



# Rockpools

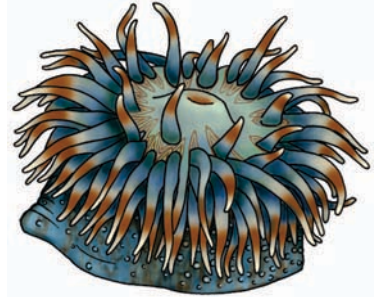
## North Sea Marine Life

Rockpools are one of the most diverse shoreline habitats. Many animals shelter here, waiting for the tide to return. This makes rockpools an excellent place to begin searching for fascinating marine creatures.

### Dahlia Anemone

#### *Urticina felina*

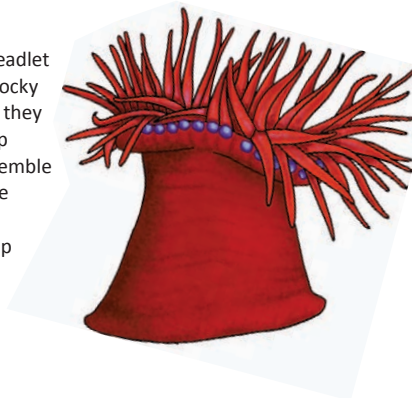
A large anemone with up to 160 short tentacles and variable colouration. Gravel and shell fragments are stuck to warts on the column to help with camouflage. If conditions are not ideal where they are, dahlia anemones can use their sticky 'foot' to move away.



### Beadlet Anemone

#### *Actinia equina*

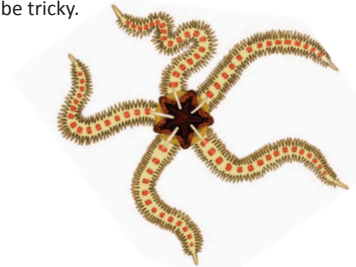
Usually dark red in colour, beadlet anemones are common on rocky shores. When the tide is out they retract their tentacles to help retain moisture and may resemble small blobs of jelly. When the tide is in, beautiful tentacles armed with stinging cells help catch unsuspecting prey.



### Brittlestar

#### various species

In keeping with their name, brittlestars are extremely delicate, readily shedding arms in order to evade predation. Lost arms are then simply regenerated! Several species occur around our shores and identification can sometimes be tricky.



### Butterfish

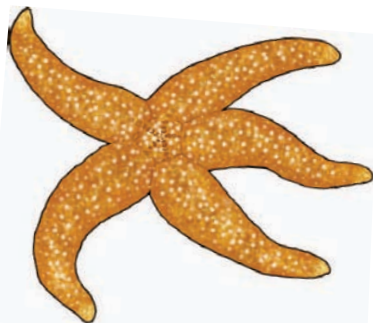
#### *Pholis gunnellus*

The line of dark spots outlined by white that run along its back are the best way to identify this slippery, eel-like fish. They are commonly found in rockpools and can reach 25cm long. As their name suggests, they are very difficult to pick up!



## Common Starfish

*Asterias rubens*



This is the most common and familiar starfish to be found on our shores. Look for it in pools and under rocks. They can reach an astonishing 50cm across, but are often much smaller. Common starfish love to eat mussels and feed by wrapping their arms

around the shell and prising the two halves apart before ejecting their stomach out of their mouth and into the mussel! Here digestive juices get to work and the starfish sucks up a tasty mussel soup.

## Common Prawn

*Palaemon serratus*

This inquisitive crustacean has a transparent body with brown stripes and yellow and blue markings on the legs. They are fast moving but often fall prey to sea anemones and fish.

## Grey Topshell

*Gibbula cineraria*



This common sea snail with a rounded conical shell can be found under seaweed and on rocks but is easily confused with the climate-change-indicating Purple Topshell. Grey

topshells are the most common in the North Sea region and have a smaller umbilicus (the hole in the underside of the shell).

## Dog Whelk

*Nucella lapillus*



Dog whelk shells are usually pale, with a rounded bottom edge and a pointed spire. This voracious predator roams the rocky shore looking for its favourite food, barnacles and mussels. They feed by drilling into the shell and secreting digestive juices. They then suck out the 'soup' that is left! – See if you can find any dog whelk victims – look for shells with a small neat hole in the side.



