



BIG SEAWEED SEARCH

A partnership between The Natural History Museum, the Marine Conservation Society and community scientists, like you. Join us to take a closer look at UK seaweeds, to better understand and protect this vitally important habitat.

 **NATURAL
HISTORY
MUSEUM**


**MARINE
CONSERVATION
SOCIETY**

Meet the scientist

This is Professor Juliet Brodie. Juliet is a research scientist studying seaweeds at the Natural History Museum in London and leads the Big Seaweed Search.

“The Big Seaweed Search survey results enable me to record the diversity of seaweeds across the UK’s coasts and – together with other scientists - understand how seaweeds are affected by environmental changes. This will help us to take action to protect seaweeds and the wildlife that depends on them.”



Why seaweeds?

The British Isles is globally important for seaweeds, being home to more than 650 species. Seaweeds create the underwater habitats that provide shelter and food for thousands of marine animals. They support commercial fisheries, are used in foods, cosmetics and medicines, absorb excess carbon from our atmosphere and even protect our coasts from storm damage. It’s important for us to monitor them so we can understand and manage these vital resources for the future.

Changing seas

The Big Seaweed Search focuses on three key environmental changes:

- sea temperature rise
- ocean acidification
- the spread of non-native species

These changes may affect where we find the 14 seaweeds in this guide.

Join the survey

When? All year round. Try to start your survey an hour before low tide. You can check tide times at www.tidetimes.co.uk

Where? Any shore around the UK. All shores are important for this research, but we record seaweeds that are anchored to hard structures such as rocks, sea walls and piers.

Who can take part? Everyone.

How long does it take? About one hour.

You will need

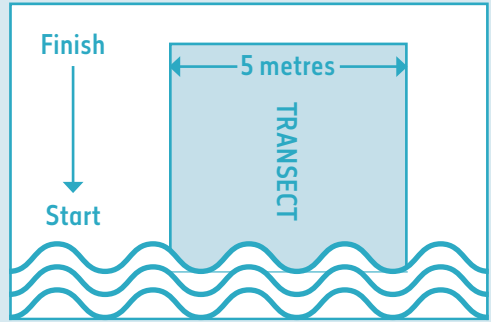
- Big Seaweed Search guide
- Big Seaweed Search recording form
- A smart phone or camera
- A pencil

Remember to take photographs.



1 Select your survey area

Select a five-metre-wide plot (about five adult paces) that runs from the top of the shore down to the sea. You can mark your survey area with a bucket, sticks or using natural landmarks.



2 Take a picture of your plot

Stand with your back to the sea and take a picture of your survey area. This gives our scientists a good idea of the conditions on the shore where you carried out your survey.



3 Get seaweed spotting.

Walking away from the sea, carefully explore the whole of your plot for about one hour. **Only record species if they are attached to rocks or other hard surfaces.** You don't need to record any species you find that aren't listed in this guide. If you aren't sure, check their identifying features. Ignore any seaweed washed up on the beach too, as it may have come from another place.



When you find one of the target seaweeds:



For each species you find, take photos of any identifying features.



Tick it off as 'present' on your recording form.



Record its abundance as band-forming, patchy or sparse - If you later find a bigger patch, update your recording form.



Band-forming

An uninterrupted band of seaweed right across the width of your five-metre plot.



Patchy

Large patches of seaweed (over one metre) which do not cover the width of your plot.



Sparse

Small patches of seaweed (less than one metre across).

4 Enter your results

Now, the really important bit.

Tell us what you found and upload your photos using our online form.
www.bigseaweedsearch.org.

Photos are essential for us to be able to use your results.

You can even enter your results on the beach using your mobile phone.

5 What happens next?

After you have submitted your results, a seaweed expert will confirm your identifications using the pictures you have uploaded.

This means that we will be able to use your data in scientific investigations and reports.

You can check out what other seaweed searchers spotted on our interactive online map.

Staying safe on the seashore

- Take a friend and a mobile phone so you can call for help if you need to.
- Rocky shores have many trip hazards and can be slippery. Wear sturdy footwear and walk slowly.
- Don't survey in bad weather. Stormy or windy weather can make the seashore dangerous.
- Dress for the weather. You might need a raincoat or sunscreen.
- Make sure you wash your hands after touching the seaweeds.

