

CHAPTER 7

*COMMONLY CAUGHT FISH*

- A. FISH HABITATS
- B. SURFACE SCHOOLING TUNAS
- C. LARGER TUNAS BIG EYE AND YELLOWFIN
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- I. TREV ALLIES
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- K. CORAL TROUTS AND GROUPERS
- L. SHARKS
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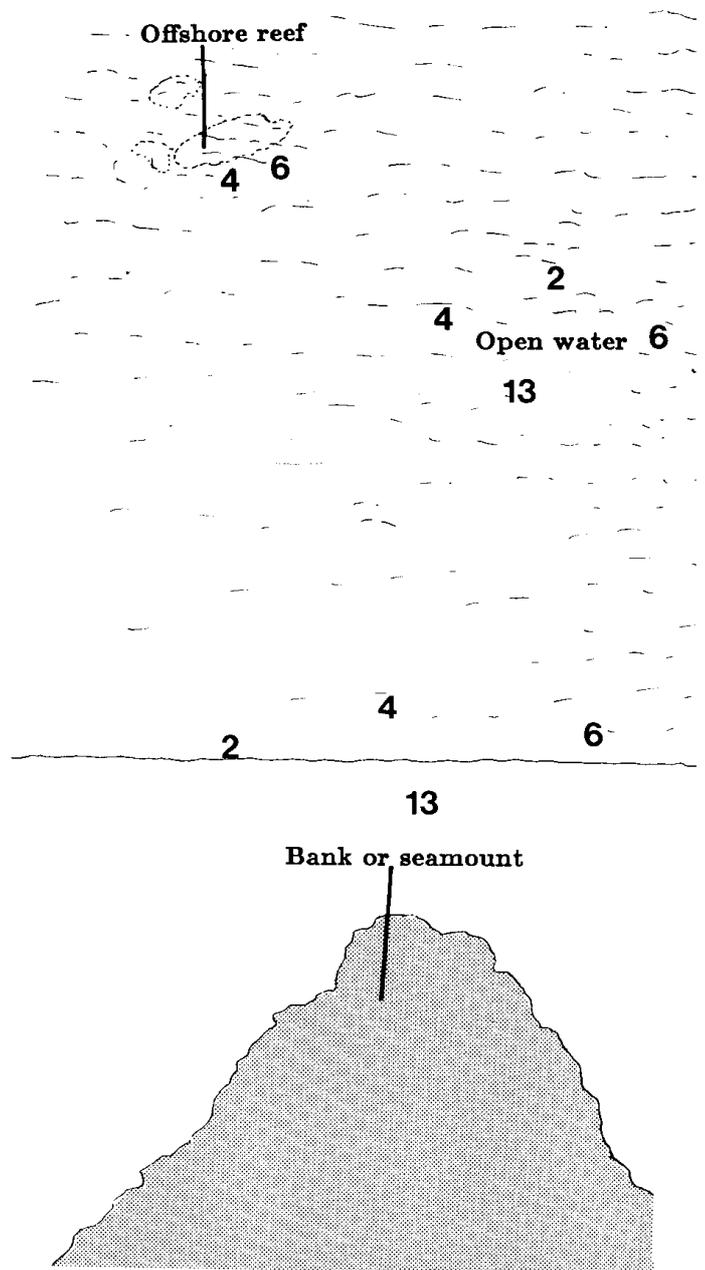
# CHAPTER 7: COMMONLY CAUGHT FISH

## SECTION A: FISH HABITATS

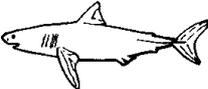
The types of fish caught during any trolling trip will be determined by a number of factors, the most important of which is the trolling area as discussed in Chapter 5. Different fish species typically occupy particular habitats, or types of area. For instance, skipjack tuna can generally be said to live in the surface waters of the open ocean, while coral trouts are normally found living in close association with the reef. Where habitats overlap -in this case, where relatively open ocean waters are interrupted by coral reefs -both types of fish may sometimes be encountered in the same area.

The diagram opposite shows the type of habitat usually occupied by the more important species of fish caught by trolling. The drawing is only a generalisation, however, as it very frequently happens that a given type of fish is caught far away from where it would normally be expected. Therefore, a fisherman trolling along the outer barrier reef will catch mainly reef-associated species, but can also expect a number of fish from a more oceanic environment, which happened to be close to the reef at the time. Conversely, surface trolling in open water should produce principally surface-living oceanic types, but it is likely that some 'stray' deeper-living fish, which have come closer to the surface, will also be taken.

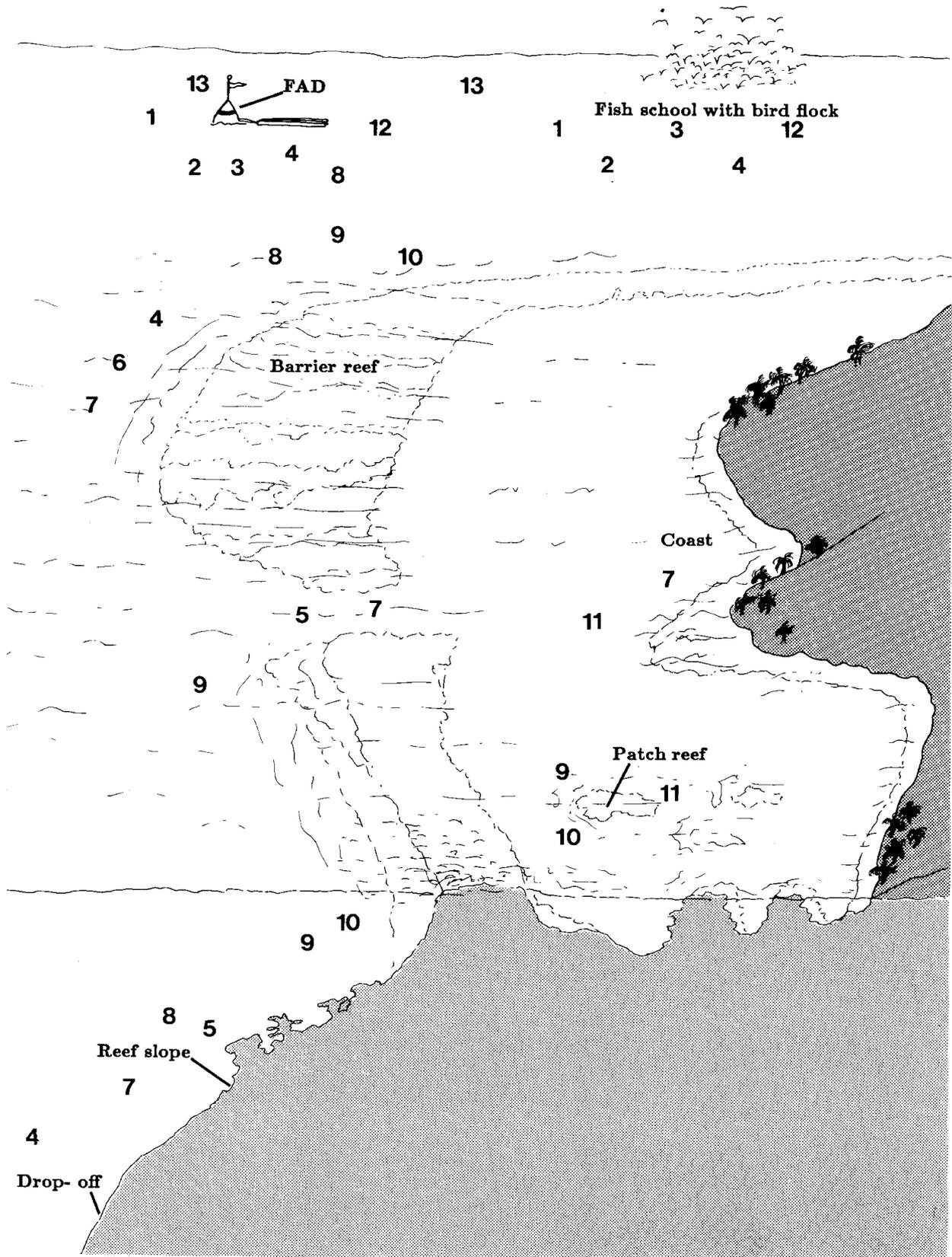
Many other factors will also play their parts in determining the species composition, and for that matter the quantity, of the fish caught. These include season, tide, time of day, trolling speed, gear presentation, and the many other variables discussed in Chapter 5. Since some species are more valuable or acceptable than others, most fishermen wish to selectively catch one or several particular types of fish. The rest of this chapter deals with the characteristics of the species most commonly caught by trolling, and suggests some ways in which fishermen can modify their techniques in order to improve catches of these types.