## Sea Hare

*Aplysia punctata*

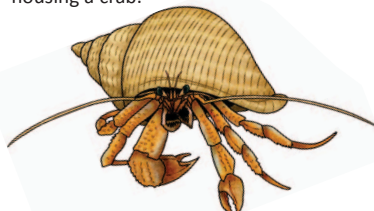
Growing to 10cm long, this large sea slug is usually brown in colour but, depending on which seaweed it grazes, can vary from green through to red! The name Sea Hare refers to the large head tentacles that resemble hare's ears. Look out for sea hare eggs during the summer - these resemble a pile of coiled up noodles!



## Hermit Crab

*Pagurus bernhardus*

As they lack a full coat of armour, hermit crabs have to improvise and use shells to protect the soft parts of their body. If you see a shell moving quickly along the sea floor, take a closer look as it may be housing a crab.





# Rocky Shore

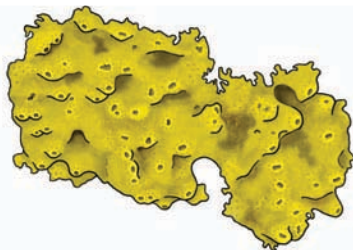
## North Sea Marine Life

Rocky shores are simply teeming with life, from the obvious seaweeds, limpets and anemones to well-hidden fish and crustaceans. For this reason they are a fascinating place to explore and the closer you look the more you will discover.

### Breadcrumb Sponge

*Halichondria panicea*

This is a sponge of varying shape, size and colour. When living in shady areas breadcrumb sponge tends to be creamy-yellow, while those out in the open tend to be green. This is due to the presence of symbiotic algae living within the tissues.



### Velvet Swimming Crab

*Necora puber*

This species is unmistakable. The “velvet” in its name refers to the covering of small, soft hairs, while the “swimming” part refers to its flattened back legs. They also have distinctive red eyes (giving them the alternative name of Devil Crab) and will rear up at unsuspecting rockpoolers!



### Shore Crab

*Carcinus maenas*

This familiar species has a mottled coloration varying from green to brown. They are best identified by looking at the shell. Shore crabs have five ‘teeth’ either side of the eyes, and three rounded lobes between the eyes.



### Edible Crab

*Cancer pagurus*



Easily recognisable thanks to the ‘pie crust’ edge of the shell. The body is wider than it is long and the large claws have black tips. This is an extremely important species commercially, with around 60,000 tonnes caught annually.



### Star Ascidian

*Botryllus schlosseri*

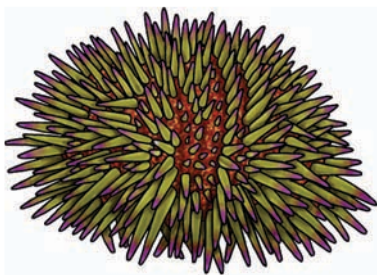
This encrusting animal is actually a colony of tiny individuals known as zooids. These zooids arrange themselves in star-like patterns and occur in a large range of colours. They are commonly found living on exposed rocky surfaces.

As well as peering into rockpools, why not move aside some seaweed to see what's below; peer into cracks and crevices; lift up rocks to see what lies beneath; or look closely at the creatures living firmly attached to the rock; you can also compare what you find at the top of the shore with what you find towards the water's edge.

## Shore Urchin

*Psammechinus miliaris*

This small, spiny urchin is a relative of the starfish and uses special tube feet to get around. The body is usually green, with purple tipped spines. In order to camouflage against predators, shore urchins will often cover themselves in small stones and bits of seaweed.



## Shanny

*Lipophrys pholis*

Usually 10-16cm long, this fish has a rounded head and an elongated body with a dorsal fin running its entire length. They are usually a yellowish or greenish brown colour

## Keelworm

*Pomatoceros spp.*

These worms build themselves calcareous tubes, stuck horizontally to almost any hard surface. When underwater, they put out feathery "cilia" in order to feed on plankton.



