

# Contents

---

About the authors	6
Acknowledgements	8
Introduction	11
How to use this book	14
Find your fish	16
Photographing fish – why	20
Photographing fish – how	21
Don't be fooled – identification pitfalls	24
Fish habitats	28
Sharks	35
Free-swimming silvery fishes in open water	45
Free-swimming silvery fishes near the seabed	59
Colourful fishes near the seabed	81
Flattened fishes on the seabed	99
Non-flattened fishes on the seabed	149
Changing fish distributions	266
Parasites of fish	269
Associations with other species	272
Protected species and conservation status	274
Where to find out more	276
Seasearch surveying and recording	278
Biosecurity and non-native species	278
Taxonomic list of fishes included in this guide	280
Index	284



# *Galeorhinus galeus* Tope

(Linnaeus, 1758)



CH

**Above** This close view shows the plain grey colour of the upperside, the paired pelvic fins and the anal fin set well back near the lower caudal fin. Off Clovelly, north Devon.

**Left** A small Tope swims swiftly past a baited video camera. Jersey, Channel Islands.



SBI

**GENERAL DESCRIPTION** This small shark has a pointed, moderately long snout and two dorsal fins, the second much smaller than the first (less than half the height). Like other sharks, it has an asymmetrical caudal fin, although Tope have a prominent, triangular lower caudal lobe. It is usually a dull, uniform, predominantly grey colour, perhaps with brown overtones on the dorsal surface and flanks; lighter underneath. Tope hunt for small fishes in midwater and crustaceans and molluscs on the seabed. They can be found in small groups which is why the species is also known as the School Shark.

**KEY FEATURES** Slender, greyish shark with a small and inconspicuous second dorsal fin.

**SIMILAR SPECIES** Smoothhounds (opposite) are similar in size and colour, but their two dorsal fins are similar in height. Smoothhounds also prefer to remain on or near the seabed, only occasionally being seen in midwater. Spurdog (p. 39) have prominent dorsal spines and lack the anal fin seen underneath the second dorsal in Tope.

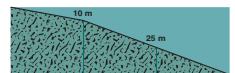
**ABUNDANCE AND DISTRIBUTION** Found all round Britain and Ireland, generally in water less than 50m deep, with some southward migration for the winter. Classified as Vulnerable in European waters.



adult



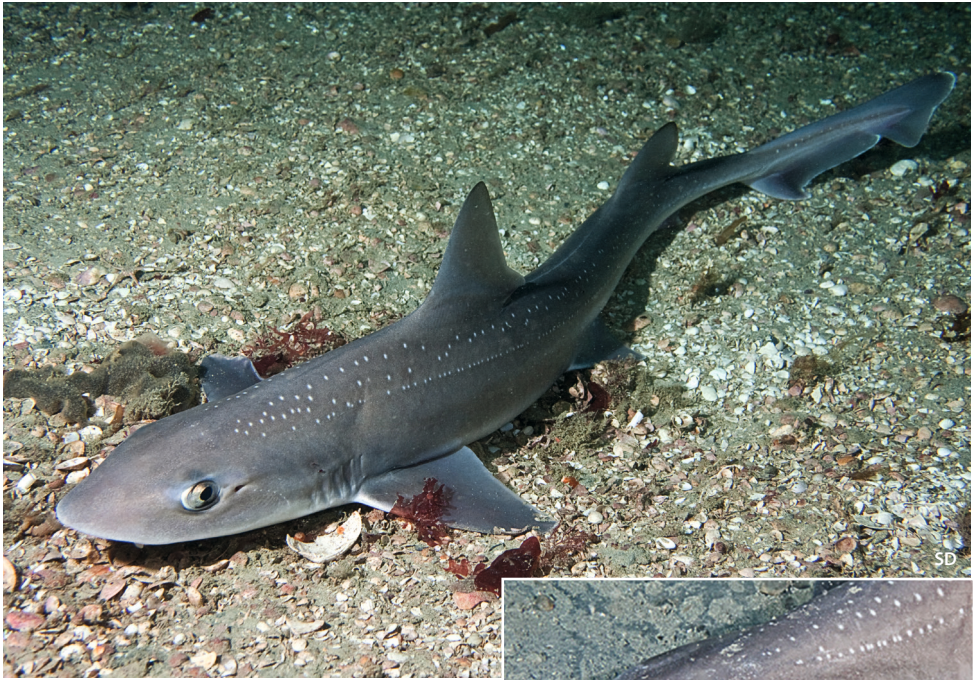
juvenile





# *Mustelus asterias* Starry Smoothhound

Cloquet, 1819



**Above** Note the characteristic small white spots scattered on the head and dorsal surface. Sark, Channel Islands.

**Right** Showing the large golden eye with black pupil. Kimmeridge, Dorset.

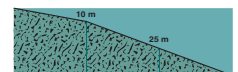
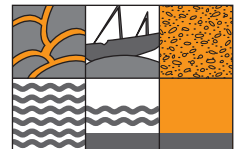


**GENERAL DESCRIPTION** This small, slender shark grows up to 1.4m in length. The two almost identically sized dorsal fins are large for the size of the fish and there is an anal fin immediately below the second dorsal. It is a steel grey or brownish colour with a scatter of numerous small, evenly sized white spots on the dorsal surface and upper flanks above the lateral line. The eye is golden or yellowish. It gives birth to live young and can reach 20 years old. This shark occurs on sandy, gravelly seabeds and it may also be seen in rocky areas in water depths from less than 5m to over 500m.

**KEY FEATURES** First and second dorsal fins about the same size. Anal fin present. Numerous white spots on dorsal surface. Golden or yellowish eye.

**SIMILAR SPECIES** Spurdog (p. 39) have a large spine at the front of each dorsal fin and lack an anal fin. The Smoothhound *Mustelus mustelus* (not described separately) is an almost identical species but lacks spots. However, there is considerable confusion between the two smoothhounds: if the description fits, but white spots are lacking, then record as '*Mustelus* sp'.

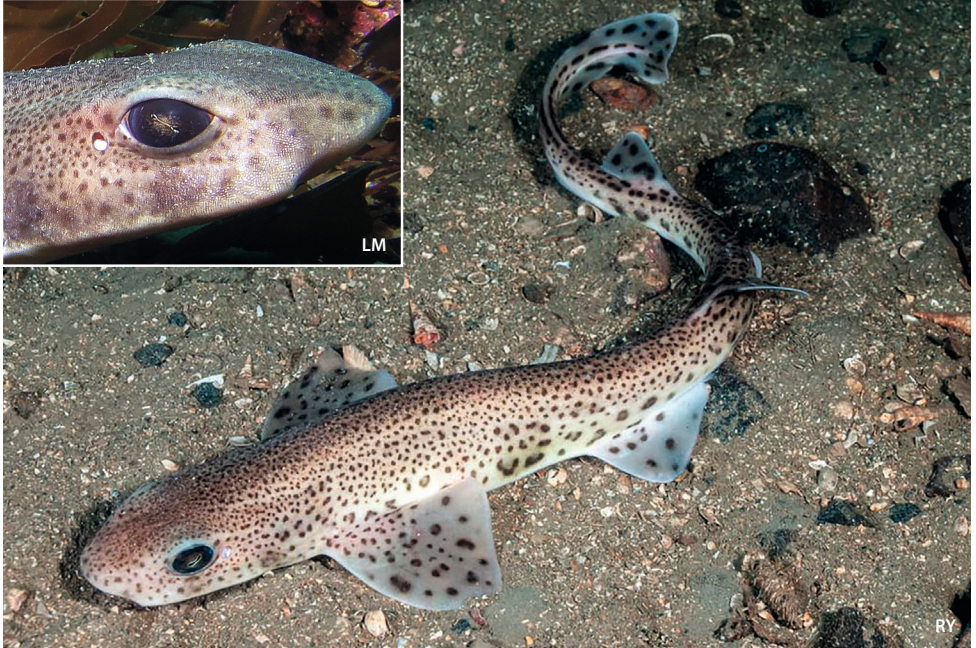
**ABUNDANCE AND DISTRIBUTION** This fairly common shark has a western and southern distribution around England as far north as East Anglia. It is also found around Wales, with many records from all throughout the Irish Sea, as well as a few reports from western Ireland. In European waters, *Mustelus asterias* is listed as Near Threatened, while *Mustelus mustelus* is listed as Vulnerable.



# Scyliorhinidae Catsharks

Catsharks have a long body with two small dorsal fins set well back, both behind the pelvic fins, unlike most other sharks whose first dorsal fin is positioned well before the pelvic fins. They are often found lying on the seabed, in a very wide range of habitats. These small sharks have long been known as dogfish which is technically incorrect. Although this is a huge, worldwide family, only two species are generally found within diving depths around Britain and Ireland; these are described in detail below. Recently hatched juvenile catsharks are very pale in colour with indistinct darker spots and bands and it is not possible to distinguish the two species at this stage in their development (see p. 35). They take on adult characteristics at about 20cm in length.

## *Scyliorhinus canicula* Smallspotted Catshark (Linnaeus, 1758)



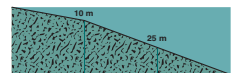
**Main** Larger spots on the fins contrast with small spots all over the body. Loch Sunart, Highland. **Inset** The almost black eye typical of this species. Isle of Man.

**GENERAL DESCRIPTION** Formerly known as the Lesserspotted Dogfish. This is a slim, lightly built catshark which grows to about 1m in length. Background colour is generally pale brown or grey over which many small, dark brown, grey or almost black spots are densely scattered all over the body. Some spots on the fins are larger than those on the body. Adults have very dark, almost black eyes. This catshark can be found lying on the seabed in a wide range of habitats from very shallow water to depths of over 450m.

**KEY FEATURES** Long, slim, seabed-living shark with two small dorsal fins set well back. Covered in small dark spots, larger spots on fins.

**SIMILAR SPECIES** The Nursehound is a more heavily built shark with fewer, larger spots.

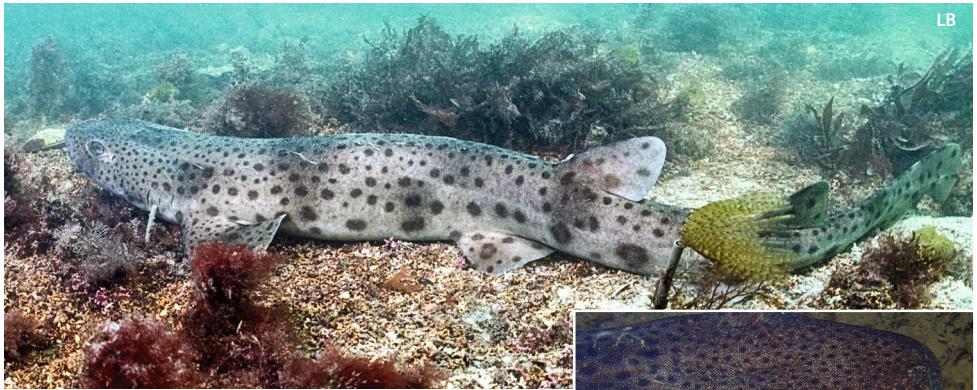
**ABUNDANCE AND DISTRIBUTION** The Smallspotted Catshark is common and found all around British and Irish coasts, although there are fewer records from the east coasts of England and Scotland.