### FISH SPECIES

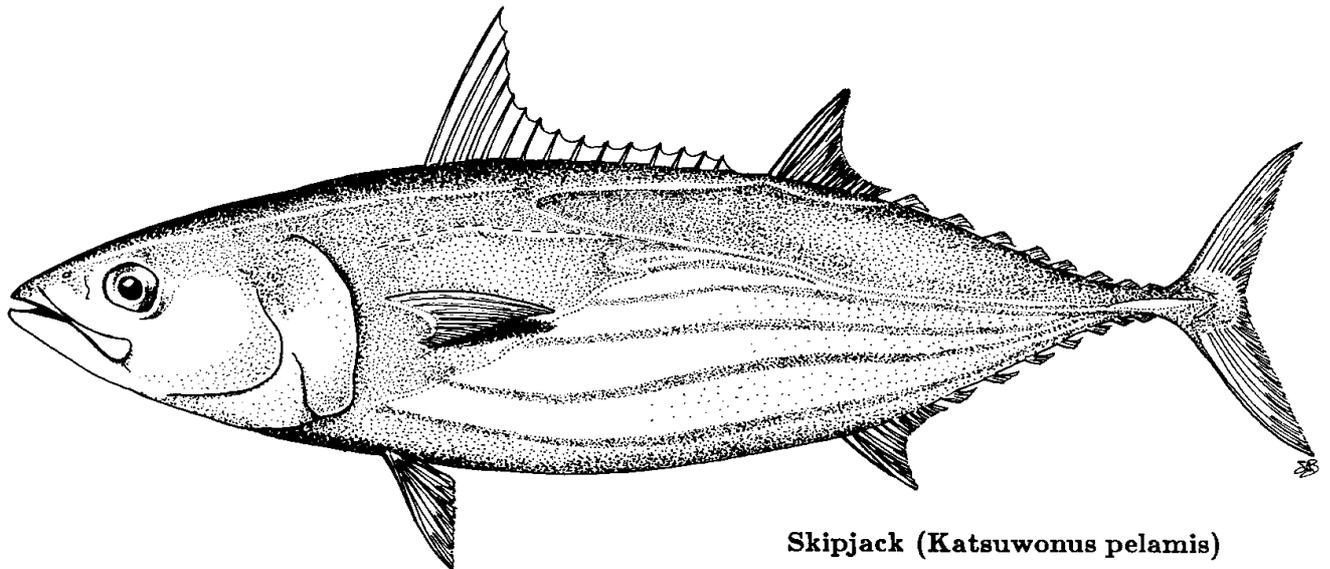
- 1) Skipjack 
- 2) Dolphin fish 
- 3) Juvenile yellowfin and bigeye 
- 4) Adult yellowfin and bigeye 
- 5) Dogtooth tuna 
- 6) Wahoo 
- 7) Spanish mackerel 
- 8) Barracuda 
- 9) Trevally 
- 10) Coral trout 
- 11) Double lined mackerel 
- 12) Shark 
- 13) Billfish 

FISH HABITATS

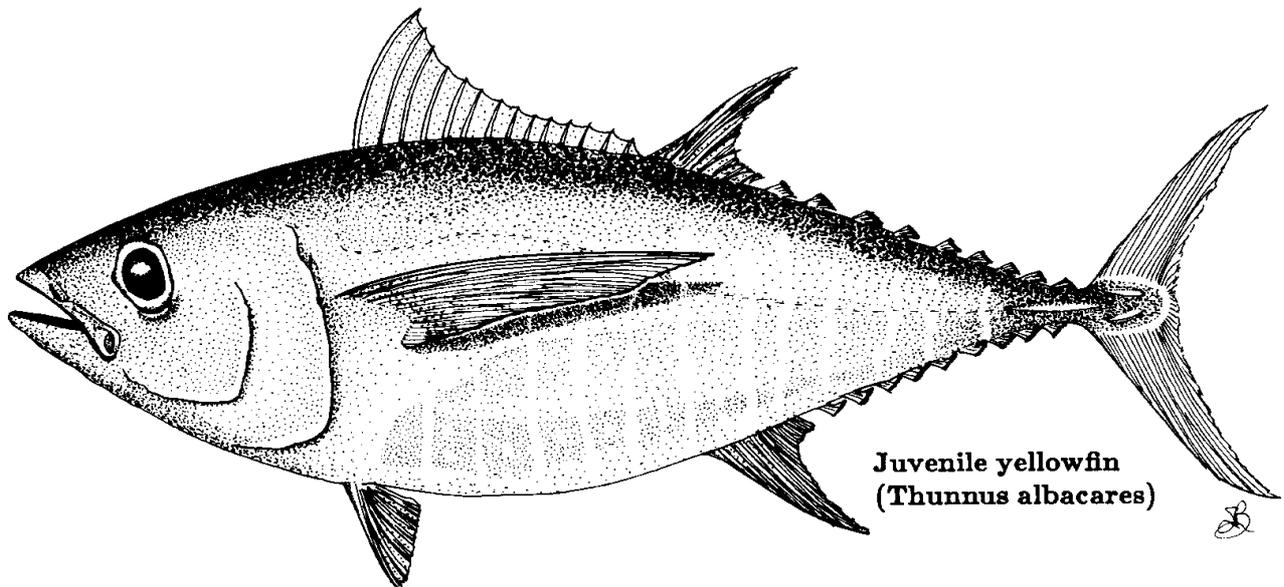


## CHAPTER 7 : COMMONLY CAUGHT FISH

### SECTION B: SURFACE SCHOOLING TUNAS



**Skipjack (*Katsuwonus pelamis*)**



**Juvenile yellowfin  
(*Thunnus albacares*)**

The three most important fish types in this group are skipjack tuna (*Katsuwonus pelamis*) and juveniles of yellowfin (*Thunnus albacares*) and bigeye (*Thunnus obesus*) tunas. Several other fish species may also be found in the same schools, and these variously include frigate tuna or frigate mackerel (*Auxis thazard*), mackerel tuna (*Euthynnus affinis*), and some non-tuna species such as dolphin fish (*Coryphaena hippurus* -see Section 7E), rainbow runner (*Elegatis bipinnulatus*), wahoo (*Acanthocybium solandri* -Section 7F), marlins (family *Istiophoridae* -Section 7M) finny scad (*Megalaspis cordyla*- Section 7M), and sharks (family *Carcharhinidae* -see Section 71).

All these species are characterised by their strong tendency to form schools, which, especially in equatorial waters, can be of very large size (tens of thousands of individuals totalling several hundred tonnes in weight). The schools may vary greatly in size, species composition, and the individual sizes of their members. Schools are often found associated with large drifting objects (trees, collections of debris, etc.), whales, or man-made FADs, and may be followed by flocks of seabirds. This too varies between locations.

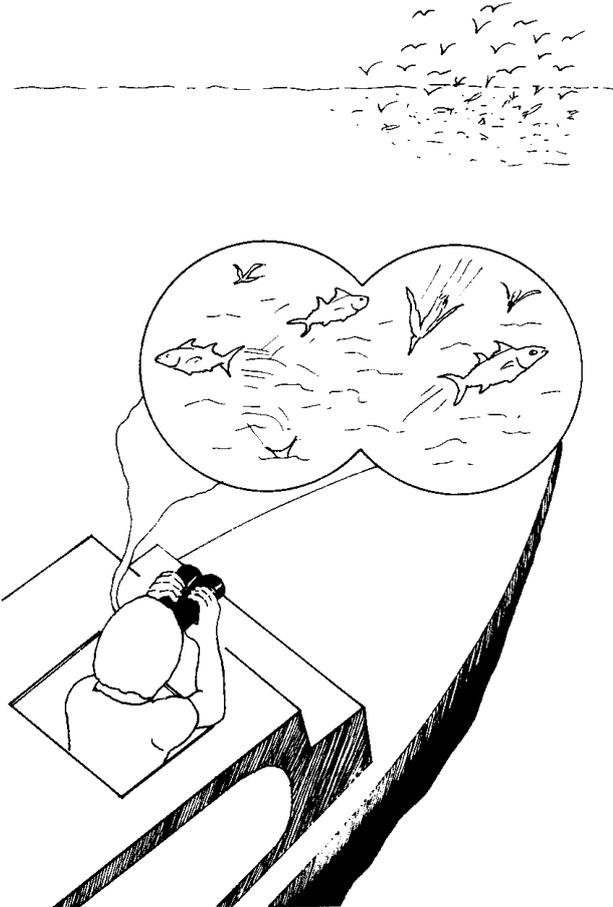
The three main fish types -skipjack, and juvenile yellowfin and bigeye -make up an important, and in some countries the most valuable, part of the catch taken on open-water tuna schools, around FADs, and sometimes along the outer reef edge. Troll caught fish tend to be relatively small, usually under 10 kg (22 lbs), although this is not always the case, and much larger adult yellowfin and big eye (see Section 7C) can often be taken, especially when deep trolling. In general, however, the fisherman planning to troll on tuna schools can afford to use relatively light gear with monofilament traces down to 25 to 30 kg (55 to 65 lbs) breaking strain (but see Sections 5D, 5E and 5F). The fact that these fish are virtually toothless, and will not bite through even relatively light nylon monofilament, is a big help to the fisherman.

Using the lightest practicable gear is particularly important for tunas, which are visual feeders and are usually found in clear oceanic waters. They have acute eyesight, capable of detecting even small objects at a distance. These fish feed opportunistically, that is they prey on any schools of small baitfish, squid, shrimps or other surface dwelling creatures that they come across.

Because tuna feed visually, the appearance of the lure is important to fishing success. It is usually worth cutting open the stomach of the first fish caught to examine the contents. If the fish has been feeding on, for example, small pink shrimps, then small pink lures will probably be the most effective type for that day. In general, if the fish in a tuna school are feeding but not taking the lures, the lure size and colour should be changed until one type appears to be successful. Dark-coloured lures appear to be better on dark, overcast days, and light-coloured lures on bright sunny days.