## Chitons

various species



Chitons are molluscs, but instead of having a single shell (like snails) or two half shells (as in bivalves) they are covered by eight tightly fitting plates. There are several different species of chiton but all are typically oval in shape and sit firmly anchored to rocks. A chiton can curl itself up into a ball like a woodlouse!

## Common Limpet

*Patella vulgata*

Limpets are a common sight on rocky shores. They have conical shells that are greyish-white to yellow in colour, and are often covered in algae. Each individual limpet has a 'home scar', the place to which it returns after every grazing mission.







# Seaweed

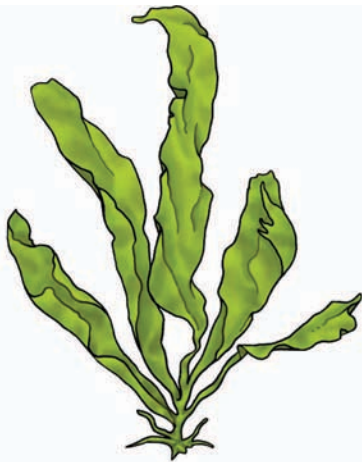
## North Sea Marine Life

Seaweeds are one of the most important components of the seashore and fulfil the same role that plants do on land - converting energy from sunlight into food. Many animals, such as limpets and crabs, rely on seaweeds for food or shelter. Seaweeds are divided into three groups: green, brown and red.

### Sea Lettuce

*Ulva spp.*

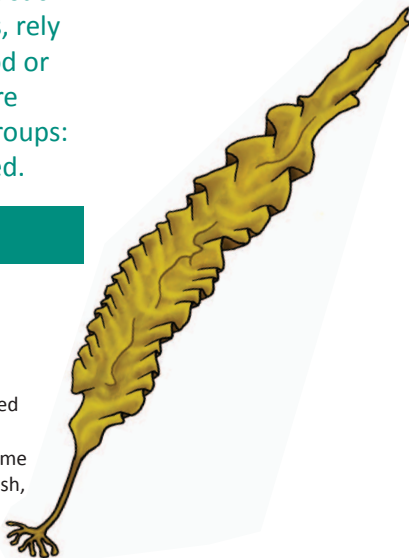
These familiar seaweeds come in a range of different shapes, from long and thin to broad and 'lettuce-like', but all share the vibrant, bright green colouration.



### Sugar Kelp

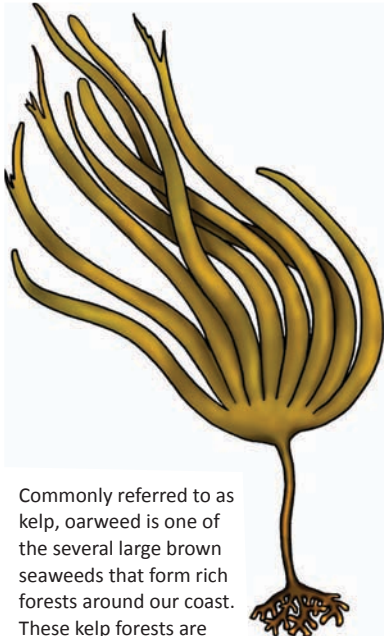
*Saccharina latissima*  
(formerly *Laminaria saccharina*)

A long, leathery, unbranched brown seaweed which can reach 4m in length. The name Sugar Kelp refers to a whitish, sweet-tasting powder that forms on the dried frond.



### Oar Weed

*Laminaria digitata*

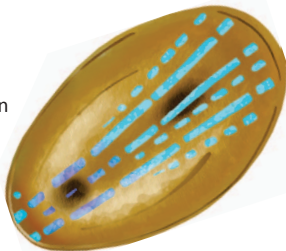


Commonly referred to as kelp, oarweed is one of the several large brown seaweeds that form rich forests around our coast. These kelp forests are often exposed at very low tides and provide a rich hunting ground for intrepid Shoresearchers!