# Scyliorhinus stellaris Nursehound

(Linnaeus, 1758)



**Above** Large spots on all fins and over the body characterise this catshark. Falmouth, Cornwall.

**Right** The greenish amber eye colour. Lyme Bay, Dorset.

**GENERAL DESCRIPTION** Also known as the Greaterspotted Catshark or Bull Huss, this catshark grows to a maximum length of just over 160cm and has a stocky, solid looking body with a blunt snout. Background colour is generally light greyish or brownish and there are large, dark brown spots all over the body and fins. Some spots may merge into blotches or may be in closely set groups of three or four spots. Spots on the fins are a similar size to those on the body. The eye colour is greenish or amber. This catshark can be found lying on the seabed in a wide range of habitats from about 10m to over 350m.

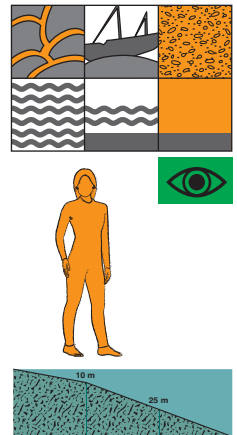
**KEY FEATURES** Long, stocky body with two small dorsal fins set well back. Covered in large, dark spots and blotches which are the same size on the body and fins.

**SIMILAR SPECIES** Smallspotted Catshark, but a catshark over about 100cm in length is likely to be a Nursehound. The main distinctions between the two species are size of spots and eye colour.

**ABUNDANCE AND DISTRIBUTION** The Nursehound is less commonly recorded by divers than the Smallspotted Catshark and has a southwest distribution in Britain and Ireland with numerous records from the Irish Sea. Classified as Near Threatened in European waters.



A juvenile showing that even small individuals about 20cm in length can be confidently identified. Off Folkestone, Kent.







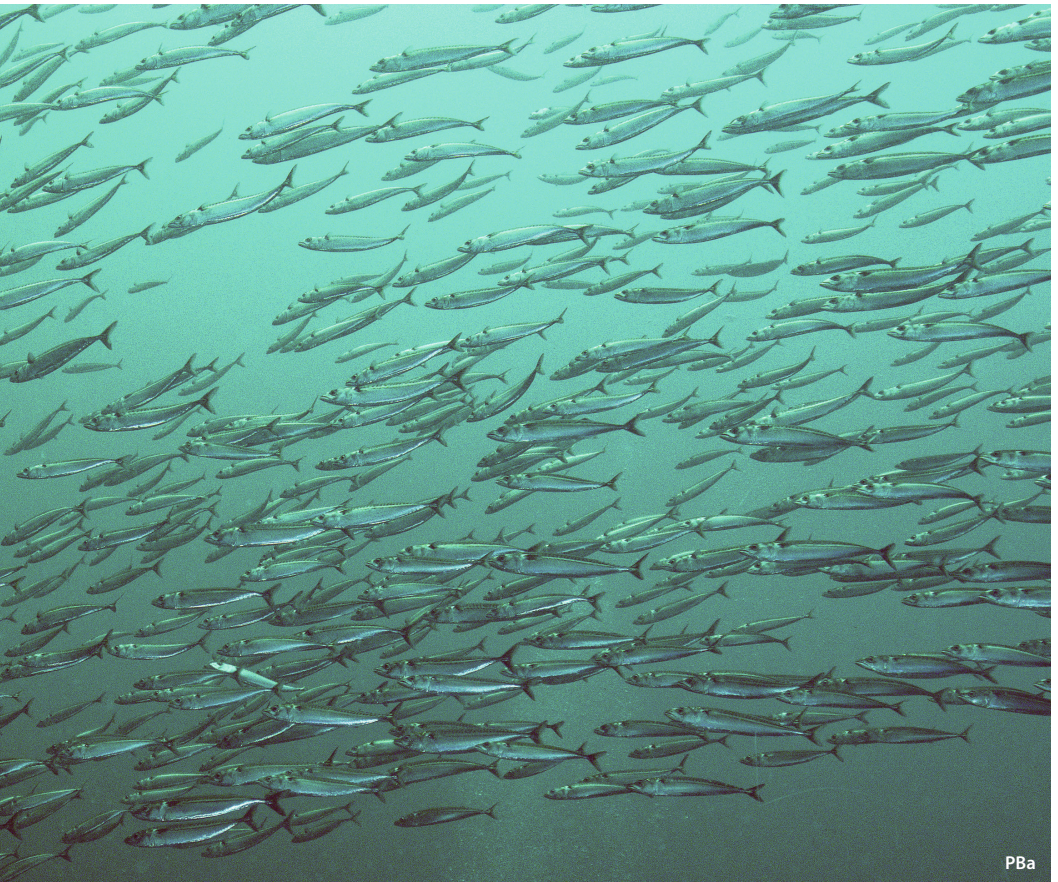
PBa

A close approach to a silvery shoal of Atlantic Horse Mackerel *Trachurus trachurus*. Tory Island, Donegal.

# Free-swimming silvery fishes in open water

Hanging about in midwater is not something most divers do much of – except perhaps on decompression and safety stops. However, many fishes spend their entire lives swimming and feeding in open water, leading a so-called ‘pelagic’ existence, with little if any connection to the seabed. With nowhere to hide, most live within the protection of large shoals or schools and are camouflaged by ‘countershading’ with a darker dorsal surface and silvery white ventral surface. Flowing, silvery shoals of small fishes such as herring, mackerel and sandeels are not easy to identify. Photographs always help (even to confirm that a positive identification is not possible). Noting behaviour is also helpful e.g. the sinuous swimming of sandeels.

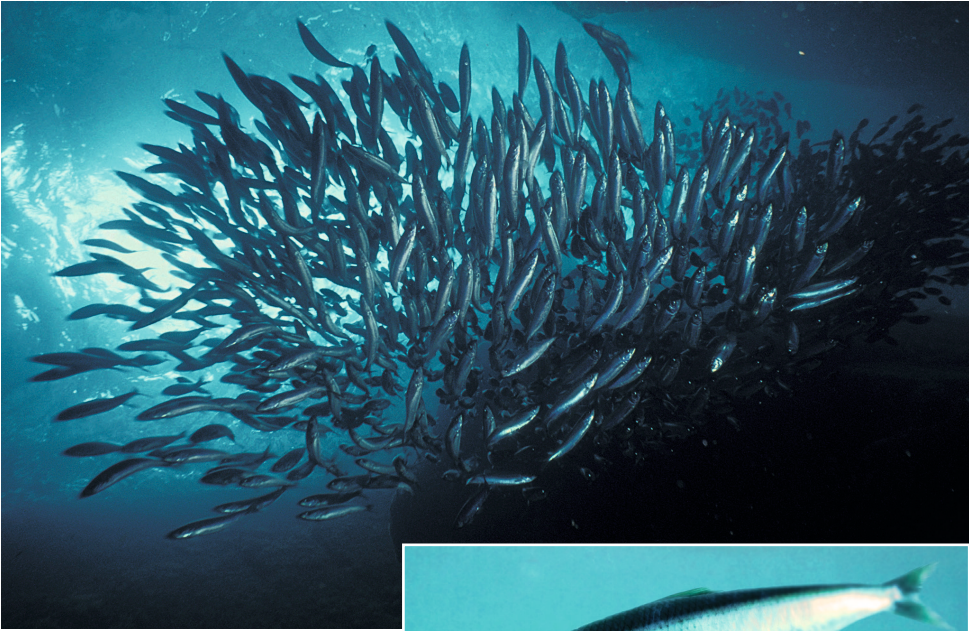
Not all pelagic fishes live in large shoals in open water, especially those not reliant on plankton for food. For example, European Seabass *Dicentrarchus labrax* are predatory fish and small schools often hunt in the vicinity of rocky reefs. Open water sharks have no need for the protection provided by shoaling, but countershading helps disguise them from their prey.



PBa

A shoal of Atlantic Horse Mackerel *Trachurus trachurus* swims above the photographer. Kinlochberrie, Highland.





Above A shoal of Atlantic Herring *Clupea harengus* seen from below in a cave. Scotland.

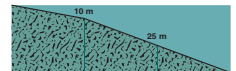
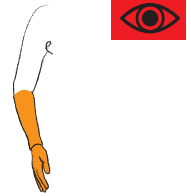
Right Unmistakably an Atlantic Herring with all the distinguishing characteristics clearly visible.

**GENERAL DESCRIPTION** Almost always encountered in shoals, the Atlantic Herring is a slender, highly reflective, silvery fish with a laterally compressed body. It has a prominent, up-curved lower jaw, a single short dorsal fin about half way along the dorsal surface, a deeply forked caudal fin and no visible lateral line. The dorsal surface is a dark, greenish blue, with flanks and ventral surface being silvery white. The other three common herring-like species (Sprat, Pilchard and Anchovy, see opposite) found around Britain and Ireland have broadly the same shape and appearance as Atlantic Herring, although the latter can be much larger, reaching up to 40cm. There are also subtle differences in colouring (Atlantic Herring and Pilchard tend towards green, whereas Sprat and Anchovy are more blue). If identity is uncertain, record as ‘Clupeiformes’ or ‘shoals of small silvery fishes’.

**KEY FEATURES** Intensely silvery fish that live and swim in shoals in open water. Single short dorsal fin (very difficult to see underwater). Grows much larger than Sprat, Pilchard or Anchovy.

**SIMILAR SPECIES** The four common species of herrings (Clupeiformes) found around Britain and Ireland (Herring, Sprat, Pilchard and Anchovy) are very difficult to tell apart. Only Atlantic Herring grow larger than 20cm. The shoals of juveniles commonly seen in sheltered bays are usually undistinguishable from the other three species to divers underwater. Sand Smelt in shoals looks similar, but has a distinct iridescent or dark line along its flanks (two dorsal fins but rarely visible in shoaling fish).

**ABUNDANCE AND DISTRIBUTION** Common all around Britain and Ireland, but as they live in open water, shoals are rarely encountered by divers. Shoals of juveniles frequent sheltered bays.





***Sprattus sprattus* Atlantic Sprat** (Linnaeus, 1758)  
***Sardina pilchardus* European Pilchard** (Walbaum, 1792)  
***Engraulis encrasicolus* European Anchovy** (Linnaeus, 1758)



FD

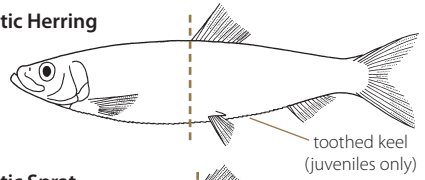


JaG

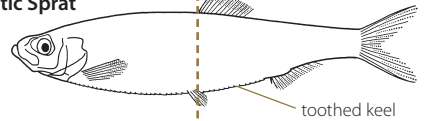
Top An Atlantic Sprat in a rockpool. Aberystwyth, Ceredigion.