**FEEDING SCHOOLS**

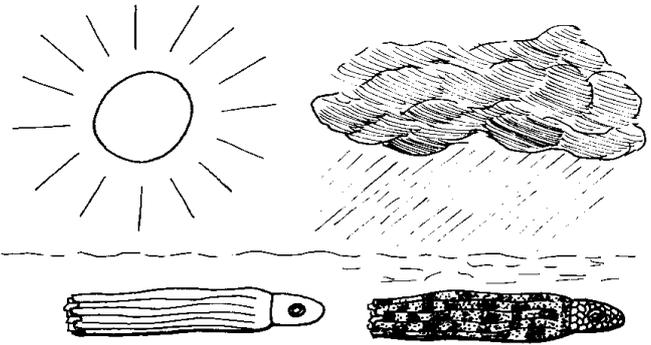
**The best schools for fishing are those where the fish swirl, roll, or cut the surface in a dense pack**



**CHOOSING LURES**

**Sunny days...**

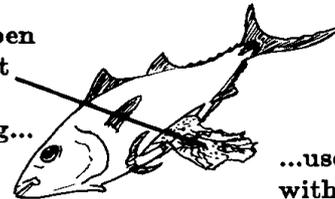
**Cloudy or rainy days...**



**...use light coloured lures**

**...use dark coloured lures**

**Cut fish open to see what they have been eating...**



**...use lures with similar colour and size**

Tuna normally cruise or travel below the surface in depths of 20 m or more, but will begin to feed when they find a school of small baitfish or other prey. The prey animals normally get driven to the sea surface, where they are also attacked by seabirds. The tuna continue feeding, often for just a few minutes but sometimes for longer, attacking their prey from below, often leaping from the water in the process. The way in which these feeding fish appear depends on they are striking their prey, and has given rise to a variety of names, such as 'jumper', 'breezer', 'boiler', and 'finner', for actively feeding tuna schools.

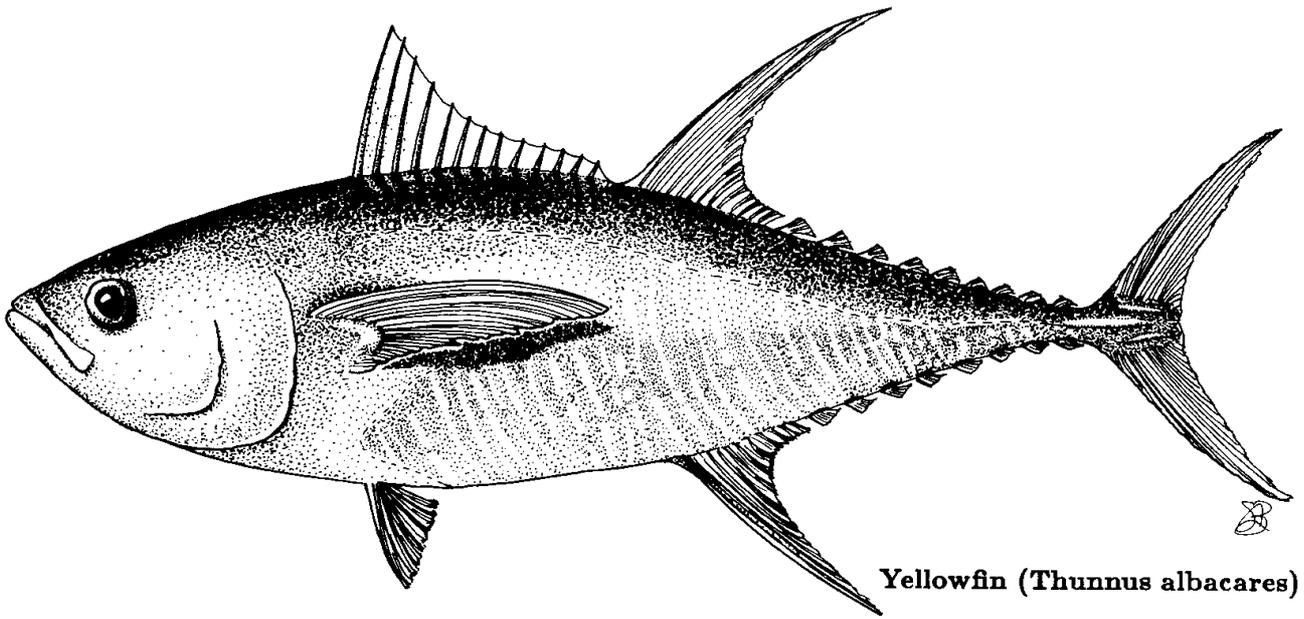
Recognising the type of tuna school from a distance is important to the fisherman, since this helps him predict the behaviour of the fish. Although school characteristics vary from one area to another, in general the more actively the fish are leaping, the less likely they are to bite. The best fishing schools are those in which the fish swirl, roll, or seem to be packed into a small area, occasionally cutting the surface with a fin or tail.

Tuna schools are frightened by certain types of boat noise, especially from engines. Squeaking pumps or bearings, excessive vibration in the propeller shaft, and exhausts which vent below the surface make some of the noises thought to scare away tuna schools.

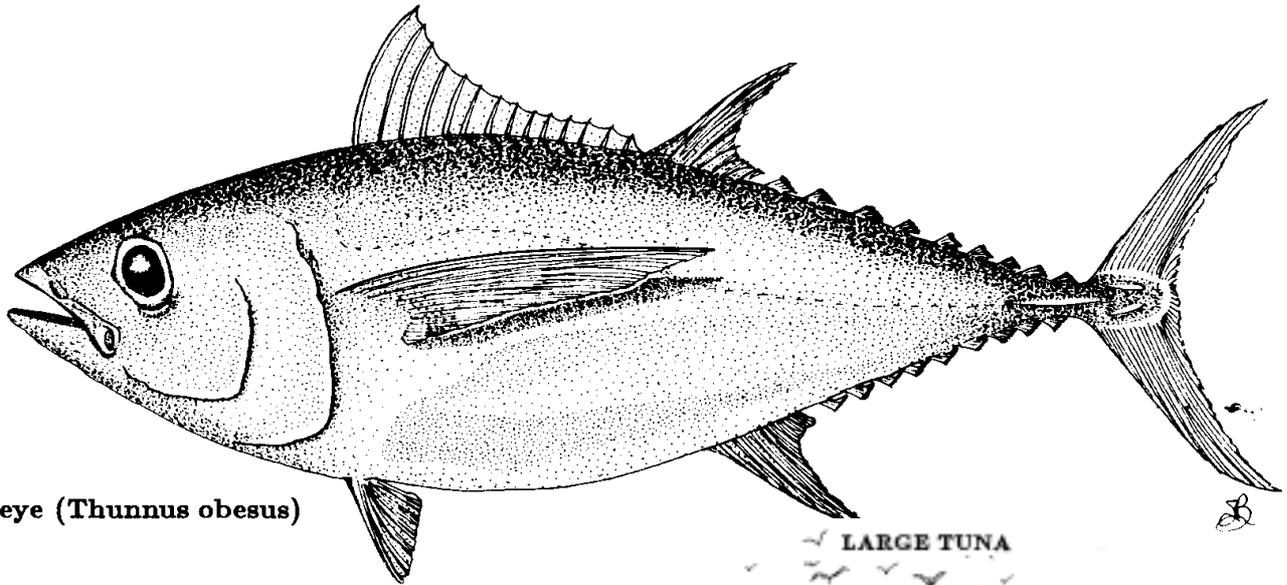
In the majority of cases, however, the fisherman has only a short time in which to catch most of his fish, since they are normally uninterested in attacking his lures outside of the periods of intensive feeding activity. This mean that the fishing operation must be rapid and efficient to take full advantage of the tuna's biting.

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SECTION C: LARGER TUNAS -BIG EYE AND YELLOWFIN



Yellowfin (*Thunnus albacares*)



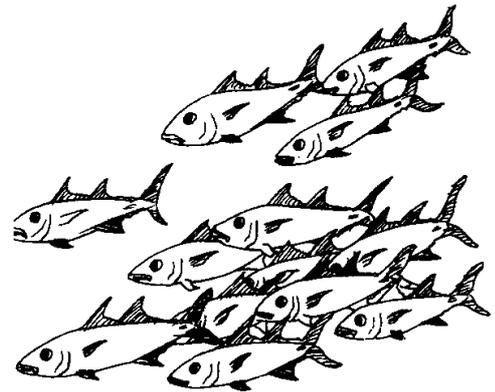
Bigeye (*Thunnus obesus*)

LARGE TUNA  
When they get bigger  
large tuna leave  
the surface schools...

...and form smaller  
groups in deeper water

Unlike skipjack tuna, which only grow to a relatively small adult size (seldom 20 kg, or 45 lbs), yellow fin and bigeye can both reach weights of well over 100 kg (220 lbs). As the fish grow, they appear to lose their inclination to join large surface schools (see Section 7B). Instead, they form smaller groups, called 'pods', of a handful or a few dozen individuals, and these are usually found swimming in sub-surface or deep waters.

Most surface tuna schools would be expected to have one or more pods of large individuals associated with them. These are usually found swimming below the main body of the school or in its lower levels. Surface schools consisting mainly of big fish (50 to 70 kg, or 110 to 155 lbs) are sometimes found, but this is the exception rather than the rule.