### Blue-rayed Limpet

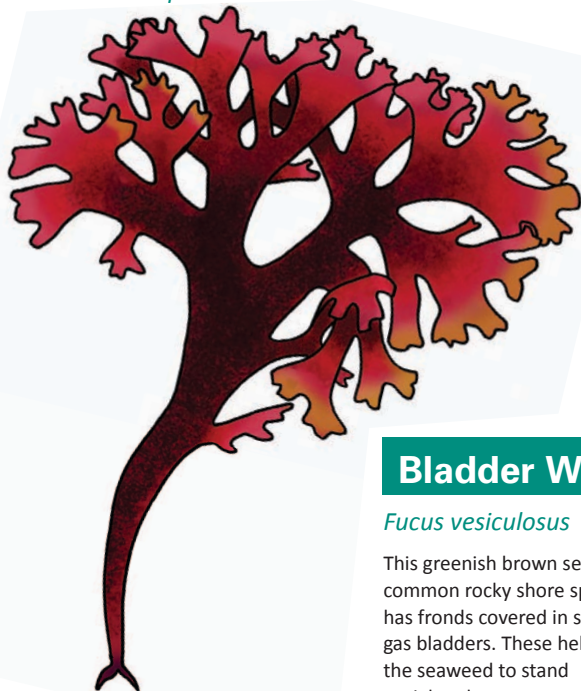
*Heliconia pellucidum*

These beautiful molluscs with their electric blue markings are found clinging to kelp, their favourite food. They gradually eat away a little pit in which they sit and are often found in groups.



## Irish Moss

*Chondrus crispus*

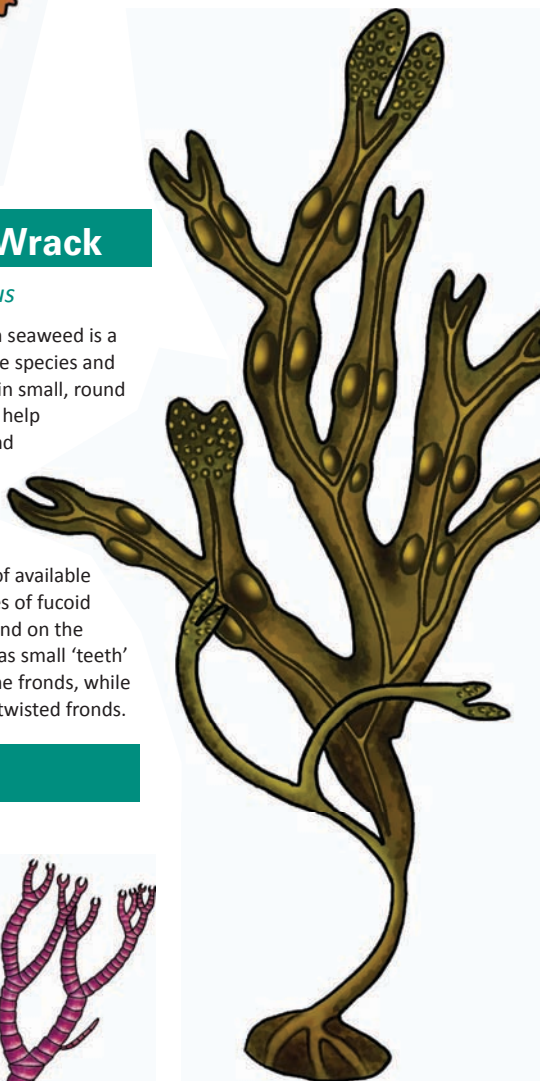


A short, rigid red seaweed with fan shaped fronds. Extracts from this species are used to make fire-fighting foam stickier; to prevent ice crystals forming in ice cream; as a thickener in shoe polish and were even used to make the fake saliva in the film Alien!

## Bladder Wrack

*Fucus vesiculosus*

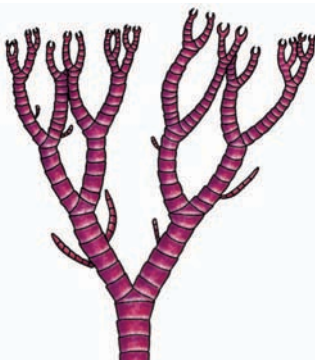
This greenish brown seaweed is a common rocky shore species and has fronds covered in small, round gas bladders. These help the seaweed to stand upright when submerged by the tide, thus gathering the maximum amount of available sunlight. Other types of furoid seaweed can be found on the shore. Saw Wrack has small 'teeth' along the edge of the fronds, while Spiraled Wrack has twisted fronds.