Above Shoal of Atlantic Sprat. Loch Carron, Highland.

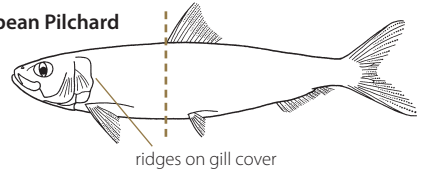
**Atlantic Herring**



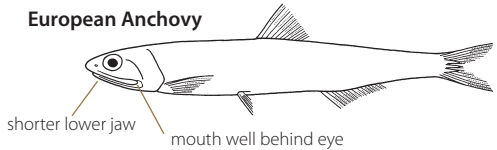
**Atlantic Sprat**



**European Pilchard**



**European Anchovy**



**GENERAL DESCRIPTION** These three species are all small, silvery, shoaling fishes and share most of the characteristics of their larger relative, the Atlantic Herring (opposite). Shoals of 'herring' are very difficult to tell apart underwater, but if a close-up photograph of an individual or individuals is achieved, a clear, side-on view may allow identification beyond family level, using the features shown above. Shoals swimming near the bottom may flow round a stationary diver (until they exhale). At night, individuals may be more scattered and swim near the seabed, giving better photographic opportunities.

**KEY FEATURES AND SIMILAR SPECIES**

**Atlantic Sprat *Sprattus sprattus*** Very similar to, but smaller than Atlantic Herring and less likely to be seen inshore than juveniles of the latter. Dorsal surface a brighter blue than the greenish tinge seen in Atlantic Herring.

**European Pilchard (Sardine) *Sardina pilchardus*** Many (but not all) have a line of dark spots running along the flanks more or less in line with the eyes (these rarely show up underwater). Dorsal surface generally greenish. The gill cover has clear ridges radiating across it from behind the eye.

**European Anchovy *Engraulis encrasicolus*** Closely related to herrings but belongs to a different family (Engraulidae). A slender-bodied fish with a conical snout – the result of the lower jaw being much shorter than the upper; neither Sprat nor Pilchard have such an underslung jaw. The large mouth reaches well back behind the eyes. Colour silvery with a blue dorsal surface (sometimes called Blue Anchovy).

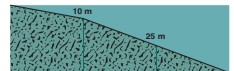
**ABUNDANCE AND DISTRIBUTION** All three species are common all around Britain and Ireland, though Pilchard and Anchovy are more common in southern parts.



group



species



# Ammodytidae Sandeels



The large size of these sandeels indicates they are probably greater sandeels *Hyperoplus* sp. Jersey, Channel Islands.

**GENERAL DESCRIPTION** Shoals of silvery sandeels are generally seen swimming close to, or some metres above, sandy areas of seabed. When close to the bottom they have a habit of diving head-first into the sand if approached. The five species are all long, slim fish, slightly laterally compressed, with a protruding lower jaw forming a pointed snout. The caudal fin is forked and a single dorsal fin runs nearly the length of the body. While the species can rarely be identified underwater, the arrow-like shape and behaviour should allow recording as 'Ammodytidae'. With a closer look and experience, the two 'greater' sandeels can be distinguished from the three 'lesser' sandeel species by their larger size.

## Greater sandeels

***Hyperoplus lanceolatus*** (Le Sauvage, 1824)

***Hyperoplus immaculatus***, also known as **Corbin's Sandeel**, (Corbin, 1950).

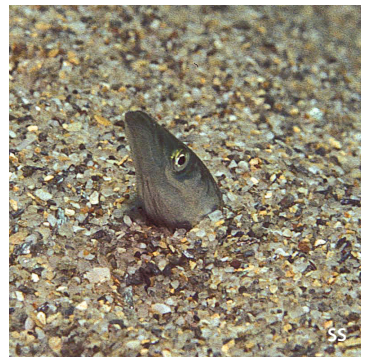
Any sandeel longer than 25cm or so can be recorded as '*Hyperoplus* sp.'. *Hyperoplus lanceolatus* has a black spot on either side of the snout (visible in reasonably close-up photographs) and is the one normally encountered in shallow water.

## Lesser sandeels

***Ammodytes tobianus*** Linnaeus, 1758

***Ammodytes marinus***, also known as **Raitt's Sandeel**, Raitt, 1934

***Gymnammodytes semisquamatus*** Smooth Sandeel (Jourdain, 1879)  
Small sandeels under 25cm long should be recorded as 'Ammodytidae' because they cannot be identified to species underwater and may be lesser sandeels or the young of greater sandeels.



A sandeel pokes its head out after diving into loose sand. Devon.



## Ammodytidae Sandeels (continued)



Sandeels over seagrass, includes a single Sprat *Sprattus sprattus*. Portland, Dorset.

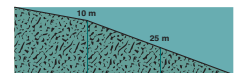
**KEY FEATURES** Long thin silvery fish, with a pointed snout that swim sinuously in shoals over sandy areas. May dive into the sand.

**SIMILAR SPECIES** Other small silvery shoaling fish such as Sand Smelt (p. 52) or Sprat (p. 47), but the elongated shape of sandeels and their sinuous swimming motion should allow this family to be identified.

**ABUNDANCE AND DISTRIBUTION** The species differ in detailed abundance and distribution from north to south in Britain and Ireland. In general, however, sandeels are common around all coasts.



Sandeels can often be recognised by their sinuous swimming style. Kinlochbervie, Highland.

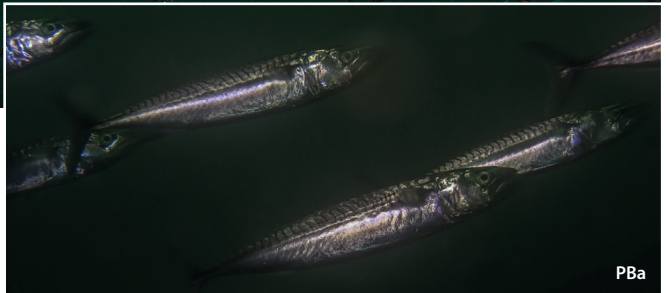






**Above** A school of Atlantic Mackerel feeding at the surface. The pattern on the dorsal surface is distinctive, even at a distance. Coll, Inner Hebrides.

**Right** An uncommon close encounter. St Abbs, Berwickshire.

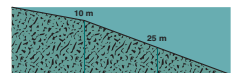


**GENERAL DESCRIPTION** Like other members of its family (Scombridae), the fast-swimming Atlantic Mackerel has a streamlined, spindle-shaped (rounded in cross-section and tapering at both ends) body, a narrow caudal peduncle and a deeply forked caudal fin. The second of the two widely separated dorsal fins is followed by a series of five small finlets, not easy to see underwater. Along the dorsal surface, above the lateral line, is a distinctive pattern of dark, zebra-like lines, on an iridescent blue to green background. Usually swimming in shoals and always aware of potential predators, Atlantic Mackerel are not easy to approach.

**KEY FEATURES** A slim fish with a distinctive pattern of dark, wavy lines on the dorsal surface and a silvery white ventral surface. Usually seen in open water, sometimes above kelp forests.

**SIMILAR SPECIES** The unrelated Atlantic Horse Mackerel (opposite) is a similar shoaling species but has a distinctive dip in the lateral line and a black spot on the gill cover. Atlantic Chub Mackerel *Scomber colias* (not described separately) is an occasional southern vagrant but rarely comes inshore.

**ABUNDANCE AND DISTRIBUTION** Although rarely seen by divers, this is a very common fish all around Britain and Ireland, moving inshore in summer.



# *Trachurus trachurus* Atlantic Horse Mackerel (Linnaeus, 1758)



The lateral line, with its distinctive sharp dip, and vertical ridges below is clearly visible in this image. Tory Island, Donegal.

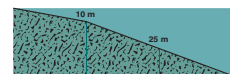
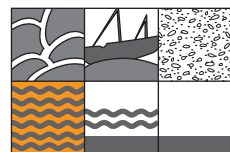
**GENERAL DESCRIPTION** The Atlantic Horse Mackerel has a streamlined shape, forked caudal fin and narrow caudal peduncle, all designed for fast swimming. The lateral line is distinct and has wide, bony scales (scutes) that show up most clearly after the point at which it dips down. The two dorsal fins are not easy to see underwater, but are set close together, the second one longer, with a higher front section. The pectoral fins are long, exceeding the length of the head. The colour is a uniform silver (especially in juveniles), with a dark blue-black dorsal surface and a rounded black spot on the rear top edge of the gill cover. Despite its vernacular name, this species is in the family Carangidae, not Scombridae.

This is a shoaling fish, with adults mostly found offshore and young commonly closer inshore. Juveniles are well-known for sheltering beneath the tentacles of large, stinging jellyfish such as the Lion's Mane *Cyanea capillata*, as are Whiting (p. 68).

**KEY FEATURES** A mackerel lookalike, but with an obvious lateral line that dips distinctively downwards under the second dorsal fin, from which point the wide bony scales show up clearly. A usually conspicuous black spot on gill cover.

**SIMILAR SPECIES** Atlantic Mackerel, although Atlantic Horse Mackerel lack the distinctive patterning of wavy dark lines seen in the former. The similar Mediterranean Horse Mackerel *Trachurus mediterraneus* (not described separately) has not yet been recorded in British or Irish waters.

**ABUNDANCE AND DISTRIBUTION** Rarely seen by divers but found all around Britain and Ireland, especially in southern areas. Conservation status is globally Vulnerable.





# *Atherina presbyter* Sand Smelt

Cuvier, 1829



MM



LB

Top A group of Sand Smelt together during the day, showing the broad, dark stripe along the flank. Swanage, Dorset.

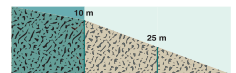
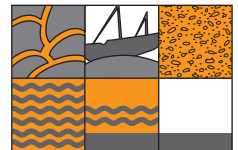
Above A fish close to the seabed at night. Weymouth, Dorset

**GENERAL DESCRIPTION** This is a small silvery fish which swims in leisurely shoals in shallow water. These shoals are not quite as skittish as Sprat or Herring and will often quietly disperse and reform as a diver passes by. Seen side-on, the most noticeable feature is a broad, dark stripe along the flank, which may appear iridescent. This stripe separates a darker, also iridescent, dorsal surface from highly reflective, silver flanks below the stripe (these fish are often called 'silversides'). Less easy to see underwater are the forked caudal fin, oblique mouth and two short, widely separated dorsal fins, although these may show up in a photograph. On a night dive, individuals can often be seen resting quietly on or near the bottom and this is when close-up photographs can be taken.