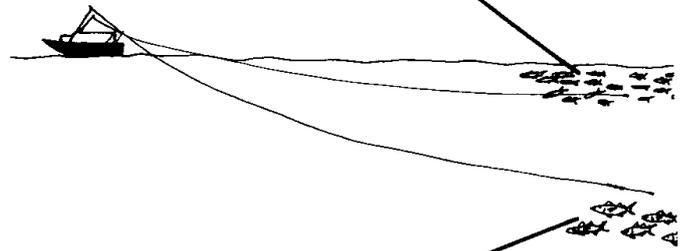


So, although large tunas are sometimes taken while surface trolling, they are more liable to be caught by sub-surface or deep-trolling. Running through a tuna school with lures on heavily weighted lines, or lines fitted with diving boards, will often produce one or two 'big fellows' which would not be expected on the surface.

If larger tuna are caught on surface lines, this will often happen just after dawn or before dusk. The fish seem to move deeper when the daylight gets stronger.

**DEEP TROLLING**

**Surface lines catch smaller fish...**

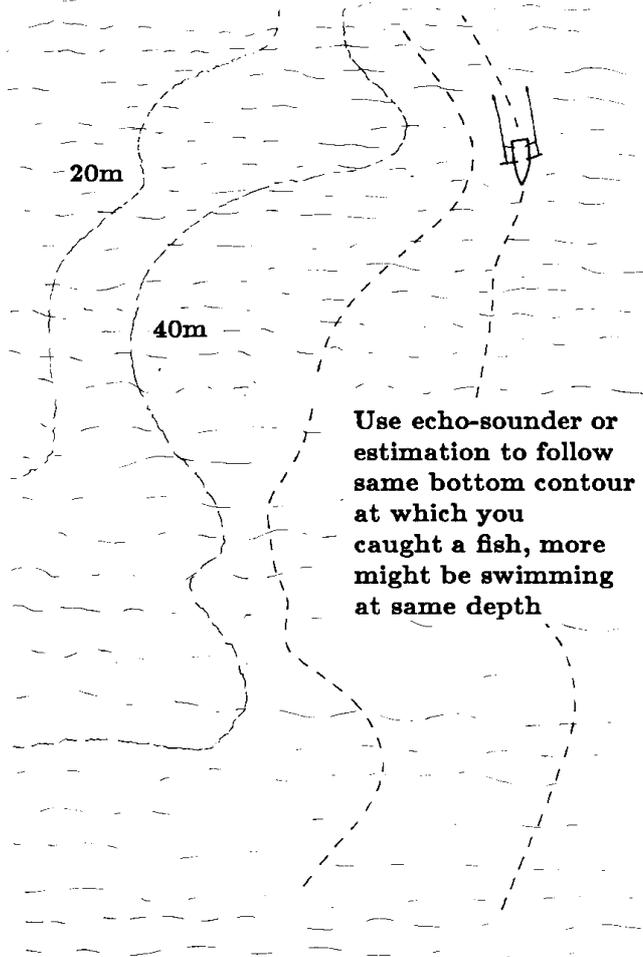


**...deep lines may catch the larger ones**

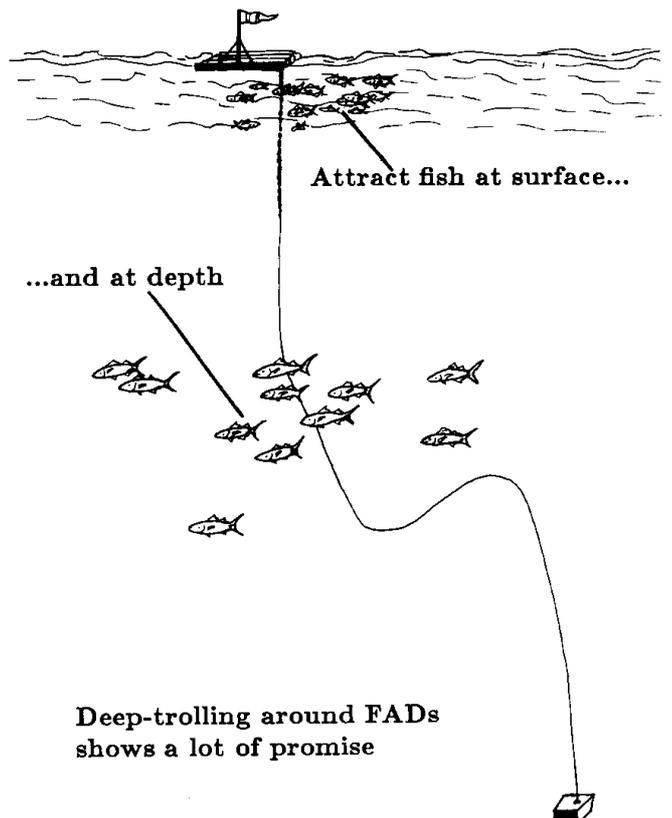
Pods of adult yellowfin and bigeye are also found cruising at depth along the outer reef edge. Sub-surface or deep trolling in this zone can be productive, especially around points, reef passages, offshore banks, and areas where tuna schools are frequently found. The best times are just before dawn and just after sunset.

There is some evidence to suggest that the fish follow the approximate path of a given bottom contour while swimming. Recent research in Hawaii suggests that large bigeye and yellowfin swim along the 70 metre (40 fathom) bottom contour, which corresponds to the lower levels of the 'mixed' layers of surface ocean waters. A possible fishing strategy might therefore be to try to follow the depth contour where a strike occurred.

**FOLLOWING CONTOURS**



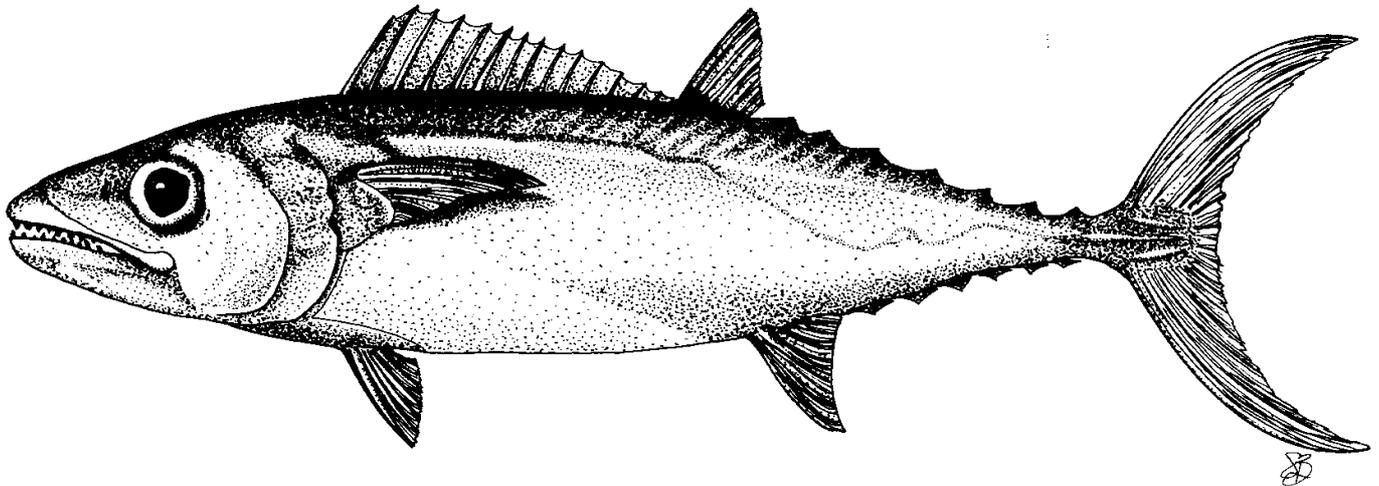
**FADs**



One of the most significant developments in Pacific fisheries in recent years is the widespread use of fish aggregation devices, or FADs (see Section 5F) to attract and hold surface schooling tunas in a given area. However, it is only now being realised that FADs seem to be at least as effective, and maybe even more so, in aggregating deep-swimming tunas. Very little work has so far been done to test the effectiveness of deep-trolling around FADs, but the potential appears to be there, and this is a fishery which shows promise for the future.

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### SECTION D: DOGTOOTH TUNA



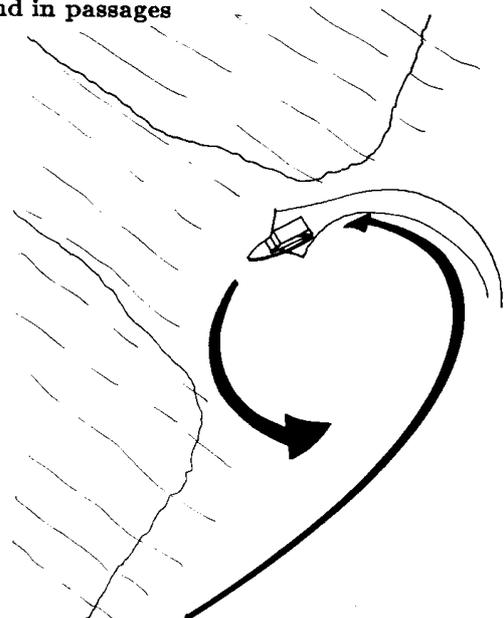
**Dogtooth (*Gymnosarda unicolor*)**

Unlike the other tuna species found in the Pacific, the dogtooth (*Gymnosarda unicolor*) is not free-ranging in its habits, but lives in association with barrier and offshore reefs. It forms small pods or groups of a few individuals, and, though not aggressive, is curious about divers, often approaching them closely to investigate them. Dogtooth flesh is light pink or nearly white, not red and bloody like that of most other tunas. This species can attain weights of over 130 kg (285 lbs), but 30 kg (65 lbs) or less is more usual.

