grow larger. In the Eastern Cape spawning takes place between September and December and again between June and August.



ROCKY SHORES

Giant chiton, *Dinoplax gigas*

The giant chiton is also known as saddleback, armadillo and mqwabulo. They occur from Cape Point to northern Transkei. The shell of the chiton is divided into eight separate plates held together by muscles. These plates provide protection, and when the animal is removed from a rock it curls up into a tight ball to protect the soft body parts and gills underneath. They are in high demand as food by subsistence collectors in some rural areas and as bait by shore anglers for catching musselcracker. Chitons are slow moving animals that cling tightly to rocks. They are mostly found under boulders and in cracks along the edges of rocks and may often be covered in sand. They are herbivorous, eating mostly fine algae that they scrape from the surface of rocks and shells using their rasp-like "tongue", called the radula. They grow to about 10 to 15cm.

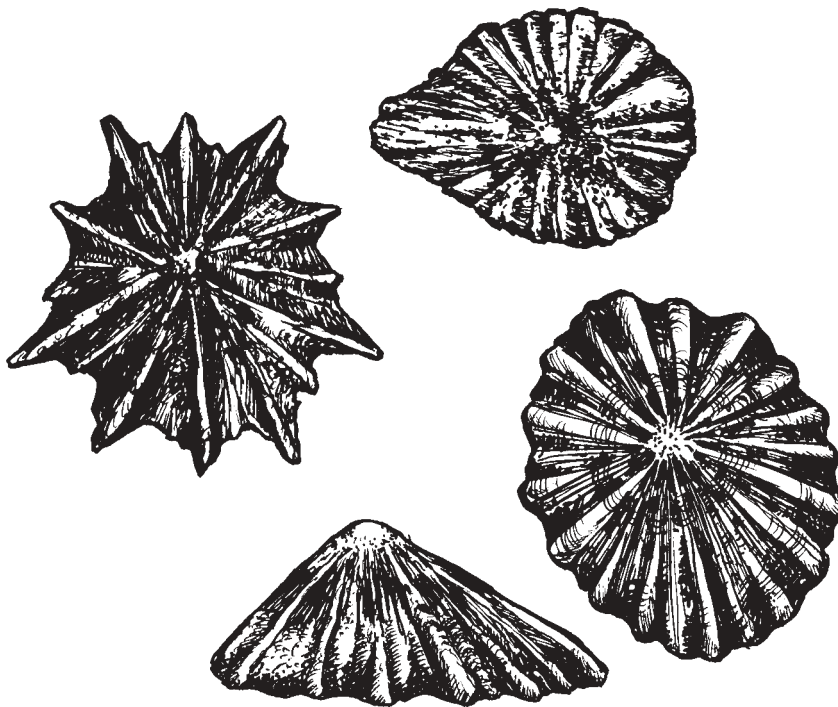




ROCKY SHORES

Limpets, *Patella* species

Many different species of limpets occur along the South African coast, where they are also known as isebebe. The distribution of the different species also varies along our coastline. It has been discovered that they do not cling to the rocks by suction, but by a thin layer of slime between the foot and the rock – the same way two sheets of glass that have a thin layer of water between them are almost impossible to pull apart! Most limpets have fairly flat shells adapted to living in the intertidal zone where there is strong wave action. Limpets are used as food by subsistence collectors and also as bait to catch rock lobsters. They are seaweed grazers (herbivores) and adopt different methods of feeding. For example, some limpets lift their shell up and then slam it down to trap pieces of seaweed; others have “seaweed gardens” which they defend, while many move around and graze on the surface of rocks.





SANDY BEACHES

About 70% of the South African coastline is made up of sandy beaches. This environment is constantly being changed by wind, waves and currents. Wind blows sand from the beach to the dunes, while the waves and currents move the sand along as well as on and offshore. Sandy beaches can be divided into the surf zone, the beach and the dunes. Each of these areas supports its own unique animal and plant life. In the surf zone large numbers of algae provide food for zooplankton (microscopic floating animals), shrimps and prawns. Fishes, such as mullet, feed on the algae and zooplankton and in turn, provide food for predatory fish such as dusky kob and shad. On the beach there are no plants but some animals, such as sand mussel and the plough snail, burrow into the sand to escape the crashing waves. These animals are dependent on the tides for their movement and feeding. Birds such as seagulls and oystercatchers are the predators here and eat many of the burrowing animals. In the dunes, some hardy plants such as sea pumpkin and pipe grass can survive. These plants play an important role in stabilizing the dunes for other species to begin growing. Many insects, birds, lizards, frogs and mammals have been found in dunes. Sandy beaches are threatened by human activities such as development (eg. building of breakwaters) and pollution.