## Banded pincer weeds

*Ceramium spp.*

Whilst identifying these seaweeds to species level in the field is extremely difficult, recognising a *Ceramium* is relatively straight forward. Look closely at the tips of the fronds and you will see they appear like little pincers.





# Sandy Shore

## North Sea Marine Life

At first glance, sandy shores may appear barren and desert-like but this couldn't be further from the truth. Like their rocky counterparts, sandy shores are teeming with life. It's just hiding! And it's not only the sand that provides a home. The strandline that washes up each day is an extremely important habitat, providing a constant supply of food for sandhoppers, while the shallow waters just beyond the low water mark provide a nursery ground for small fish.

### Lugworm

*Arenicola marina*

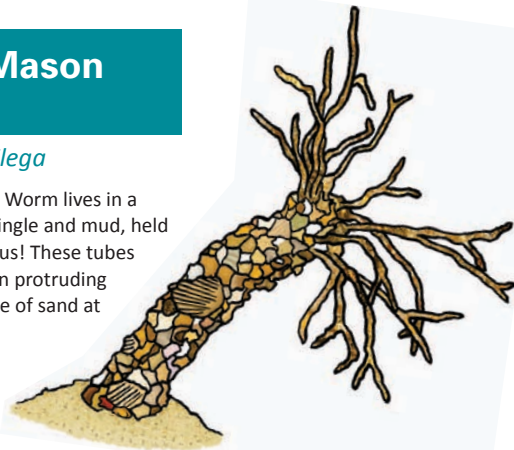


This worm can reach 20cm long but is rarely seen as it lives buried in U-shaped tubes in the sand. Obvious casts of coiled sand and small depressions mark where the lugworm tube is. The worm itself looks a lot like an earthworm but is darker red in colour.

### Sand Mason Worm

*Lanice conchilega*

The Sand Mason Worm lives in a tube made of shingle and mud, held together by mucus! These tubes can often be seen protruding above the surface of sand at low tide.



### Common Cockle

*Cerastoderma edule*

This well-known mollusc has a solid shell consisting of two valves. The shell has distinctive ribs and growth lines, and is pale yellow or brown in colour. Common cockles are preyed upon by many animal species, including wading birds and humans.



### Masked Crab

*Corystes cassivelaunus*



The Masked Crab is a burrowing species, with markings on its shell which are said to resemble a human face (hence the name). When buried, the Masked Crab uses two long antenna to form a breathing tube, down which oxygen-rich water can flow.

Sandy shores are home to a larger variety of wildlife than you might think. The creatures are well hidden so you have to look carefully!

## Brown Shrimp

### *Crangon crangon*

The Brown Shrimp prefers areas of fine, muddy sand or gravel and is difficult to spot due to its cryptic colouration. It has a flattened shape and often buries itself in sediment, making it even more difficult to spot.



## Razor Shells

### *Ensis spp.*

A distinctive, elongated rectangular shell that is often found on sandy beaches. Razor shells burrow down into the sand to avoid predation

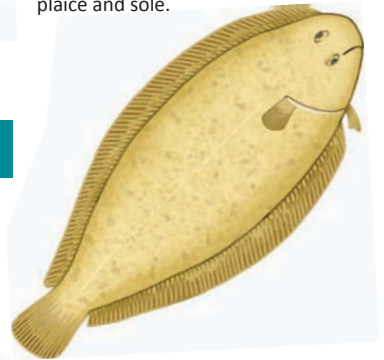
using a muscular foot and get their name from the shell's resemblance to the old style cut-throat razor.



## Flatfish

### of the Order Pleuronectiformes

As their name suggests, flatfish are characterised by their flattened body, sideways mouth and their ability to camouflage against the surrounding sea floor. Juvenile flatfish of several species can be found over sand, close inshore. These include flounder, plaice and sole.



## Ragworm

### various species

The name "ragworm" is used to describe several species of annelid worm. They are often found under rocks, in sediment and in estuaries. Colour can vary depending on species but ranges from green to reddish-brown. Ragworms form an important food source for shorebirds, alongside being excellent bait for recreational sea anglers.