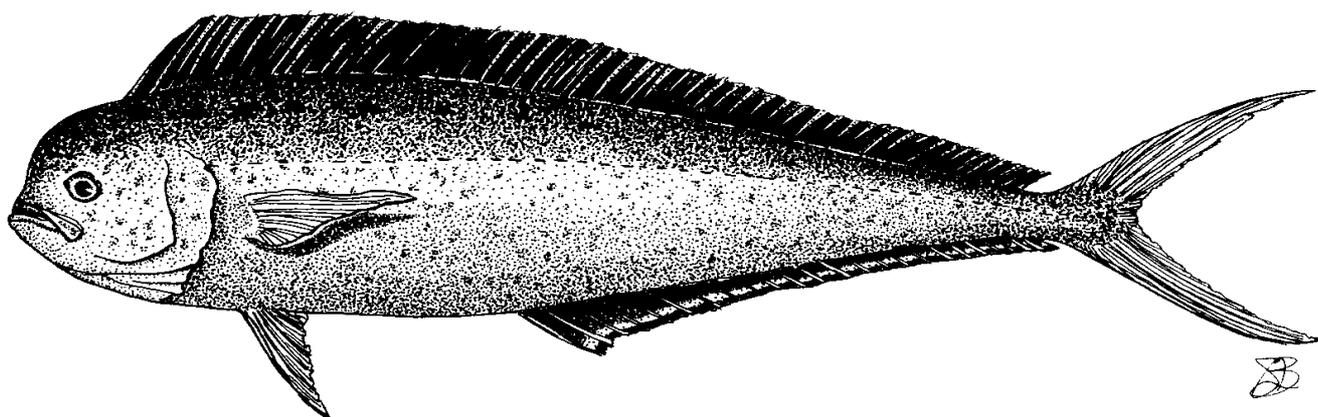
The areas around reef passages seem to be favourite haunts of dogtooth tuna, and they are often taken there, especially at first and last light. Whenever a dogtooth is caught, it is almost certain that more are in the same area. Circling the spot will frequently produce one or more subsequent strikes, often before the first fish has been boated. However, even moderate fishing pressure will rapidly deplete local dogtooth populations, and initial high catches are unlikely to be maintained.

#### **PASSAGES**

**Dogtooth are often found in passages**



**Circling in the pass after catching a dogtooth will often produce more**



**Dolphin Fish (*Coryphaena hippurus*)**

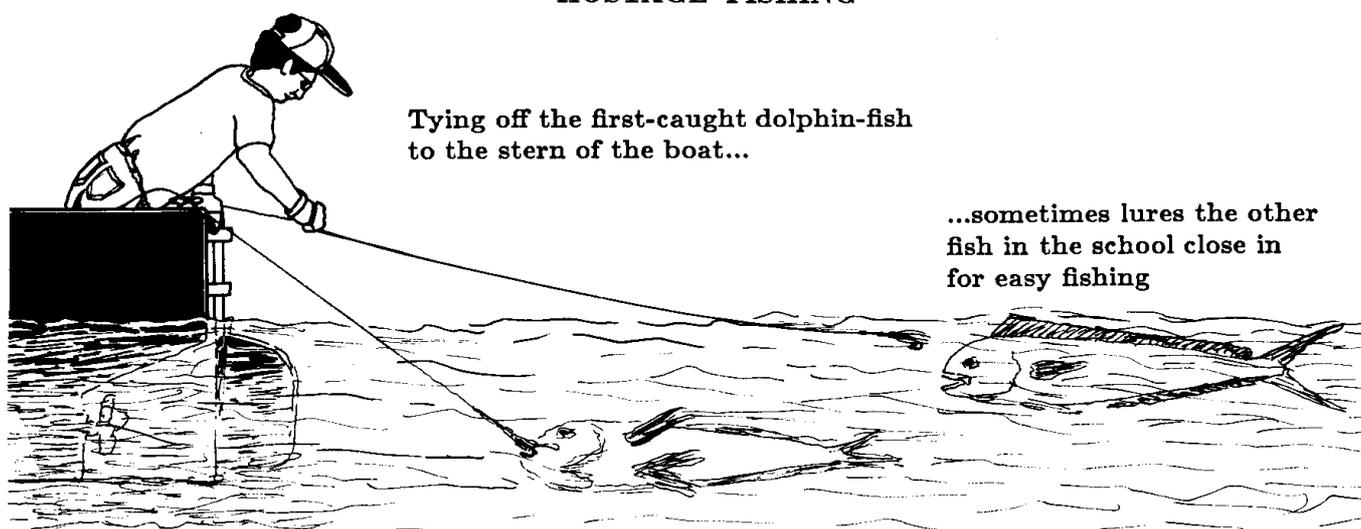
The dolphin fish (*Coryphaena hippurus*), also known as mahimahi and dorado, is an offshore pelagic species which can attain weights of over 50 kg (110 lbs), although 15 kg (33 lbs) or less is more usual. Adult males are distinguished by their large hump-like forehead. The fish are a brilliant yellow-green in life, but undergo vivid colour changes, through electric blue and pearly white, after being boated.

This species forms schools which can consist of just a few or of many hundred individuals. The schools are often mixed with tuna and associated species, and are frequently followed by birds. Dolphin fish seem especially fond of following floating objects as they drift, and are usually to be found in numbers around fish aggregation devices, where they are often the first fish to strike.

Dolphin fish have a distinctive striking behaviour. They can often be seen when they first sight the lure from a distance: the fish 'lights up' an electric blue and streaks through the water, with its forehead and dorsal fin above the surface, to attack the lure. The strikes are almost always from the side, rather than from behind or ahead. The dolphin fish will sometimes keep on going in the same direction after being hooked, leaping over other lines before reversing direction and swimming back under them. Dolphin fish are notorious line-tanglers, especially when two or more strike at the same time.

When a dolphin fish is hooked and hauled in, other fish from the same school may follow it right up to the stern of the boat. Rather than bring this first fish aboard immediately, some fishermen tie off the line so that it is towed just behind the stern. This keeps the school close to the boat and allows the following fish to be hooked and brought in rapidly using very short lines. This method sometimes allows the fishermen to 'clean up' the entire group of following fish, although there is always the chance that the first fish hooked -which is often the biggest -will break off and be lost.

### 'HOSTAGE' FISHING

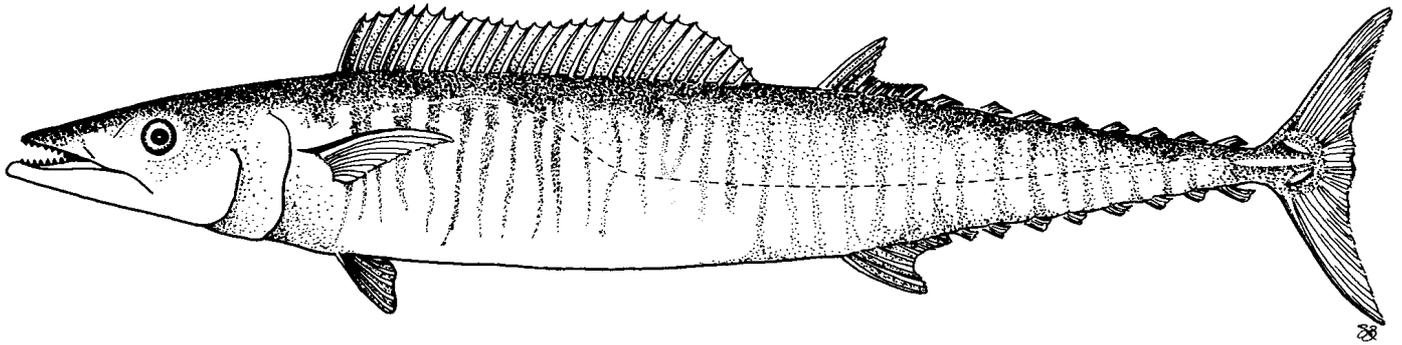


**Tying off the first-caught dolphin-fish  
to the stern of the boat...**

**...sometimes lures the other  
fish in the school close in  
for easy fishing**

## CHAPTER 7: COMMONLY CAUGHT FISH

### SECTION F: WAHOO



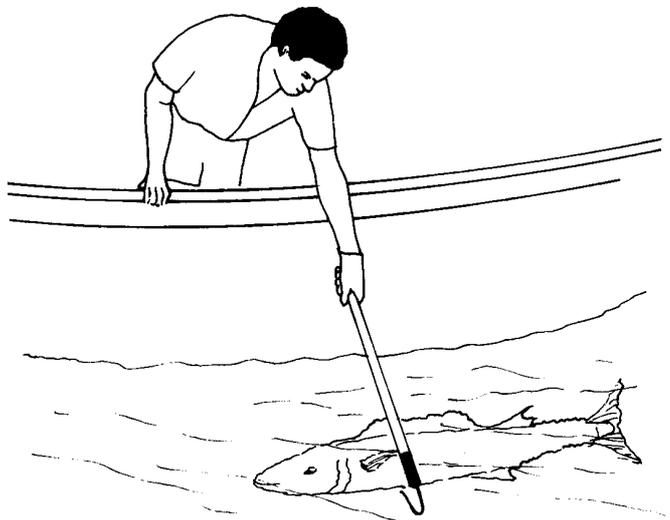
**Wahoo (*Acanthocybium solandri*)**

The wahoo (*Acanthocybium solandri*) is a free-ranging pelagic species found both close to barrier reefs and coastal areas, and many miles offshore. It tends to be solitary or form loose aggregations of small numbers of fish, rather than schooling in the true sense of the word. It is a seasonal fish in most areas outside the equatorial zone. Trolling success for wahoo is often related to the state of the tide, especially when fishing close inshore. The maximum size is over 80 kg (175 lbs), but fish are more commonly in the 10-30 kg (22 to 65 lbs) range.