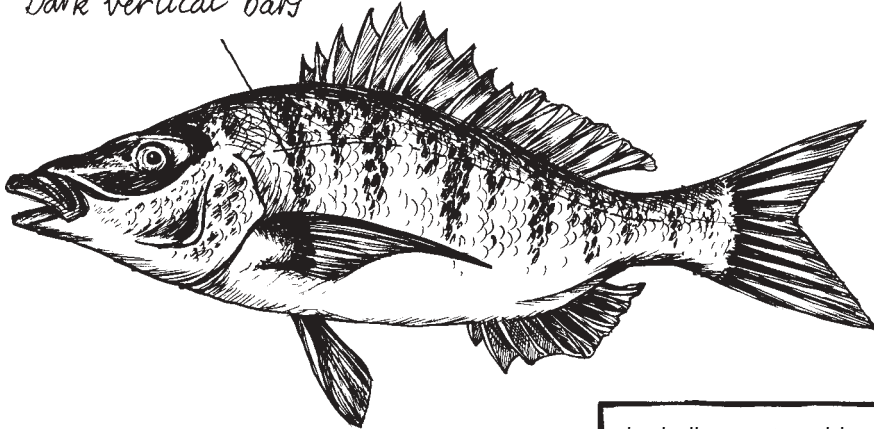


SANDY BEACHES

White steenbras, *Lithognathus lithognathus*

The white steenbras is also known as pignose grunter, river steenbras, varkbek and ngcangolo at different places along our coastline. This silvery-white fish with a pointed head has seven dark vertical bars on both sides of its body, which are darker in smaller (younger) fish. The white steenbras is endemic to South Africa from the Orange River to southern KwaZulu-Natal. Small juveniles enter estuaries at a size of 3 to 5cm and remain in estuaries for the first year of their life, but may stay for two years or more. Larger juveniles (30 to 60 cm) prefer sandy beach surf zone areas, while fish bigger than 65cm are also found in water down to 25m.

Dark vertical bars



White steenbras are sexually mature at a size of 65cm and an age of 6 years. They reach a maximum length of about 140cm, a maximum weight of 30kg and live for 25 to 30 years. Small fish in estuaries and inshore coastal waters appear to be fairly resident but start migrating longer distances when they become sexually mature. Adults make annual spawning migrations to the Eastern Cape and Transkei coasts in late winter (July to August). Many fish return to the Western Cape where they spend the summer.

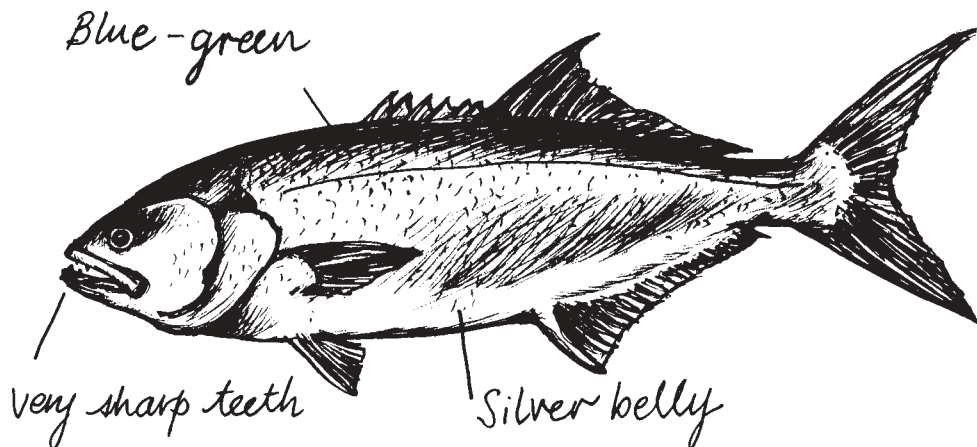
In shallow water white steenbras are often seen "tailing" (waving their tails above the water) as they blow their prey, such as prawns, bloodworms and small crabs from their holes.