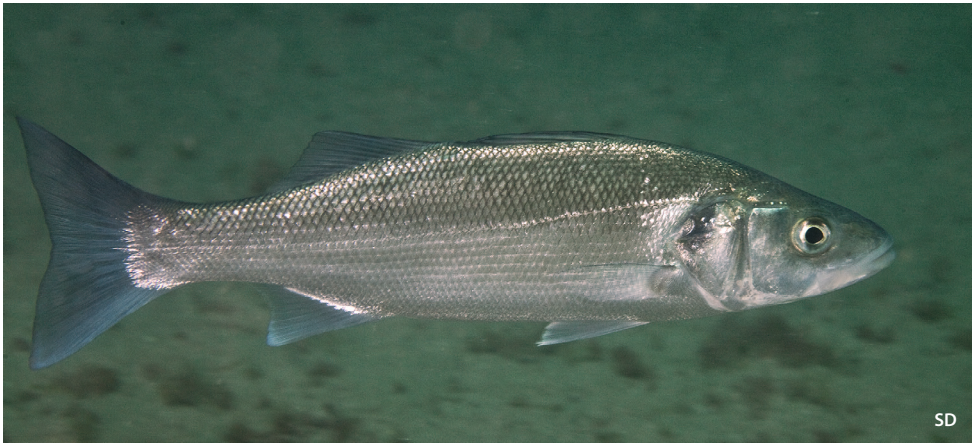
**KEY FEATURES** Small, slender fish with iridescent green/blue silvery line along both flanks. Two widely separated dorsal fins.

**SIMILAR SPECIES** Atlantic Sprat (p. 47) and juvenile Atlantic Herring (p. 46) look very similar, especially when viewed from above, but have only a single dorsal fin. However, Sand Smelt often swim with the first dorsal fin folded down which can cause confusion.

**ABUNDANCE AND DISTRIBUTION** Sand Smelt are much more common on south and west coasts of Britain and around Ireland than elsewhere. They are found in sheltered inshore waters (including estuaries and harbours) in summer and move into warmer offshore waters in winter.







**Above** The large silvery scales, darker on the dorsal surface, and lateral line show up clearly on this fish. Sark, Channel Islands.

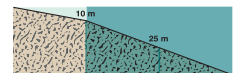
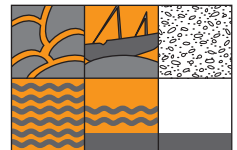
**Left** These fish are often seen in large shoals, as here in Sark, Channel Islands.

**GENERAL DESCRIPTION** Also known as Bass. European Seabass are thick-bodied but still streamlined and these brilliantly silver fish can disappear with a flick of their large caudal fin. The two dorsal fins are set so close together that they may appear as one, until the fish erects them. The first dorsal fin consists of sharp spines while the second is soft. Large scales and a clearly defined lateral line are obvious even from some distance away. Although essentially silver all over, the dorsal surface has a darker greyish blue hue and the ventral surface is silvery white. There is often a dark blotch at the top edge of the gill cover but this can be very indistinct. Juveniles have scattered black spots, mostly above the lateral line. European Seabass appear to be very wary of any potential predator and, as such, tend to keep at a distance from divers, often hovering at the limit of visibility.

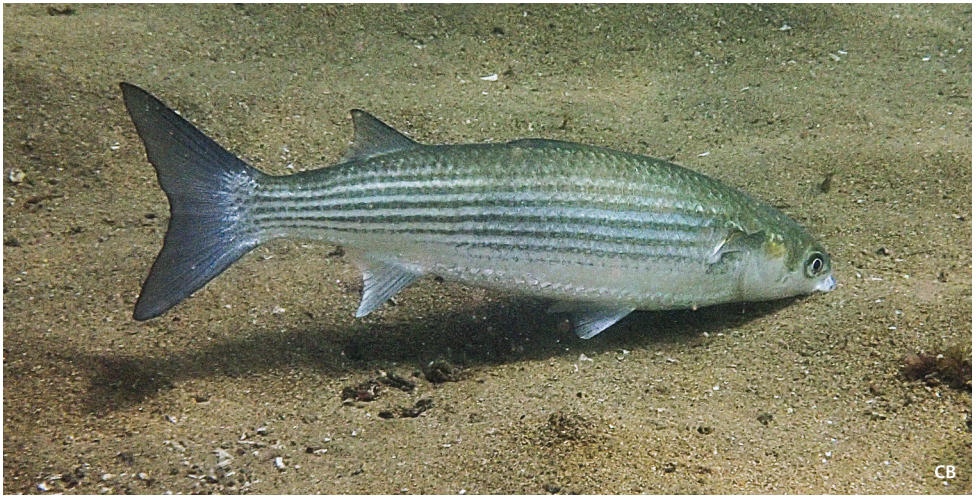
**KEY FEATURES** Thick-bodied, solid, silvery fish with distinct scales and two close-set dorsal fins.

**SIMILAR SPECIES** Similarly shaped grey mullets (pp. 54–55; family Mugilidae) also have obvious scales and two dorsal fins, but while they can appear silvery, they are much duller and distinctively striped along the flanks. They also have much smaller, blunter mouths.

**ABUNDANCE AND DISTRIBUTION** European Seabass occur all around Britain and Ireland. Generally seen singly or in small groups, often close inshore, including in estuaries, during summer. Larger shoals are mostly found offshore but it is not unusual for divers to see shoals of 50–100 fish.



## Mugilidae Grey mullets



Dark grey, longitudinal stripes and large scales identify this fish, foraging in the sand, as a species of grey mullet. The relatively chunky body suggests that this is a Thicklip Grey Mullet, despite the golden colour on the gill cover, which is sometimes found in this species as well as in Golden Grey Mullet. Swanage, Dorset.

**GENERAL DESCRIPTION** The grey mullets are a large family of silvery grey, torpedo-shaped fishes. The three species that occur around Britain and Ireland all have distinctive grey stripes along the body and large scales – both features usually showing up clearly underwater. They have two well-separated, short-based dorsal fins and, at close quarters, the first dorsal can be seen to consist of only four spines. They have neat, 'pursed' mouths and, while they feed mostly on organic material from the seabed, they can frequently be seen taking floating detritus at the surface in places such as marinas. Divers are rarely in a position to tell the species apart underwater and so should record them as *Chelon* sp., unless a good photograph allows identification to species level.

***Chelon labrosus* Thicklip Grey Mullet** (Risso, 1827)

Likely to be the most common species seen by divers. It has a very broad upper lip fringed with a moustache of small papillae (see photo opposite). As with Golden Grey Mullet, there may occasionally be a patch of golden colour on the gill cover but Thicklip Grey Mullet is a more heavily built fish.

***Chelon auratus* Golden Grey Mullet** (Risso, 1810)

Has a golden yellow patch near the top of the gill cover and a thin upper lip.

***Chelon ramada* Thinlip Grey Mullet** (Risso, 1827)

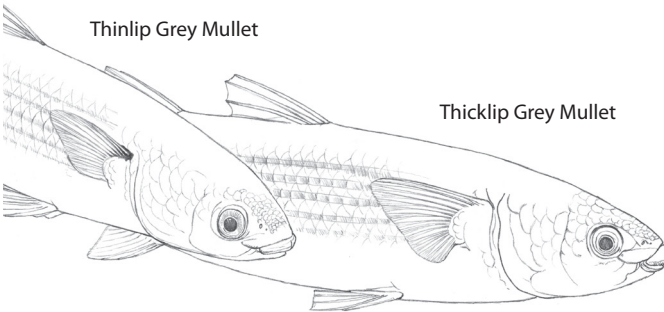
Has a dark spot at the base of the pectoral fins and a thin upper lip.



A grey mullet over a seagrass bed. Portland, Dorset.



# Mugilidae Grey mullets (continued)



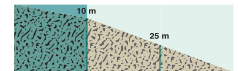
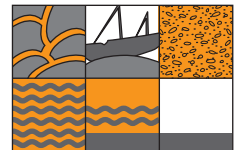
Grey mullets are frequently found in shallow water in sheltered bays, harbours, marinas and estuaries where there is plenty of algae and detritus for them to graze.

**KEY FEATURES** Torpedo-shaped, silvery fishes with longitudinal grey stripes, distinct scales and two widely spaced dorsal fins.

**SIMILAR SPECIES** European Seabass (p. 53) are similar in size and colour, but far more silvery and lack the distinctive, longitudinal stripes of grey mullets. European Seabass also have a larger mouth.

**ABUNDANCE AND DISTRIBUTION** Grey mullets are essentially warm-water fish and are most common in the southern half of Britain and Ireland in summer. Thicklip Grey Mullet are found around most of Britain and Ireland. Golden Grey Mullet have a similar wide distribution, but are much scarcer and only ever common in southern areas. Thinlip Grey Mullet are mainly a summer visitor from further south and can be seasonally common in the English Channel and around southern Ireland.

Above The characteristic thick upper lip of a Thicklip Grey Mullet. Helford Estuary, Cornwall.

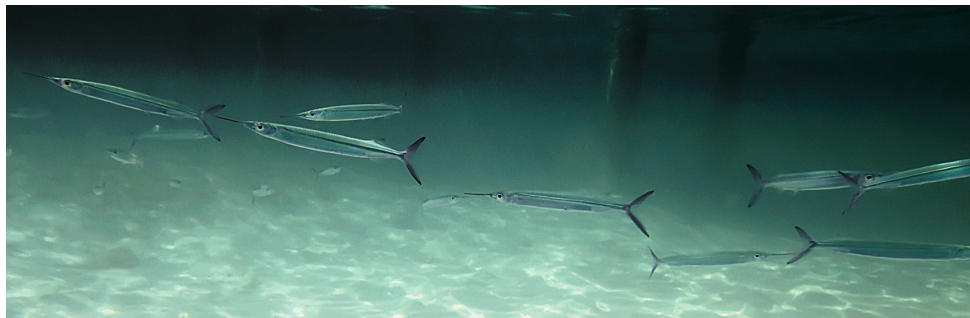


# *Belone belone* Garfish

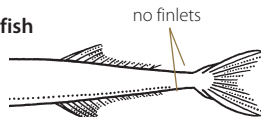
(Linnaeus, 1760)

# *Scomberesox saurus* Atlantic Saury

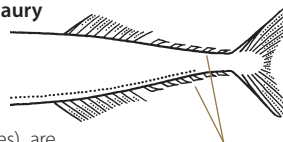
(Walbaum, 1792)



Garfish



Atlantic Saury



series of finlets between dorsal and anal fins and caudal fin.

Top A shoal of Garfish in shallow water.

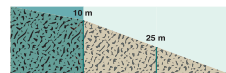
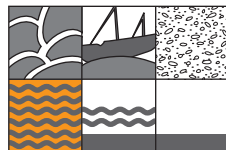
Above left A stranded Atlantic Saury showing the row of finlets in front of the caudal fin which distinguish it from Garfish. Waterville, Kerry. Above right Even a fleeting glimpse and a photograph of the head can identify a Garfish. Portland, Dorset.

**GENERAL DESCRIPTION** Both of these species (of the order Beloniformes) are extremely thin, elongated, needle-shaped fish with greatly extended jaws that form a flexible beak. The Garfish has a very short dorsal and anal fin set far back on the body, just in front of the caudal fin. In contrast, the Atlantic Saury has a series of small finlets between the caudal fin and both the dorsal and anal fins. Both species have deep green or metallic blue dorsal surfaces, with bright white ventral surfaces. These fish are most likely to be seen by snorkellers as they are found just below the surface as they move inshore during the summer, often associated with shoals of Atlantic Mackerel (p. 50).