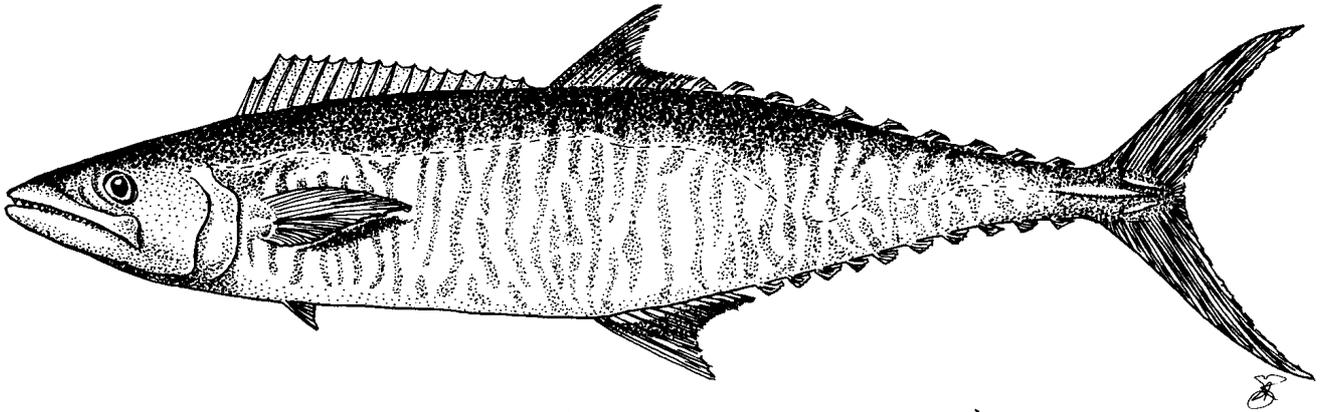
Wahoo are highly prized sport fish, much sought after by big game fishermen because of the excellent fight they put up when hooked. This species is one of the fastest fish in the ocean, and will swim for short periods of time at speeds of over 50 knots (75 km/hour). It is a voracious feeder with razor sharp teeth that cause heavy damage to bait and lures. Wire or cable traces are essential when catching this species, as with so many fish, natural baits are often more effective than artificial lures when wahoo trolling.

Wahoo can sometimes be found basking at the sea surface, apparently asleep. If surprised by an approaching boat, they will 'light up' an electric blue colour, and dart away. However, by drifting or paddling quietly, a small boat with its engines off may be able to approach the fish close enough to spear or harpoon it, or even gaff it aboard.

#### **BASKING WAHOO...**



**...can sometimes be harpooned or gaffed aboard while they are 'sleeping'**



**Spanish mackerel (*Scomberomorus commerson*)**

This species (*Scomberomorus commerson*) is found in the western Pacific, as far east as Wallis (Uvea) Island. Several other related *Scomberomorus* species occur around Australia and in the gulf waters of Papua New Guinea, but do not extend significantly into the Pacific islands region.

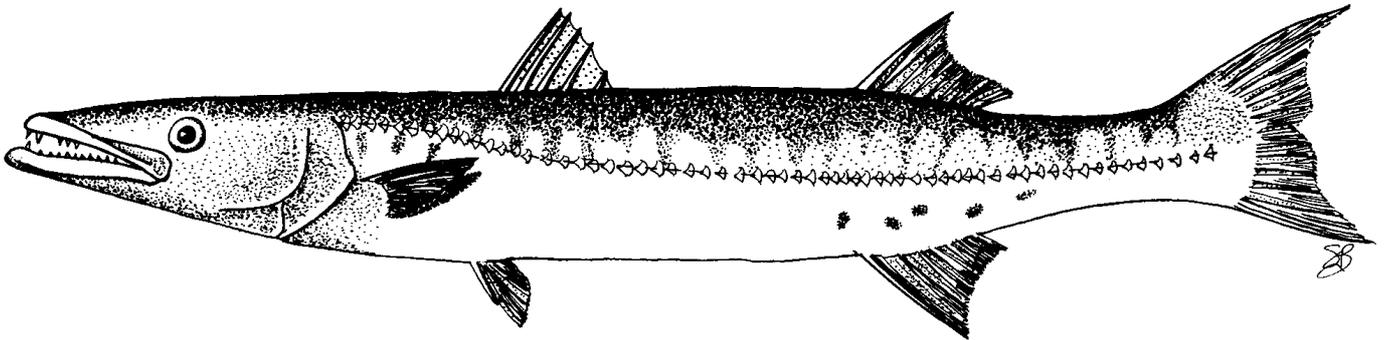
Spanish mackerel is found year-round where it occurs, but there is a distinct season during the warmest months of the year, when it is caught in much greater numbers than at other times. Fish are taken both inside lagoon areas, and along the drop-off of barrier reefs, where larger numbers and bigger individuals are usually caught. Reef passages can also be productive areas for this species.

Spanish mackerel form aggregations which may contain from a few to a couple of hundred individuals. A 'standard' bait is small garfish rigged on two or three ganged hooks, as shown in Section 4D, and this is trolled just below the surface using a weighted line. When a strike occurs, more strikes can usually be encouraged by pulling in or jiggling the other trolling lines as the first hooked fish is being hauled. Sometimes, one or more of its fellows will follow the first hooked fish right up alongside the boat as it is hauled in.

Large individuals of Spanish mackerel have been demonstrated to be ciguatoxic (carrier of fish toxicity) in some localities, and this may be true throughout their range. For the most part, however, this is not a problem and Spanish mackerel are prized eating fish in most places where they occur.

## CHAPTER 7: COMMONLY CAUGHT FISH

### SECTION H: BARRACUDA AND SEAPIKE



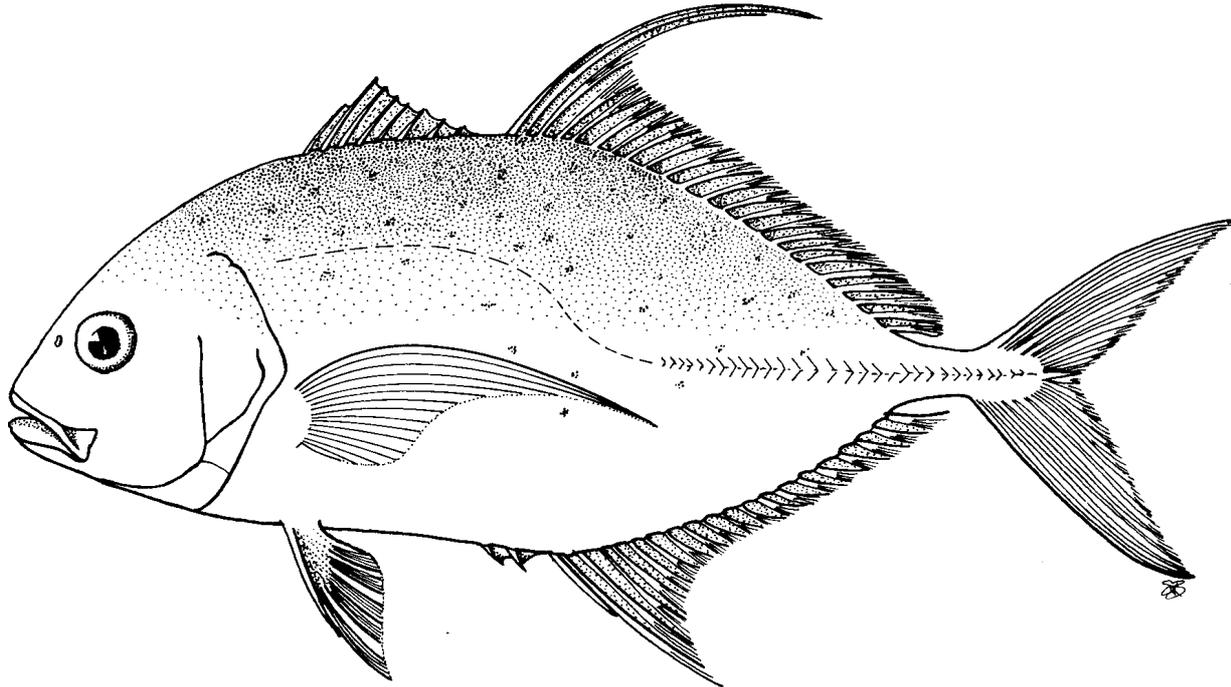
**Great barracuda (*Sphyraena barracuda*)**

There are several species of the genus *Sphyraena* normally caught trolling. In general, small individuals a metre or less in length are referred to as seapike, larger individuals as barracudas.

The true or great barracuda, *Sphyraena barracuda*, is found in both inshore and offshore waters, the largest individuals (which can be over 60 kg (135lbs)) being solitary and oceanic in nature. This species is day-active and may be caught trolling even during the middle of the day, when other species often do not bite.

A second species which also reaches large sizes is the slender sea-pike, *Sphyraena jello*. This species is only found in coastal areas and not in offshore waters. The slender sea-pike is the species of barracuda most often implicated in attacks on divers and swimmers. However, it appears to be principally a night-feeder and is usually caught when lagoon-trolling at dawn and dusk, rather than during the daytime.