SANDY BEACHES

Elf, *Pomatomus saltatrix*

Also known as shad in KwaZulu-Natal, the elf is bluish-green above and silvery below. The scientific name *saltatrix* means "dancing/leaping girl", which it does when chasing its prey or when fighting on the end of an angler's line. It is a very important coastal angling species throughout its distribution, from Langebaan to Mozambique. They occur in coastal waters but may also be found in estuaries and offshore waters. Elf have small razor-sharp teeth and are almost exclusively fish-eaters that prey on smaller shoaling species.



Elf reach sexual maturity at an early age (one year) and a size of about 25cm. They live for up to 10 years, grow to a maximum size of about 1m and weigh up to 10kg. During the well-known winter 'sardine run', most elf undertake a spawning migration to KwaZulu-Natal. Spawning occurs from September to December, after which the small pelagic larvae are carried southwards by the Agulhas current. Early juveniles spend their first year in estuaries and inshore coastal waters along the southern and south-eastern Cape coasts. Large elf from the Western Cape probably do not migrate to KwaZulu-Natal.

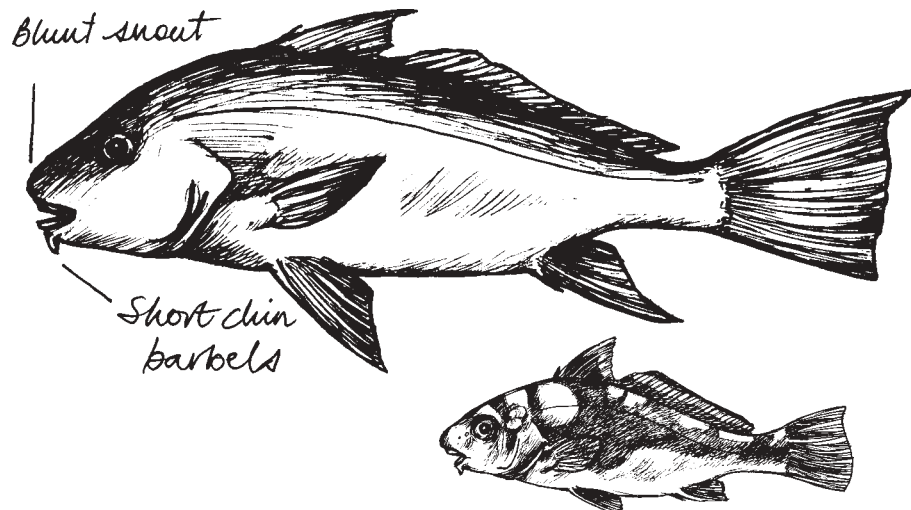
Elf are ferocious feeders often attacking in packs, biting and ripping fish while in a feeding frenzy similar to that of some sharks.



SANDY BEACHES

Slender Beardman, *Umbrina robinsoni*

Slender beardman are also known as tasselfish, bellman and belvis. They are shy fish often hiding in caves and under rock ledges, hence the scientific name *Umbrina* which means "shade loving". Depending on their surroundings they can change from a dark-brown colour to silver in a few seconds. Fish found over sandy areas are usually silver in colour, while those in caves or in deeper water are a muddy brown to grey colour. Beardman also have a short, thick, tubular chin barbel just below the mouth. The slender beardman occurs along the east coast of Africa. They prefer sandy and rubble bottoms, but also occur on subtidal reefs down to 130m. Small juveniles have occasionally been found in tidal rock pools. They feed on worms, shrimps, prawns and crabs that are buried in the sand.



Slender beardman mature at 35 to 40cm in the Western and Eastern Cape, while in KwaZulu-Natal they mature at 45 to 50cm. They grow to a maximum size of about 80cm and a weight of 1 kg. Slender beardman spawn from November to January in Cape waters, but in warmer KwaZulu-Natal waters they spawn all year. Spawning occurs throughout their distribution range, with no apparent spawning migrations. Tagging studies also show that they are resident with small home ranges.