**KEY FEATURES** The very long, needle-like jaws are unlike those of any other fishes in British and Irish waters.

**SIMILAR SPECIES** The Short-beaked Garfish *Belone svetovidovi* (not described separately), only recently distinguished from the Garfish, has a shorter beak than either of the other two fish and occurs sporadically off the south coast of Ireland and off Cornwall. It is not likely to be distinguishable in the field, even with good photographs.

**ABUNDANCE AND DISTRIBUTION** The Garfish is relatively common in the south and west of Britain and Ireland, less so off the North Sea coasts of Scotland and England. In contrast, the Atlantic Saury has an oceanic distribution, generally avoiding nearshore areas but can often be found stranded on beaches in the south and west of Britain and Ireland in late autumn and early winter. There was a record from Orkney in autumn 2022.







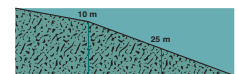
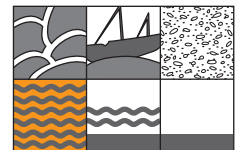
A rare diver encounter with an Ocean Sunfish, searching for jellyfish near the surface. Horn Head, Donegal.

**GENERAL DESCRIPTION** While another species of sunfish (Bumphead Sunfish *Mola alexandrini*), has now taken the title of the world's heaviest bony fish, the Ocean Sunfish is still an impressive giant. Divers very rarely encounter it underwater but, if seen, it is unmistakable. Sunfish are shaped like a huge disc and do not have a typical caudal fin, but instead have a rounded and often scalloped structure called a clavus. Its only fins are small pectoral fins on each side behind the gill cover, a very tall triangular dorsal fin, and a similar-shaped anal fin – both positioned far back just in front of the clavus. The colour is a blue-grey, plain or sometimes with irregular white blotches.

**KEY FEATURES** Large open-water fish with a disc-shaped body, tall paddle-like dorsal and anal fins and no defined tail.

**SIMILAR SPECIES** Of the four other sunfish species, only the Slender Sunfish *Ranzania laevis* (not described separately) has been recorded in British and Irish waters, on a handful of occasions prior to 2000. This species is much smaller and more oblong in shape. Sharptail Sunfish *Masturus lanceolatus*, Bumphead Sunfish and Hoodwinker Ocean Sunfish *Mola tecta* (only recently described in 2017) only occur further south, the latter in the southern hemisphere.

**ABUNDANCE AND DISTRIBUTION** While this is the most widespread sunfish in the world and has been recorded all around Britain and Ireland, most records are from boats. Divers do very occasionally see these fish though, and more records are needed. It is classified as Vulnerable due to population decrease.





A shoal of strongly marked Bib *Trisopterus luscus* patrol above rocky reef. Kimmeridge, Dorset.

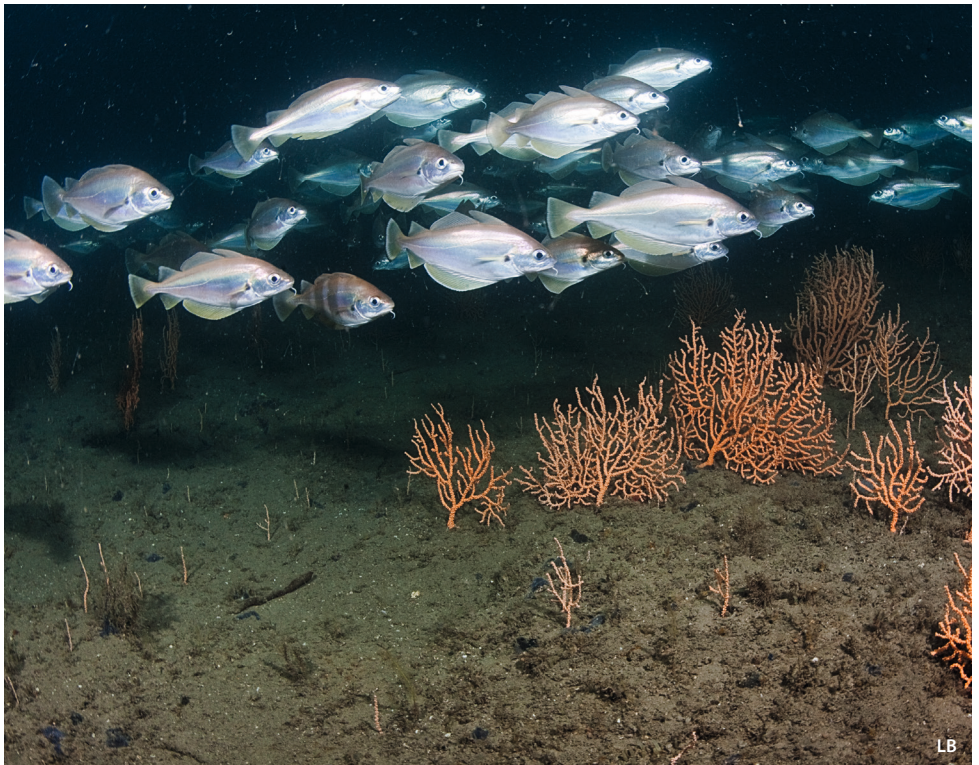


# Free-swimming silvery fishes near the seabed

A diver finning gently along a few metres above the seabed is likely to see a variety of fishes that live neither on the seabed (pp. 98–265) nor up and out in open water (pp. 44–57). Instead, these fishes spend most time swimming in the few tens of metres above the seabed. Like open-water fishes, they swim all the time and so have a relatively streamlined and fairly standard, tapering body shape. In contrast, fishes living on the seabed are more varied in shape, with adaptations such as the flattened bodies of flatfishes and skates. Many of these silvery fishes will be encountered as individuals or in small groups within kelp forests and around rocky reefs and wrecks. Others prefer to feed over mixed ground and sediments. Divers generally see individuals or small shoals around rocky reefs during the day. However, some species, such as Saithe *Pollachius virens*, may disperse at night over the sand to hunt for sandeels. Large shoals of Saithe, Atlantic Cod *Gadus morhua* and others may also hunt in midwater.

The majority of these predominantly silvery fishes belong to the codfish family (pp. 60–69) and seabreams (pp. 70–78). Codfishes and seabreams often spend time out in the open, sometimes well above the seabed and so many species are camouflaged by 'countershading', with a darker dorsal surface and silvery white ventral surface, in the same way as are truly open water (pelagic) species (pp. 44–57).

Some seabed-living (benthic) fishes such as Red Mullet *Mullus surmuletus* (pp. 160–161) are also free-swimmers above the seabed when they are small juveniles.

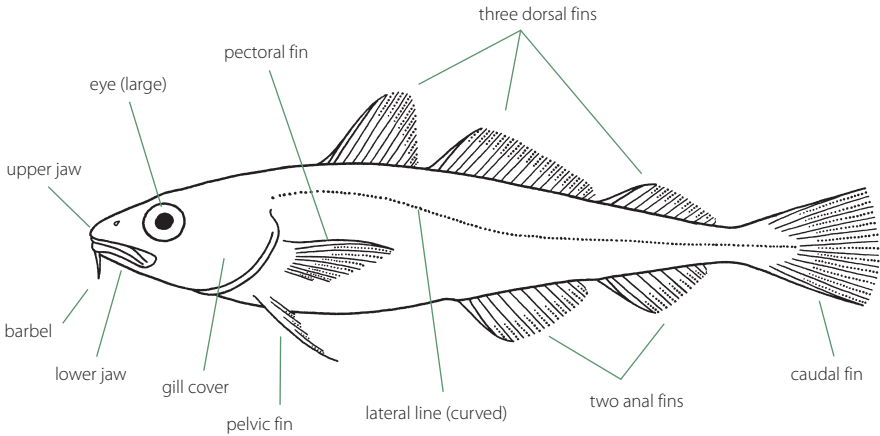


A small shoal of paler, more uniformly coloured Bib *Trisopterus luscus* over a reef with Pink Sea Fans *Eunicella verrucosa*. Lyme Bay, Dorset.

# Gadidae Codfishes

Codfishes (Gadidae), also known as gadoids, have three dorsal and two anal fins. The paired pelvic fins on the ventral surface lie under, or just behind, the head, and always begin in front of the pectoral fins (see illustration below). Colour is variable but most have a metallic, silvery sheen. Many, but not all, species have a chin barbel (see table below). These variously mottled and metallic looking silvery fish are found in both coastal and offshore waters, where they live and feed in the water column, predominantly near to the seabed. This family includes some of the most commercially valuable species in the North Atlantic, such as the Atlantic Cod *Gadus morhua*, as well as some much smaller species.

Seven species are likely to be seen by divers around Britain and Ireland and are described in the following pages: Atlantic Cod *Gadus morhua*, Haddock *Melanogrammus aeglefinus*, Pollack *Pollachius pollachius*, Saithe *Pollachius virens*, Bib *Trisopterus luscus*, Poor Cod *Trisopterus minutus* and Whiting *Merlangius merlangus*. There are a number of other codfishes found in British and Irish waters, such as Norway Pout *Trisopterus esmarkii* and Blue Whiting *Micromesistius poutassou*, but these are largely offshore species and so are not included here.



The main codfish family features (using Atlantic Cod *Gadus morhua* as an example).

Species	Chin barbel	Jaws	Lateral line	Black spot base of pectoral fin	Other features
Atlantic Cod <i>Gadus morhua</i>	Long	Upper overhangs	Gentle curve, white	No	
Haddock <i>Melanogrammus aeglefinus</i>	Short	Upper overhangs	Gentle curve, black	No	Large black blotch on flank
Pollack <i>Pollachius pollachius</i>	None	Lower protrudes	Strong curve, dark	No	
Saithe <i>Pollachius virens</i>	None	Almost equal	Almost straight, pale	No	
Bib <i>Trisopterus luscus</i>	Long	Upper overhangs	Curved	Yes, large	
Poor Cod <i>Trisopterus minutus</i>	Long	Upper overhangs	Curved	Some	Large eyes
Whiting <i>Merlangius merlangus</i>	None (or minute)	Upper overhangs	Gentle curve	Yes	



## Codfish head gallery



Atlantic Cod *Gadus morhua* p. 62



Haddock *Melanogrammus aeglefinus* p. 63



Pollack *Pollachius pollachius* p. 64



Saithe *Pollachius virens* p. 65



Bib *Trisopterus luscus* p. 66



Poor Cod *Trisopterus minutus* p. 67



Whiting *Merlangius merlangus* p. 68

A gallery of the seven codfish family species likely to be seen by divers around Britain and Ireland, showing the head similarities and differences (see also table opposite).



PBa



PBa

**Above** Atlantic Cod clearly showing the long, white barbel on the chin and three distinct dorsal fins. Loch Long, Argyll & Bute.