# Strandline

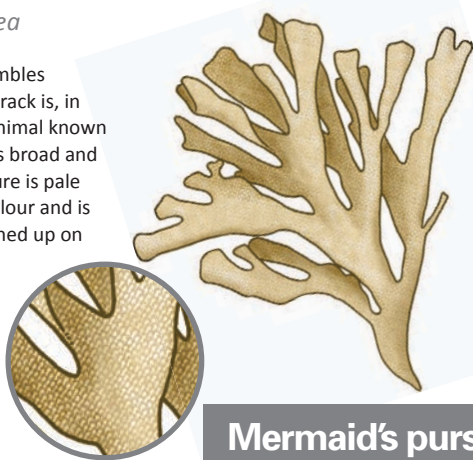
## North Sea Marine Life

What gets washed up on the strandline can give us a good indication of what is living offshore.

### Hornwrack

*Flustra foliacea*

Although it resembles seaweed, Hornwrack is, in fact, a colonial animal known as a bryozoan. Its broad and branched structure is pale grey-brown in colour and is often found washed up on the strandline. Hornwrack has a distinctive lemony smell when fresh!



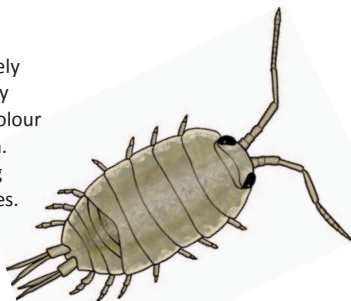
### Mermaid's purses

Commonly found on the strandline, these are the egg cases of sharks and rays. The two different shapes indicate from which group the egg case originated. If it has long, curly tendrils at each corner it is likely to be from a catshark, whilst 'horns' indicate it is from a species of ray.

### Sea Slater

*Ligia oceanica*

This marine crustacean is closely related to the woodlouse. They can reach 3cm in length and colour varies from grey to olive green. They are characterised by long antenna and obvious black eyes.



### Sandhoppers

Amphipod crustaceans of the Family Talitridae



These small crustaceans live and breed in rotting seaweed and detritus and carry out an important role in processing the huge amount of dead organic matter washed up each day. When disturbed they can jump large distances in order to escape.

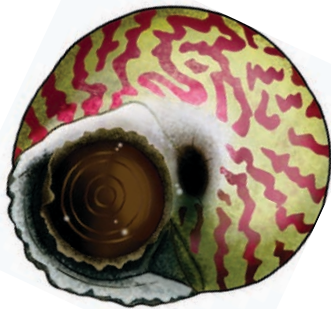


# Climate Change & Invasive Species

As the distribution and frequency of these species change, we can learn more about the warming climate of the North Sea and the spread of new species to the area. Whilst some species may disappear altogether, others could arrive from elsewhere.

## Purple Topshell

*Gibbula umbilicalis*

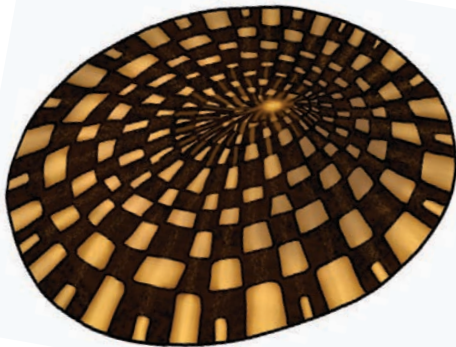


This snail is roughly cone-shaped, dull greenish grey in colour with red or purple stripes. They live on sheltered rocky shores but are often difficult to identify, often looking similar to the Grey Topshell. Although predominately a southern species, as sea temperatures rise it may spread further north.

## Tortoiseshell Limpet

*Tectura testudinalis*

This small conical limpet is dull white, grey or brown in colour with reddish lines radiating out from the centre. It is confined mainly to the north of England and Scotland but as the climate changes it may decline or move further north. Yorkshire is towards the southern edge of its range.



## Slipper Limpet

*Crepidula fornicata*

This intertidal mollusc is often found living in stacks and competes with other filter feeders for food and space. Whilst native to the Eastern USA it has now been introduced to other areas, including the UK. Its range is extending northwards, but is currently limited by a minimum water temperature.