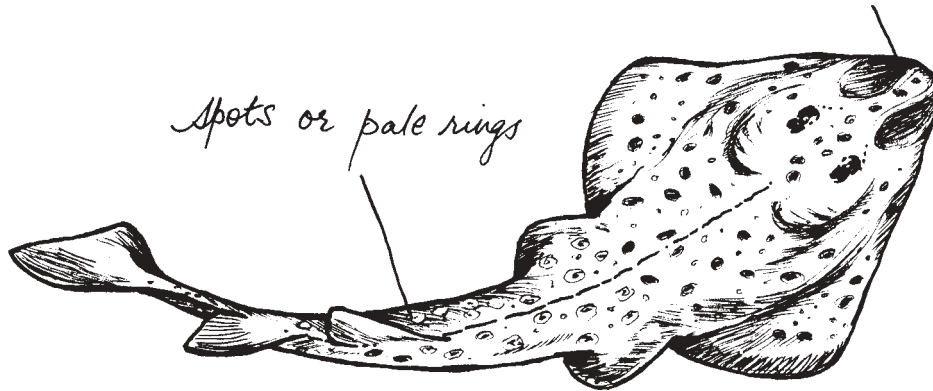


SANDY BEACHES

Lesser Guitarfish, *Rhinobatos annulatus*

The lesser guitarfish is also known as the lesser sandshark. It has a broad wedge-shaped head with “see-through” patches on the snout. The scientific name *Rhinobatos* means “ray with broad snout”. The top of the flattened body is a light brown to tan colour and has many dark spots (for KwaZulu-Natal fish) or brown and white rings (on fish from the Cape). The fish is white underneath. The lesser guitarfish occurs from Namibia to northern KwaZulu-Natal. It is a very common sandy beach fish often caught by beach anglers fishing for dusky kob. They are found around estuary mouths and especially in Langebaan Lagoon in the Western Cape.

'see through' snout



Males are sexually mature at about 60cm and females at about 65cm. In Eastern Cape waters mating takes place between April and June and after a gestation period of ten months three to ten pups (20 to 25cm) are born. The female releases the pups close inshore, often in estuary mouths or in the surf zone. More guitarfish are found inshore during summer months, suggesting that some offshore / inshore migrations occur, while migrations of several hundred kilometers along the coast have also been recorded.

Guitarfish feed on sand mussels, crabs and worms

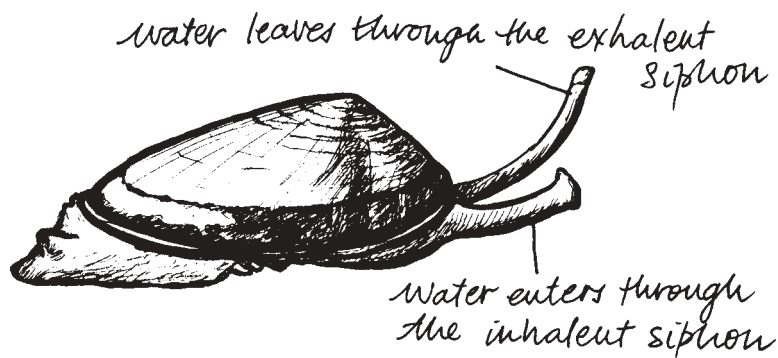
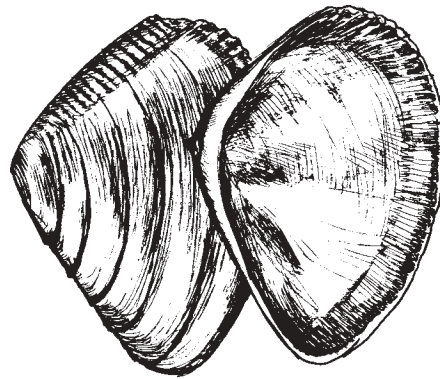




SANDY BEACHES

Sand mussel, *Donax serra*

The sand mussel is also known as white mussel or wedge shell. They occur from northern Namibia to Transkei and are commonly found on fine-grained sandy beaches that are exposed to strong wave action. Sand mussels are harvested for food and for bait. They live buried in the sand and feed by sieving phytoplankton (very small, microscopic plants) from the water using their long siphons which stick out above the sand. The siphon which draws water into the body has a special sieve to prevent sand grains from being sucked in. Sand mussels become sexually mature at 4.5cm (about 2 years) and grow to a length of about 8cm.