Several other species are also found, almost exclusively in inshore waters, none of which usually exceed 10 kg (22 lbs) in weight. Most seapike and barracuda species have been implicated in cases of ciguatera fish poisoning at some time or another. In locations where ciguatera is a problem, it is safest not to eat fish over 5 kg (11lbs) in weight. These can be used instead for bait as shown in Sections 4E and 4F.



**Trevally (*Caranx ignobilis*)**

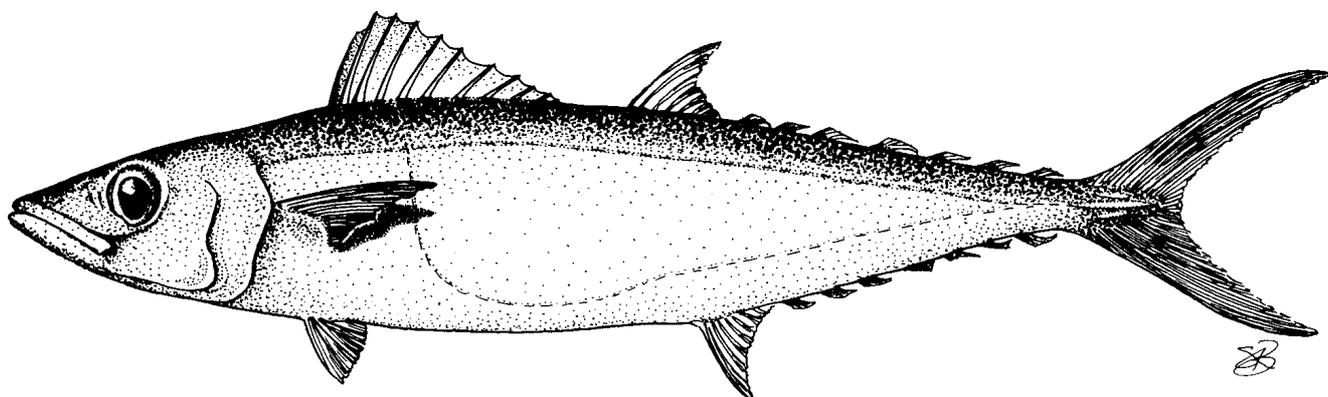
Many different species of trevally in the genera *Caranx* and *Carangoides* are found throughout the tropical Pacific islands, and most are susceptible to being caught by trolling. Some, such as the giant trevally (*Caranx ignobilis*) and black trevally (*Caranx lugubris*) attain sizes up to about 50 kg (110 lbs) and 20 kg (45 lbs) respectively. For the most part, however, trevallies weigh in at 10 kg (22 lbs) or much less.

Almost all trevally species are coastal or inshore in their habitat. Many species form schools of scores of individuals which may feed voraciously at times. Very large individuals, however, tend to be solitary or travel in very small groups.

Most trevallies are predatory, feeding on small reef-associated fish or other marine animals. They are most often caught trolling using small lures, especially metallic spoons or spinners. In general, trevallies have very small teeth and are not usually capable of biting through a nylon line.

## CHAPTER 7: COMMONLY CAUGHT FISH

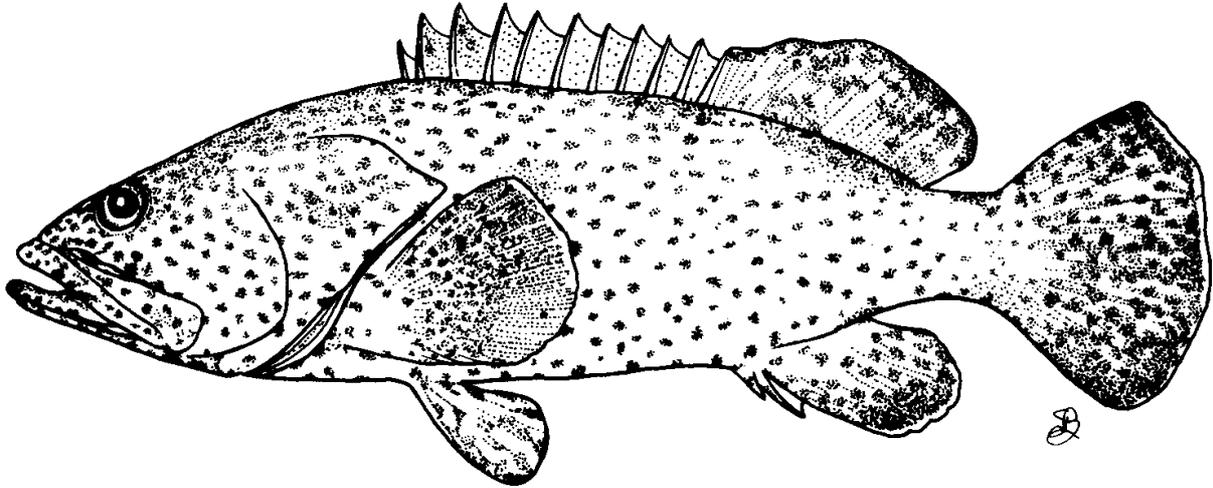
### SECTION J: DOUBLE-LINED MACKEREL



**Double-lined mackerel (*Grammatocynus bicarinatus*)**

It is now recognised that there are two species of double-lined mackerel (also called shark mackerel), although until recently both were thought to be the same. The true double-lined mackerel, *Grammatocynus bicarinatus*, is the larger of the two, reaching a maximum weight of at least 15 kg (33 lbs). Its range is thought to be restricted to the western Pacific ocean, but several reports from countries as far east as Tokelau dispute this. The smaller species, *Grammatocynus bilineatus*, or mackerel scad, reaches much lower maximum weights of 3-4 kg (6-9lbs). It is distributed Pacific-wide and, like the double-lined mackerel, occurs in inshore and lagoon waters.

Both species can be taken by trolling small feather or octopus lures in coastal areas, and are excellent themselves as trolling bait for bigger fish (see Sections 4B and 4E).



**Grouper (family Serranidae)**

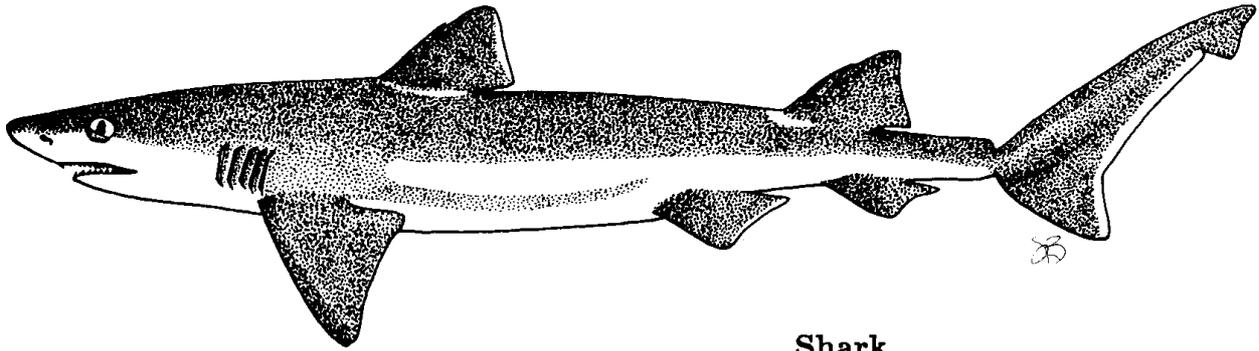
Coral trouts and groupers (family *Serranidae*) are a diverse group of fish, comprising very many different species, all of which live in association with coral reefs, or on reefy or rocky bottoms in coastal areas. The coral trouts tend to be more pelagic in nature and are more often taken by trolling than the related groupers, which tend to be slower-swimming and to feed among the rocks and coral.

Coral trouts and groupers are usually caught when surface or sub-surface trolling close in to barrier and offshore reefs. They will usually attack large, brightly coloured, active lures such as Smiths jigs, although many other baits and lures are also effective.

In some areas, these fish are highly favoured by the local market, while in others they have been convincingly implicated in cases of ciguatera fish poisoning. In areas where ciguatera is known to be a threat, specimens over 5 kg (11lbs) should not be eaten.

## CHAPTER 7: COMMONLY CAUGHT FISH

### SECTION L: SHARKS



**Shark**

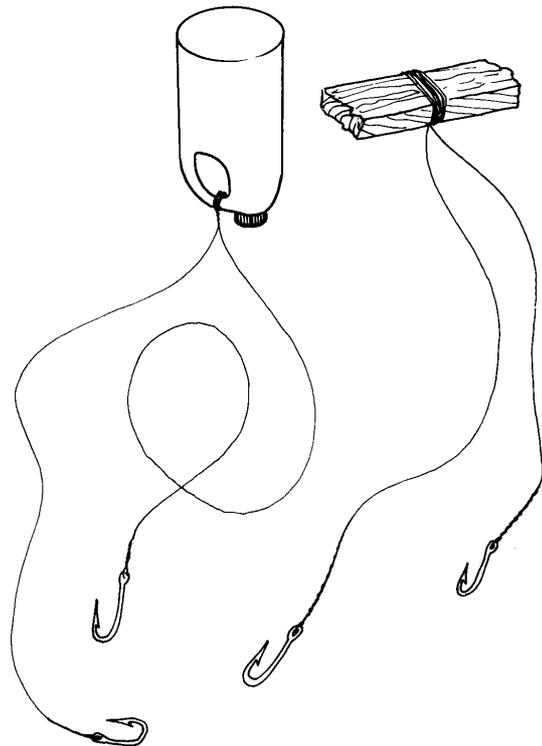
Sharks are more of a nuisance than a target species to most troll fishermen. They are not usually caught directly, as they will seldom attack a trolling lure, although some species will sometimes attack a natural bait. However, they are sensitive to the panic signals emitted by a hooked fish, and will often move in to attack it before it can be boated. In some cases, the shark becomes hooked itself, but more often than not it eats most or all of the hooked fish without being caught. Since the largest fish usually take the longest time to bring into the boat, these are often the ones which are lost to shark attack, a fact which is doubly frustrating to the fisherman.