**Right** Juvenile Atlantic Cod showing reddish chequered markings. Loch Long, Argyll & Bute.

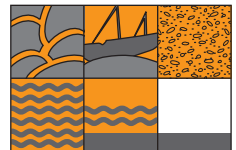
**GENERAL DESCRIPTION** Atlantic Cod is a familiar fish to many people through its popularity as a food fish. An adult Atlantic Cod is a solid-looking fish with a large head, an overhanging upper jaw and a prominent chin barbel. Each of the three dorsal fins begins close to the adjacent fin. The colour pattern consists of close-set, greenish brown to reddish mottles on a paler background. The smoothly curved lateral line appears as a distinctively pale, narrow band, and may not be obvious in young fish. Juveniles are usually reddish with chequered paler markings (see p. 69). Large adults can reach weights in excess of 90kg, but fish over about 15kg are now rare.

Adult Atlantic Cod mostly live and feed in offshore shoals, but divers will often see young immature fish inshore, including in wreckage, at reasonable sizes.

**KEY FEATURES** Large head with overhanging upper jaw, chin barbel and pale lateral line.

**SIMILAR SPECIES** Adults are unlikely to be mistaken for any other codfish. Juveniles, however, can be confused with juvenile Atlantic Cod, Pollack and Saithe. These can be distinguished by differences in jaw shape (see pp. 60–61).

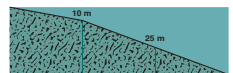
**ABUNDANCE AND DISTRIBUTION** While still common all around Britain and Ireland, immense offshore shoals are now a thing of the past, as are very large fish. It is classified as globally Vulnerable.



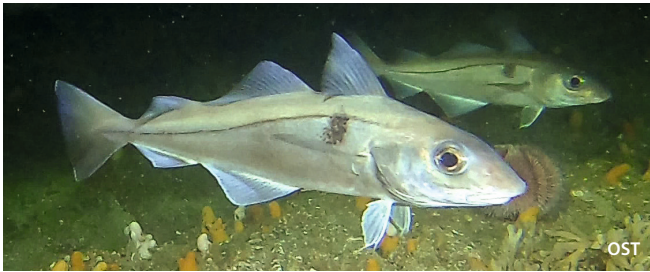
adult



juvenile







**Above and left** Haddock photographed using a baited underwater video showing the dark lateral line and 'thumbprint' blotch on the flank. Marwick, Orkney.



**Left** A juvenile infected with black-spot (see p. 271) showing the pale edges to the fins. The normally black 'thumbprint' blotch behind the pectoral fin is showing as a yellowish mark on this probably sickly fish. Loch Fyne, Argyll & Bute.

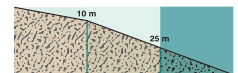
**GENERAL DESCRIPTION** At first glance, a Haddock looks similar to a slimline, silvery-grey Atlantic Cod, and like the latter, it has a clearly overhanging upper jaw. However, Haddock has some obvious distinctive features: the chin barbel is short and difficult to see underwater, the lateral line is black and there is a large, dark 'thumbprint' blotch below the first of the three dorsal fins. The latter is the most evident feature underwater. The first of the three dorsal fins is tall and pointed and young fish may have pale, iridescent blue edges to all fins.

Haddock is probably the least likely of all the inshore codfish family members to be seen by divers, as they mostly live in deep, cool water. However, young fish can be found within diving depths and, while preferring dark, shaded places, can be seen in daylight and in shallow water.

**KEY FEATURES** Codfish with a large black blotch behind the gill cover, dark lateral line and tall pointed first dorsal fin.

**SIMILAR SPECIES** Characteristic black blotch should be diagnostic, even in juveniles.

**ABUNDANCE AND DISTRIBUTION** While found all around Britain and Ireland, Haddock is a cold-water species.



# *Pollachius pollachius* Pollack

(Linnaeus, 1758)



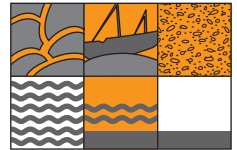
Adult Pollack showing the curved lateral line and protruding lower jaw. Above North Norfolk. Left Devon.

**GENERAL DESCRIPTION** This classic, silvery member of the codfish family will be encountered on many dives in rocky areas, near wrecks and in mature kelp forests. Large individuals often swim leisurely around, usually in small dispersed groups. Almost the entire body is intensely reflective, giving an overall silvery impression, although the dorsal surface is dark and frequently greenish and the ventral surface is white. The lower jaw is longer than the upper and does not have a chin barbel and the lateral line is curved. A quiet approach will allow all these features to be observed underwater. Juvenile and young Pollack have a distinctive coloration (see also p. 69).

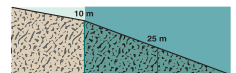
**KEY FEATURES** A large, reflective fish with three dorsal fins, a protruding lower jaw with no barbel, and distinctly curved lateral line.

**SIMILAR SPECIES** Easy to confuse with the very similar Saithe (opposite), but look carefully for the Saithe's straight lateral line and equal-length jaws. Most other codfishes seen by divers (such as Bib *Trisopterus luscus* p. 66 and Poor Cod *T. minutus* p. 67) have a chin barbel.

**ABUNDANCE AND DISTRIBUTION** Common all around Britain and Ireland where suitable rocky habitat is available. Young fish are less fussy and also occur in areas of sediment seabed.



Very small Pollack are often a bright golden colour. Cape Wrath, Highland.





# *Pollachius virens* Saithe



**Above** A dark greenish Saithe with its bright white, nearly straight lateral line and equal-length jaws. Isle of Man.

**Right** Saithe shoal – gold or greenish depending on how the light catches them. Burra Sound, Orkney.



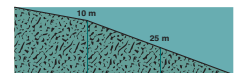
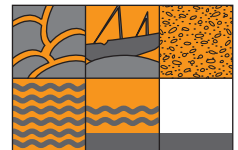
**GENERAL DESCRIPTION** Also known as Coalfish or Coley. Saithe have the typical shape of a codfish (p. 60) and is one of the species lacking a chin barbel. A dark greenish colour on the dorsal surface can make it difficult to see the three dorsal fins characteristic of this family. Saithe have a straight, light-coloured lateral line and equal length jaws, both of which can show up well in photographs or when observed at night as they swim over the seabed. Saithe tend to form large, cohesive shoals and divers will often see them passing by as a silvery stream of medium-sized fish.

Saithe and Pollack can easily be mistaken for one another and if there is any doubt as to which is which, the fish should be recorded as '*Pollachius* sp.'. Juveniles have a distinctive, bright coloration (see p. 69).

**KEY FEATURES** Silvery, shoaling codfish with a straight, light-coloured lateral line, equal-length jaws and no chin barbel.

**SIMILAR SPECIES** Pollack (opposite) and Whiting (p. 68) both also lack a chin barbel so their descriptions should also be checked.

**ABUNDANCE AND DISTRIBUTION** Saithe are found all around Britain and Ireland, but have a preference for cooler and offshore waters. Scotland is the exception, where young fish can be abundant within diving depths and can even be found in rockpools.



# *Trisopterus luscus* Bib

(Linnaeus, 1758)



**Above** Large, pale Bib showing three dorsal fins, long chin barbel and black spot at the base of the pectoral fin. Dorset.

**Left** Showing vertical bands. Dorset.

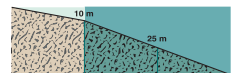
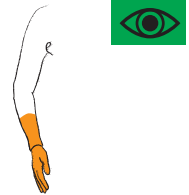
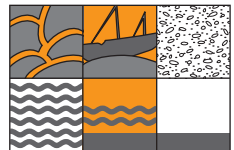
**GENERAL DESCRIPTION** Also known as Pouting. Bib are deeper-bodied than most other gadoids – the result of a short, near-triangular front with a longer, also near-triangular rear (this can be visualised as two cones with the bases placed together). The first of the three dorsal fins is tall and triangular but when this fin is folded back the shape becomes less obvious. The upper jaw overhangs the lower, which itself sports a single barbel. Typically, Bib have a very light, metallic silvery coppery overall colour, with three or four dark, vertical bands. Some, usually larger, individuals lack any banding and can be either silvery or very dark in colour. There is a black mark at the base of the pectoral fin which may or may not be obvious and distinct. Bib can be easy to approach and many, if not all, of these features may be seen underwater.

Bib often shoal in small groups in sheltered spots around shipwrecks and rocky reefs but can be seen elsewhere too.

**KEY FEATURES** Bib are a deep-bodied codfish in which the upper jaw overhangs the lower and there is a chin barbel. They usually have distinct light and dark vertical bands. The first dorsal fin is high and triangular and there is a black mark at base of the pectoral fin.

**SIMILAR SPECIES** The most likely confusion is of young (small) Bib with Poor Cod *Trisopterus minutus* (opposite), which also have a similar overhanging upper jaw and barbel. The two species often occur together. Poor Cod have a slim body shape, no banding and proportionally larger eyes. Poor Cod (and Whiting p. 68) can both have a less obvious black spot at the base of the pectoral fin. In Poor Cod, the first anal fin starts at a point beneath the gap between the first and second dorsal fins. In Bib, it starts beneath the middle or front of the first dorsal fin (see opposite).

**ABUNDANCE AND DISTRIBUTION** This is a common species all round Britain and Ireland where suitable rocky habitat is present. It is often seen by divers, especially on wrecks.







**Above** Two Poor Cod with a group of Bib. The slim body and large eye distinguishes them from Bib. Cornwall.

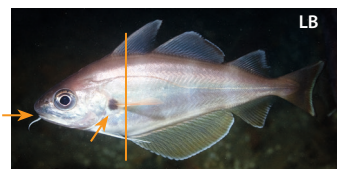
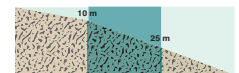
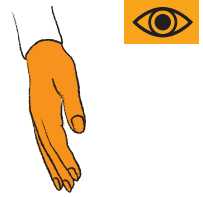
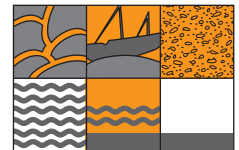
**Left** Some Poor Cod show faint banding. Milford Haven, Pembrokeshire.

**GENERAL DESCRIPTION** Poor Cod are small, slim, metallic silvery or coppery coloured codfish. They have noticeably large eyes for their size, which help distinguish them from the similar Bib (opposite). As with other codfishes, they have three dorsal fins and, like Bib, an overhanging upper jaw and a chin barbel. 'Poor' in this instance refers to their small size and, in British and Irish waters, this is the smallest species in the codfish family. They often hang around between large boulders, underneath overhangs and in wrecks.

**KEY FEATURES** A small (rarely exceeding 20cm), slim-bodied codfish, of uniform and unstriped colour (although they may display faint stripes at night), with relatively large eyes and a chin barbel.

**SIMILAR SPECIES** Mixed groups of Bib and Poor Cod are not unusual. Bib have a deeper body, often with distinct vertical bands of dark and light, and a usually distinct black mark at the base of the pectoral fin, while Poor Cod may have a rather indistinct dark mark. In Poor Cod, the first anal fin starts at a point beneath the gap between the first and second dorsal fins. In Bib, it starts beneath the middle or front of the first dorsal fin.

**ABUNDANCE AND DISTRIBUTION** Common all around Britain and Ireland. Sometimes seen in large shoals over sediment.



Bib



Poor Cod

# Merlangius merlangus Whiting

(Linnaeus, 1758)



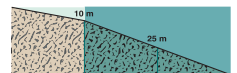
Above and left Whiting lack a chin barbel and have dorsal and anal fins edged in white. Weymouth, Dorset.