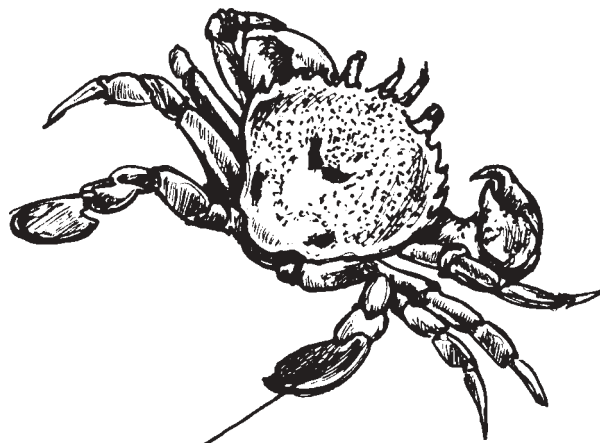




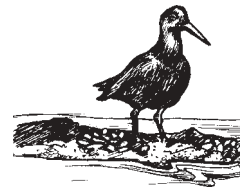
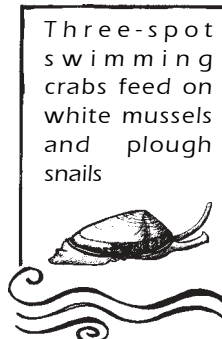
SANDY BEACHES

Three-spot swimming crab, *Ovalipes trimaculatus*

The three-spot swimming crab is also known as sand crab or unonkala. It has 5 pairs of legs. The first pair has strong nippers (pincers) for protection and for getting food, while the last pair look like "paddles" and are used for swimming. Despite being good swimmers they spend a lot of time buried in the sand. They are endemic to South Africa and occur from the Orange River to Durban. Three-spot swimming crabs are found from the surf zone to a depth of 90m. These crabs are collected by subsistence collectors for food and also used for bait by recreational anglers. They feed on white mussels and plough snails, using their strong nippers to crush the shells or prise open the shells of larger sand mussels. The three-spot swimming crab grows up to 6cm (body width) after about 3 years. They breed in winter, when the female may produce up to half a million eggs!



rear legs like
paddles for swimming



Glossary

Adipose eyelid: a transparent (“see through”) eyelid that covers or partially covers, protects and streamlines the eye of some fish.

Aerate: to give air to something.

Antennae: jointed, mobile, whip-like “feelers” which are used for touch and smell.

Detritivore: an animal that eats detritus which consists of decomposing plant or animal matter and sand, silt or mud.

Endemic: native or unique to a certain area (ie. a fish which is endemic to the Transkei coast means it is found there and nowhere else).

Gestation: this is the period of time a female carries her young until they are ready to be born (eg 9 months for humans).

Herbivore: an animal that eats plants.

Intertidal zone: area between high tide level and low tide level.

Invertebrate: an animal without a backbone, eg crab, mussel, worm, redbait, etc

Juvenile: immature, miniature replica of the adult.

Larva: early stage in the life history of an animal between hatching and becoming a juvenile.

Migrate (migration): to move from one place to another; this could be seasonal or for breeding/spawning.

Omnivore: an animal that eats plants and animals.

Operculum: gill cover on a fish or the covering across the mouth of a gastropod shell when the animal pulls itself back into its shell.

Pelagic: open sea.

Plankton: this is made up of zooplankton (microscopic animals and larvae) and phytoplankton (microscopic plants) that float feely in the sea.

Predator: an animal which hunts or kills other animals for food.

Resident: a fish is said to be resident in the area where it lives. Some fish only stay in one place, while others may be fairly resident, coming and going, but not moving very far away.

Siphon: a tube or pipe for taking in or letting out water.

Sexually mature (sexual maturity): an animal is sexually mature (or has reached sexual maturity) when it is able to start breeding.

Subtidal zone: below the low tide level.