Sharks can be a real nuisance when tuna-trolling, especially around FADs, where substantial resident shark populations seem to build up. Since tuna-trolling often relies on the use of monofilament nylon lines to be fully effective, an attack on a hooked fish by a shark usually results in the line being bitten through, and the consequent loss of the lure. If this is happening too frequently, there is usually no choice other than to switch to wire lines to save gear, even though this will reduce the strike rate by the tuna.

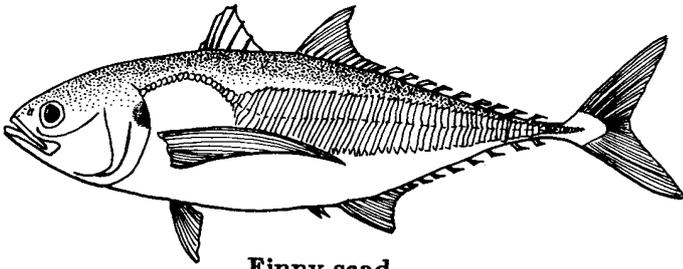
One way to reduce the shark nuisance is to rig several large single hooks on short wire or cable traces, and to the other end of each fix a block of wood, a bottle, or some other floating object. When sharks start to attack your trolled fish, bait the hooks and throw them overboard with the floats attached. The sharks will often attack and swallow the baits, and from then on have to contend with a piece of wood or a bottle hanging from its mouth. This will usually prevent it from attacking your trolled fish, at least for a while, and may ultimately cause the shark to die of starvation.

#### **TO GET RID OF SHARKS**

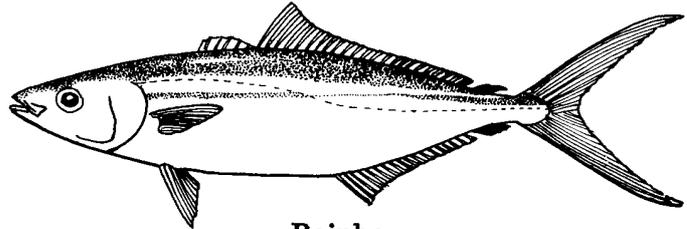
**Rig single hooks on floats or old bits of wood...**



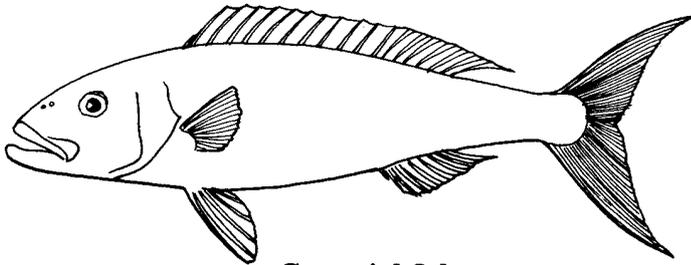
**...bait them and throw overboard to occupy sharks**



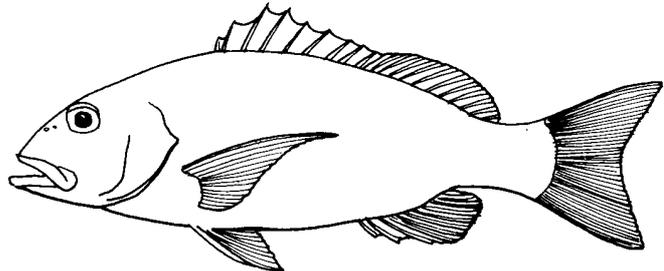
**Finny scad**  
(*Megalaspis cordyla*)



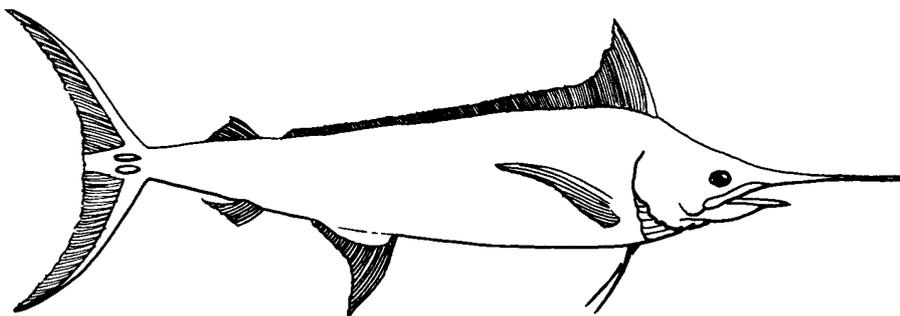
**Rainbow runner**  
(*Elegatis bipinnulata*)



**Green jobfish**  
(*Aprion virescens*)

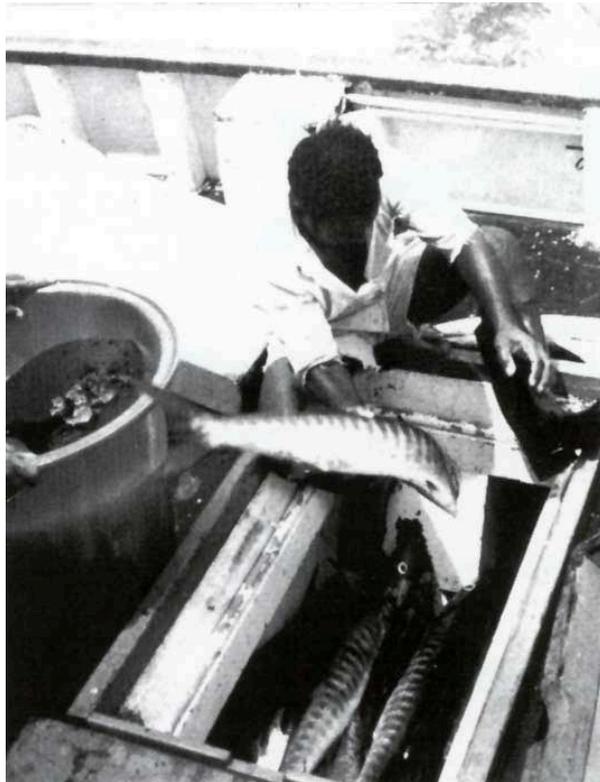


**Red sea bass**  
(*Lutjanus bohar*)



**Striped marlin**  
(*Tetrapturus audax*)

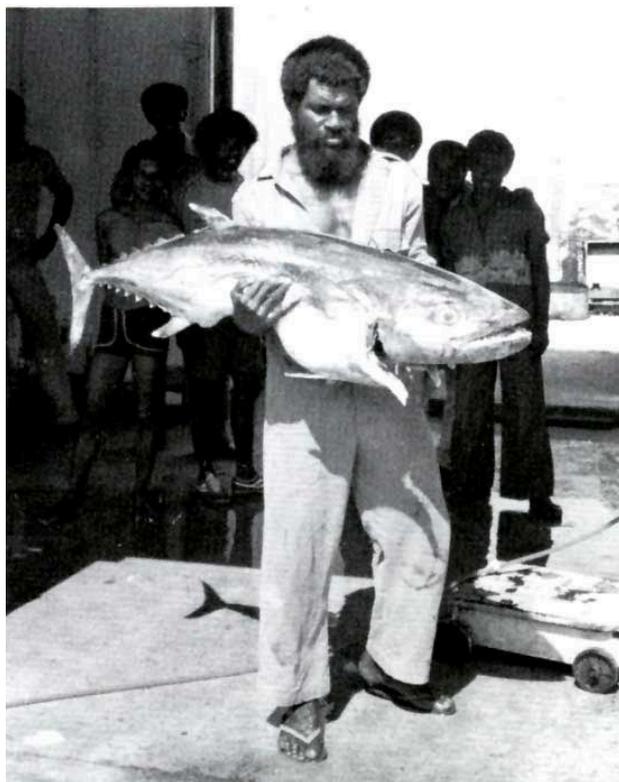
A wide range of other species, not already referred to, can often be caught trolling. These include various reef associated snappers, especially the red sea bass (*Lutjanus bohar*) and the green jobfish (*Aprion virescens*): several non-trevally carangids, particularly the pelagic rainbow runner (*Elegatis bipinnulatus*), and some inshore species such as the finny scad (*Megalaspis cordyla*): and the oceanic billfish group -spearfish, swordfish, sailfish and marlins. All these species can be important parts of the catch in certain localities, or in particular specialised fisheries. However, on a region-wide basis, they are less important than the species already discussed.



*Location: Great Sea Reef, Fiji*

*Photo: L.B. Chapman*

**On board icing down of the catch**



*Location: Lautoka, Fiji*

*Photo: L.B. Chapman*

**A good-sized dogtooth caught trolling**