**GENERAL DESCRIPTION** Whiting are a rather slimline member of the codfish family. They have a prominent snout due to a slightly overhanging upper jaw and no apparent chin barbel (although young fish may have a minute one). The dorsal surface is a grey-blue to olive brown, which may be faintly mottled when near the seabed, and the flanks are a muted silver. There may be a more or less distinct dark mark at the upper base of the pectoral fin. Colour is not very useful for identification, although the three dorsal and in particular, the two anal fins are usually edged with white (a close look or photograph is needed to reveal this). When fully fanned out, the caudal fin has a square-cut edge.

**KEY FEATURES** A slimline codfish, with protruding upper jaw and no obvious chin barbel. Often a white edge to dorsal and anal fins.

**SIMILAR SPECIES** Other codfishes including Pollack (p. 64), but that species has a protruding lower jaw. Saithe (p. 66) have a straight, light-coloured lateral line. Whiting, Poor Cod (p. 67) and Bib (p. 66) may all have a dark spot at the base of the pectoral fin.

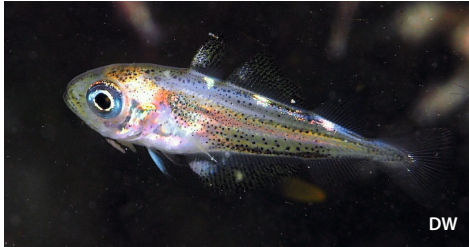
**ABUNDANCE AND DISTRIBUTION** Common all around Britain and Ireland especially in the North Sea and Irish Sea, but mostly over sediment and in midwater.





## Codfish juveniles and colour variations

Juvenile codfishes/gadoids often have a quite different colour and pattern to adults. When they are small and vulnerable, young fish often live in a different habitat to the adults and their colour provides appropriate camouflage within these habitats. While juvenile Atlantic Cod (p. 62), Pollack (p. 64) and Saithe (p. 65) shelter amongst seaweeds and rocks, adults are typically out in the open, although some adult codfishes also show variations in colour. The photographs below show codfish juveniles and colour variants.



Juvenile gadoid, unidentifiable to species. Cley, Norfolk.



Cod, *Gadus morhua*. Isle of Arran.



Cod, *Gadus morhua*. Isle of Arran.



Poor Cod, *Trisopterus minutus*. Loch Duich, Highland..



Saithe, *Pollachius virens*. Loch Ailort, Highland.



Pollack, *Pollachius pollachius*. Isle of Skye, Highland.



Pollack, *Pollachius pollachius*. Swanage, Dorset.



Pollack, *Pollachius pollachius*. Swanage, Dorset.

## Sparidae Seabreams

Seabreams are deep-bodied, oval-shaped fish. They have a single, relatively low, long dorsal fin which is spiny at the front, soft at the rear. The rear of the shorter anal fin is directly below the rear of the dorsal fin and the large caudal fin is deeply forked. These fish have complicated life histories, with some maturing as males first (Gilthead *Sparus aurata* and Blackspot Seabream *Pagellus bogaraveo*), others as females first (Black Seabream *Spondylisoma cantharus* and Couch's Seabream *Pagrus pagrus*); all are long-lived fish.

While seabreams are largely warmwater inhabitants, a few appear regularly off our coasts, especially in the summer, with around 12 species reported in total, some very rare. Three seabreams – Black, Couch's and Gilthead Seabream, return to the southern coasts of England, Ireland and to Cardigan Bay in Wales to breed. These three species, along with Common Two-banded Seabream *Diplodus vulgaris*, are described in detail on pp. 72–78.

Several other species are now being increasingly recorded around British and Irish coasts. The four seabream described below are thought to be seasonal visitors to British and Irish waters and a good photograph, together with expert opinion, will be required to confirm identity.

### *Boops boops* Bogue

(Linnaeus, 1758)

This slim-bodied seabream is silver-grey in colour with a dark lateral line and a number of parallel dark lines on the flanks. It can be found inshore in small, midwater shoals. While rare in northeast Atlantic waters, there are now regular reports during autumn and winter from southwest England and the Channel Islands. Occasionally there are sightings from southwest Ireland (County Kerry) and it has been reported from southwest Scotland. It seems to have been recorded more frequently since the 2000s.



A shoal of Bogue showing the dark lines on the flanks. Gozo.

### *Diplodus sargus* White Seabream

(Linnaeus, 1758)

This deep-bodied seabream is a silvery colour and may have darker vertical bars on the flank. It always has a rounded, black blotch on the caudal peduncle and caudal fin with a dusky margin. This species has been reported from Cornwall and is regularly caught in late summer and autumn around the Channel Islands.



White Seabream. Canary Islands.

### *Pagellus erythrinus* Common Pandora

(Linnaeus, 1758)

This moderately slim seabream has an almost straight, pointed snout. Adults are a silvery colour with scattered blue spots on the upper flanks, while juveniles have a pinkish hue. This fish is a regular, albeit uncommon, summer visitor to southwest England and Ireland. It could be confused with Couch's Seabream *Pagrus pagrus* (p. 76).



Common Pandora. Cerbère, France.



# Index

Page numbers in *italic* refer to the main species entry

## A

*Acantholabrus pailloni* **93**  
*Agonus cataphractus* **259**  
*Amblyraja radiata* **113**  
*Ammodytes marinus* **48**  
    *tobianus* **48**  
AMMODYTIDAE **48**  
*Anarhichas lupus* **158**  
Anchovy, Blue **47**  
    European **47**  
Angelshark **120, 121**  
Angler **98, 146**  
    Black-bellied **146**  
Anglerfish **146**  
*Anguilla anguilla* **261**  
*Anilocra* spp. **269**  
*Aphia minuta* **183, 210**  
*Apletodon dentatus* **215, 217**  
*Arnoglossus imperialis* **139**  
    *laterna* **137**  
    *thori* **138**  
*Atherina presbyter* **52**

## B

*Balistes capriscus* **79**  
Bandfish, Red **262, 263**  
Bass **53**  
BATOIDEA **100**  
*Belone belone* **56**  
    *svetovidovi* **56**  
Bib **58, 59, 61, 66**  
Black-spot disease **271**  
Blennies **162**  
BLENNIIDAE **162**  
*Blennius ocellaris* **162, 167**  
Blenny, Black-faced **179**  
    Butterfly **162, 167**  
    Montagu's **166**  
    Portuguese **170, 173**  
    Red **170, 173**  
    Ringneck **171**  
    Snake **177**  
    Tompot **28, 168, 169**  
    Variable **171**

Viviparous **178**  
    Yarrell's **176**  
Boarfish **97**  
Bogue **70**  
*Boops boops* **70**  
BOTHIDAE **136**  
Brill **140**  
*Buenia jeffreysii* **148, 183, 185, 187, 202, 203, 268**  
*Buglossidium luteum* **135**  
Bullhead, Norway **256**  
Butterfish **174**

## C

CALIGIDAE **270**  
CALLIONYMIDAE **222**  
*Callionymus lyra* **223, 224, 226, 270**  
    *maculatus* **228**  
    *reticulatus* **223, 225, 227**  
*Capros aper* **97**  
Catshark, Greaterspotted **43**  
    Smallspotted **34, 42, 118**  
*Centrolabrus exoletus* **24, 80, 91, 269, 272**  
*Cepola macrophthalama* **262, 263**  
*Cetorhinus maximus* **36, 37**  
*Chelidonichthys cuculus* **230, 231, 232, 233**  
    *lastoviza* **230, 231, 232, 235**  
    *lucerna* **230, 231, 232, 234**  
    *obscurus* **230**  
*Chelon auratus* **54**  
    *labrosus* **54**  
    *ramada* **54**  
*Chirolophis ascanii* **176**  
*Ciliata mustela* **25, 152**  
    *septentrionalis* **25, 153**  
Clingfish, Connemara **213**  
    Shore **212**  
    Small-headed **215, 217**  
    Two-spotted **214, 216**  
*Clupea harengus* **46**  
Coalfish **65**  
Cod, Atlantic **61, 62, 271**  
    Poor **22, 61, 67**  
Codfish **60**  
Coley **65**

Comber **267**  
*Conger conger* **149, 260, 273**  
Cook, Rock **24, 80, 91, 269, 272**  
*Coris julis* **92**  
*Coryphoblennius galerita* **166**  
COTTIDAE **252**  
*Crystallogobius linearis* **211**  
*Ctenolabrus rupestris* **10, 29, 90**  
*Cyclopterus lumpus* **218**

## D

Dab **22, 27, 128, 131**  
    Long Rough **123**  
*Dactylopterus volitans* **230**  
*Dasyatis pastinaca* **116**  
Dentex, Common **71**  
*Dentex dentex* **71**  
*Dicentrarchus labrax* **23, 53**  
*Diplecogaster bimaculata* **214, 216**  
*Diplodus sargus* **70**  
    *vulgaris* **78**  
*Dipturus batis* **114**  
    *intermedius* **115, 119**  
    *nidarosiensis* **114**  
    *oxyrinchus* **114**  
Dogfish, Lesserspotted **42**  
Dory, John **96**  
Dragonet, Common **223, 224, 226, 270**  
    Reticulated **223, 225, 227**  
    Spotted **228**

## E

*Echiichthys vipera* **238**  
Eel, Conger **149, 260, 273**  
    European **261**  
Eelpout **178**  
eggcases **118**  
ELASMOBRANCHII **35**  
*Enchelyopus cimbrius* **151**  
*Engraulis encrasicolus* **47**  
*Entelurus aequoreus* **230, 241, 245**  
*Eutrigla gurnardus* **231, 232, 236**