Sustainable: to make use of a resource in such a way that there will be a continued maximal harvest; unsustainable use, or over-exploitation, would result in a crash of the resource, with it no longer being available for future generations.

Territorial: an animal is said to be territorial when it defends its territory or “home space” from other animals that might want to live there or eat its food.

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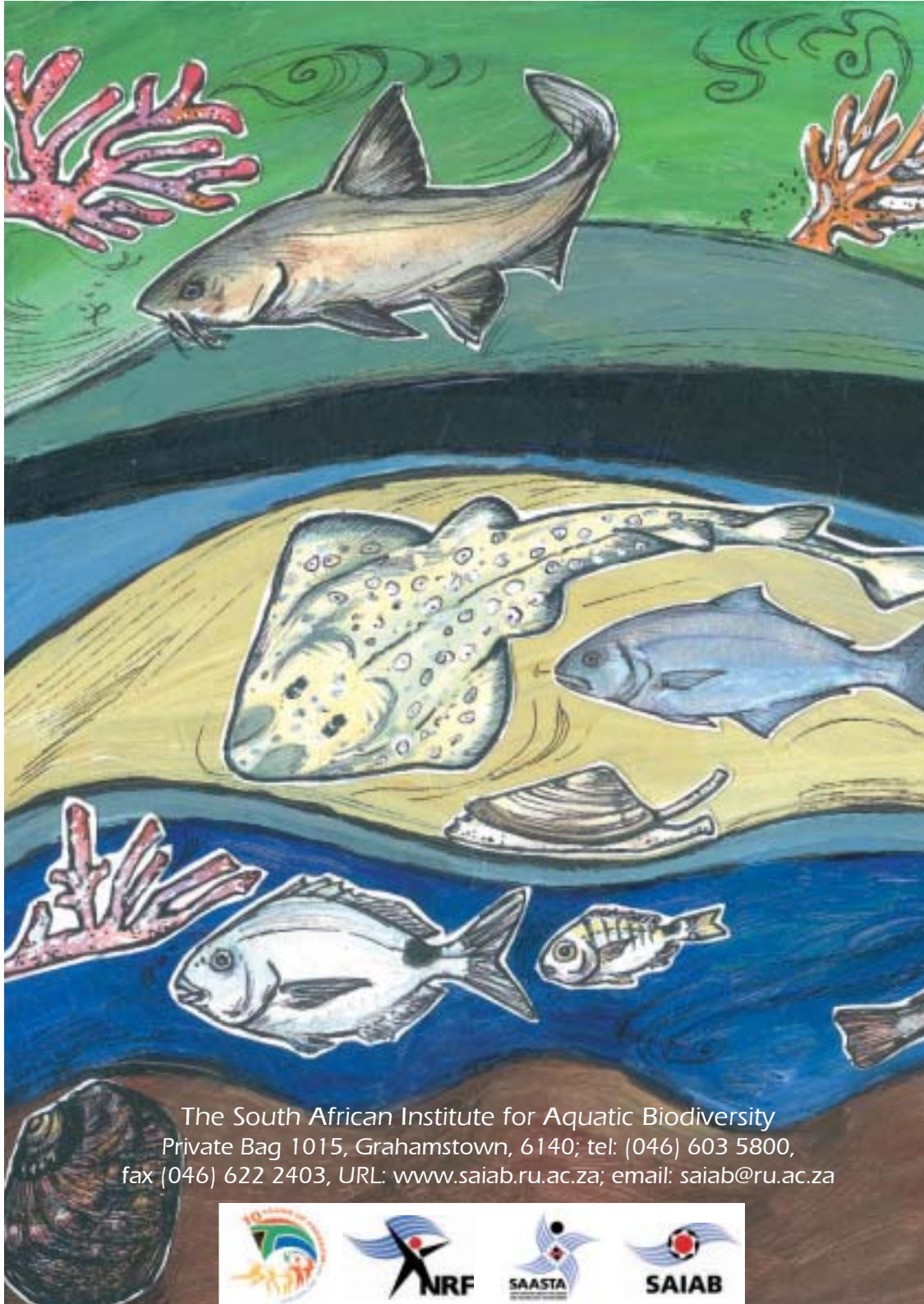
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