## F

Fish, Tadpole **157**  
    Wolf **158**  
Flatfish colour variants **131**

- Flatfishes 122  
 Flounder, European 125, 127, 131  
 Witch 130
- G**
- GADIDAE 60  
*Gadus morhua* 61, 62, 271  
*Gaidropsarus mediterraneus* 154  
     *vulgaris* 155  
*Galeorhinus galeus* 40  
 Garfish 56  
     Short-beaked 56
- GASTEROSTEIDAE 250  
*Gasterosteus aculeatus* 251  
*Glyptocephalus cynoglossus* 130  
*Gnathia maxillaris* 270
- GNATHIIDAE 270
- GOBIESOCIDAE 212
- GOBIIDAE 180  
*Gobius cobitis* 184, 186, 195  
     *couchi* 149, 184, 186, 194, 203  
     *cruentatus* 172, 184, 197  
     *gasteveni* 184, 196, 268  
     *niger* 181, 184, 186, 190, 198,  
         199, 203, 263  
     *paganellus* 181, 184, 186, 192,  
         203  
*Gobiusculus flavescens* 209  
 Goby, Black 181, 184, 186, 190,  
     198, 199, 203, 263  
     Common 183, 185, 187, 199,  
         206  
     Couch's 149, 184, 186, 194, 203  
     Crystal 211  
     Diminutive 183, 199, 201  
     Fries's 189, 203, 263  
     Giant 186, 195, 184  
     Guillet's 181, 183, 198, 200, 203  
     Jeffrey's 148, 183, 185, 187,  
         202, 203, 268  
     Leopard-spotted 21, 180, 183,  
         188, 203, 266  
     Lozano's 185, 187, 207  
     Norway 183, 185, 187, 208  
     Marbled 182  
     Painted 30, 181, 183, 185, 187,  
         199, 204  
     Red-mouthed 172, 184, 197  
     Rock 181, 184, 186, 192, 203
- Steven's 184, 196, 268  
 Transparent 183, 210  
 Two-spotted 183, 209, 270
- Gunnel, Rock 174  
 Gurnard, Flying 230  
     Grey 230, 231, 232, 236  
     Long-finned 230  
     Red 230, 231, 232, 233  
     Streaked 230, 231, 232, 235  
     Tub 230, 231, 232, 234
- Gymnamodytes semisquamatus*  
     48
- H**
- Haddock 61, 63  
 Hagfish 264  
 Halibut, Atlantic 123  
*Hemibdella soleae* 271  
 Herring, Atlantic 46  
*Hippocampus gutturalis* 248  
     *hippocampus* 249  
*Hippoglossoides platessoides* 123  
*Hippoglossus hippoglossus* 123  
 Hooknose 259  
 Huss, Bull 43  
*Hyperoplus immaculatus* 48  
     *lanceolatus* 48
- I**
- Isurus oxyrinchus* 38
- L**
- LABRIDAE 81  
*Labrus bergylta* 86, 94, 272  
     *mixtus* 88, 94  
*Lamna nasus* 38  
*Lampetra fluviatilis* 265  
 Lamprey, River 265  
     Sea 265  
 Lasher, Father 254  
*Lebetus guilleti* 181, 183, 198, 200,  
     203  
     *scorpioides* 183, 199, 201  
 Leeches 271  
*Lepadogaster candolii* 213  
     *purpurea* 212  
*Lepidorhombus whiffiagonis* 123  
*Lesueurigobius friesii* 189, 203, 263
- Leucoraja fullonica* 113  
     *naevus* 112  
*Limanda limanda* 22, 27, 128  
 Ling 13, 149, 156  
     Blue 156  
     Spanish 156  
*Liparis liparis* 220  
     *montagui* 220  
*Lipophrys pholis* 165  
*Lophius piscatorius* 98, 146  
     *budegassa* 146
- LOTIDAE 150  
*Lumpenus lampretaeformis* 177  
 Lumpsucker 218
- M**
- Mackerel, Atlantic 50  
     Atlantic Chub 50  
     Atlantic Horse 44, 45, 51  
     Mediterranean Horse 51  
 Mako, Shortfin 38  
*Masturus lanceolatus* 57  
 Megrim 123  
*Melanogrammus aeglefinus* 61, 63  
*Merlangius merlangus* 61, 68  
*Micrenophrys lilljeborgii* 256  
*Microchirus variegatus* 134  
*Micromesistius poutassou* 60  
*Microstomus kitt* 27, 129  
*Mola alexandrini* 57  
     *mola* 33, 57  
     *tecta* 57  
*Molva dypterygia* 156  
     *macrophthalma* 156  
     *molva* 13, 149, 156
- Monkfish 120, 146
- MUGILIDAE 54  
 Mullet, Bearded 160  
     Golden Grey 54  
     Red 24, 160  
     Thicklip Grey 54  
     Thinlip Grey 54  
*Mullus barbatus barbatus* 160  
     *surmuletus* 24, 160  
*Mustelus asterias* 41  
     *mustelus* 41
- MYLIOBATIFORMES 101  
*Myliobatis aquila* 113  
*Myoxocephalus scorpius* 254



- Myxine glutinosa* 269  
**N**  
*Nerophis lumbriciformis* 241, **246**  
  *ophidion* 241, **247**  
Nursehound **43**, 118  
**O**  
*Oblada melanura* **71**  
**P**  
*Pagellus acarne* **71**  
  *bogaraveo* **71**  
  *erythrinus* **70**  
*Pagrus pagrus* **76**  
Pandora, Common **70**  
*Parablennius gattorugine* **28**, **168**,  
  169  
  *pilicornis* **171**  
  *ruber* **170**  
Parasites 269  
*Pegusa lascaris* **132**  
*Petromyzon marinus* **265**  
*Pholis gunnellus* **174**  
Pilchard, European **47**  
Pipefish, Black-striped 240, **242**  
  Broad-nosed 241, **244**  
  Deep-snouted **244**  
  Greater 241, **242**  
  Lesser **243**  
  Nilsson's 241, **243**  
  Snake 241, **245**  
  Straight-nosed 241, **247**  
  Worm 241, **246**  
Piper 230  
Plaice, European **126**, 131  
*Platichthys flesus* 125, **127**, 131  
*Pleuronectes platessa* **126**, 131  
PLEURONECTIFORMES 122  
Pogge **259**  
*Pollachius pollachius* 61, **64**  
  *virens* 61, **65**  
Pollack 61, **64**  
*Pomatoschistus flavescens* 183,  
  **209**, 270  
  *lozanoi* 185, 187, **207**  
  *marmoratus* 182  
  *microps* 183, 185, 187, 199, **206**  
  *minutus* 185, 187, **207**  
  *norvegicus* 183, 185, 187, **208**  
  spp. 183, 186  
*Pontobdella muricata* 271  
Porbeagle 38  
Pout, Norway 60  
Pouting **66**  
*Prionace glauca* **38**  
*Pteroplatytrygon violacea* 101  
*Pungitius pungitius* 250  
**R**  
*Raja brachyura* **107**  
  *clavata* **104**, 119, 271  
  *microcellata* 103, **108**, 119  
  *montagui* 101, **106**  
  *undulata* 11, **109**, 110, 119  
RAJIFORMES 101  
*Raniceps raninus* **157**  
*Ranzania laevis* 57  
Ray, Atlantic Torpedo 117  
  Common Eagle **113**  
  Marbled Electric **117**  
Rays, electric 101  
Rockling, Five-bearded 25, **152**  
  Four-bearded **151**  
  Northern 25, **153**  
  Shore **154**  
  Three-bearded **155**  
*Rostroraja alba* 113  
Rout, Bull **254**  
**S**  
Saithe 61, **65**  
Salema **71**  
Sandeel, Corbin's **48**  
  Raitt's **48**  
Sandeel, Greater **48**  
  Lesser **48**  
  Smooth **48**  
*Sardina pilchardus* **47**  
*Sarpa salpa* **71**  
Saury, Atlantic **56**  
Scaldfish **137**  
  Imperial **139**  
  Thor's **138**  
*Scomber colias* 50  
  *scombrus* **50**  
*Scomberesox saurus* **56**  
SCOPHTHALMIDAE 140, 142  
  *rhombus* **140**  
*Scorpaena scrofa* 252  
  *porcus* 252  
Scorpionfish, Black 252  
  Red 252  
Scorpion, Long-spined Sea **252**,  
  270  
  Short-spined Sea **254**  
Sculpin, Moustache **258**  
SCYLIORHINIDAE 42  
*Scyliorhinus canicula* **42**, 34  
  *stellaris* **43**, 118  
Seabass, European 23, **53**  
Seabream, Axillary **71**  
  Black **72**, 74, 94  
  Blackspot **71**  
  Common Two-banded **78**  
  Couch's **76**  
  Gilthead **77**, 94  
  Red **71**  
  Saddled **71**  
  White **70**  
Seahorse, Long-snouted **248**  
  Short-snouted **249**  
  Spiny **248**  
Sea scorpions 252  
Seasnail, Common **220**  
  Montagu's **220**  
  Striped **220**  
*Serranus cabrilla* 267  
Shanny **165**  
Shark, Basking **36**, 37  
  Blue **38**  
  eggcases 118  
  School **40**  
Skate, Black 114  
  Blonde **107**  
  Blue **114**  
  Common **114**  
  Cuckoo **112**  
  eggcases 118  
  Flapper **115**, 119  
  Longnosed 114  
  Shagreen 113  
  Small-eyed 103, **108**, 119  
  Spotted 101, **106**  
  Starry **113**  
  Thornback **104**, 119, 271

Thorny **113**  
Undulate **11, 109, 110, 119**  
White **113**  
Skates **100**  
Smelt, Sand **52**  
Smoothhound **41**  
  Starry **41**  
*Solea solea* **133**  
Sole, Common **133**  
  Dover **133**  
  Lemon **27, 129**  
SOLEIDAE **132**  
Solenette **135**  
Sole, Sand **132**  
  Thickback **134**  
SPARIDAE **70**  
*Sparus aurata* **77, 94**  
*Spinachia spinachia* **250**  
*Spondylisoma cantharus* **72,**  
  **74, 94**  
Sprat, Atlantic **47, 49**  
*Sprattus sprattus* **47, 49**  
Spurdog **39**  
*Squalus acanthias* **39**  
*Squatina squatina* **120, 121**  
Stickleback, Fifteen-spined **250**  
  Nine-spined **250**  
  Sea **250**  
  Three-spined **251**  
Stingray, Common **116**  
  Pelagic **101**

Sucker, Cornish **212**  
Sunfish, Bumphead **57**  
  Hoodwinker Ocean **57**  
  Ocean **33, 57**  
  Sharptail **57**  
  Slender **57**  
*Symphodus bailloni* **84**  
  *melops* **82**  
SYNGNATHIDAE **240**  
*Syngnathus abaster* **240, 242**  
  *acus* **241, 242**  
  *rostellatus* **241, 243**  
  *typhle* **241, 244**

## T

*Taurulus bubalis* **252, 270**  
*Tetronarce nobiliana* **117**  
*Thorogobius ephippiatus* **21, 180,**  
  **183, 188, 203, 266**  
Tope **40**  
Topknot **99, 143**  
  Eckström's **25, 144**  
  Norwegian **12, 26, 131, 145**  
TORPEDINIFORMES **101**  
*Torpedo marmorata* **117**  
TRACHINIDAE **238**  
*Trachinus draco* **238**  
*Trachurus mediterraneus* **51**  
  *trachurus* **44, 45, 51**  
Triggetfish, Grey **79**

*Trigla lyra* **230**  
TRIGLIDAE **230**  
*Triglops murrayi* **258**  
*Tripterygion delaisi* **179**  
*Trisopterus esmarkii* **60**  
  *luscus* **58, 59, 61, 66**  
  *minutus* **22, 61, 67**  
Turbot **141**

## W

Weever, Greater **238**  
  Lesser **238**  
  stings **239**  
Whiting **61, 68**  
  Blue **60**  
Wrasse, Baillon's **84**  
  Ballan **86, 94, 272**  
  Corkwing **82**  
  Cuckoo **88, 94**  
  Goldsinny **10, 29, 90**  
  Rainbow **92**  
  Scale-rayed **93**

## Z

*Zeugopterus norvegicus* **12, 26,**  
  **131, 145**  
  *punctatus* **99, 143**  
  *regius* **25, 144**  
*Zeus faber* **96**  
*Zoarces viviparus* **178**