We'd love to hear what you got up to, you can share your stories with us on Twitter

@NHM_London @MCSUK #SeaweedSearch

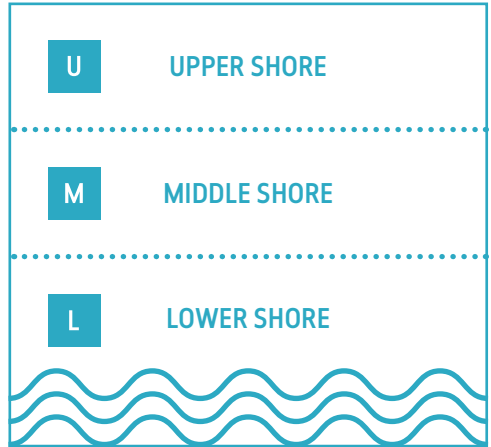
www.bigseaweedsearch.org seaweeds@nhm.ac.uk

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Shore Level

Different species of seaweed have adapted to being out of the water for longer than others as the tides change. You will find species that can survive out of water for longer further up the shore than those that can't. Where you are on the shore can therefore help identify which species you might encounter.

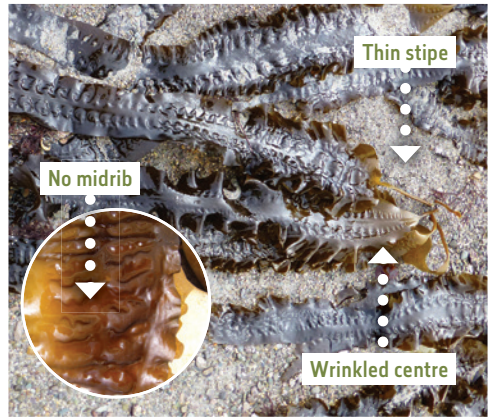
The letters in the bottom right corner of the species photographs indicate if you're likely to find the species in the Upper, Middle or Lower parts of the shore.



1 Dabberlocks
Alaria esculenta

max
1.5m

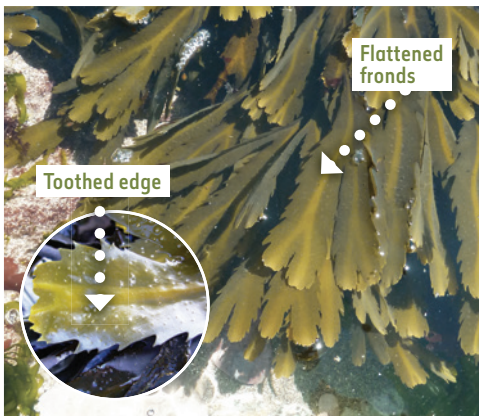
L



2 Sugar kelp
Saccharina latissima

max
1.5m

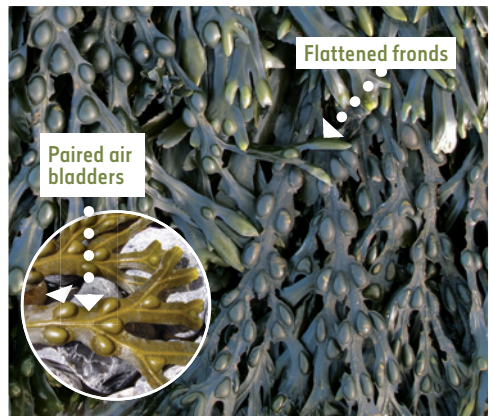
L



3 Serrated wrack
Fucus serratus

max
60cm

L



4 Bladder wrack
Fucus vesiculosus

max
90cm

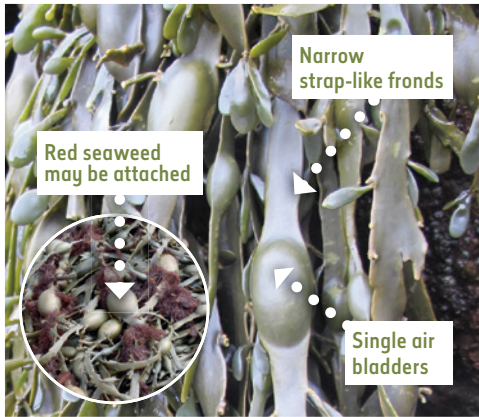
M

Sea temperature rise

We have seen a 2°C increase in sea surface temperature around Britain over the past 40 years. Evidence suggests that cold water seaweeds are moving further north, and the reach of warm water seaweeds is expanding. Recording the eight seaweeds below helps us to monitor any change because their distribution may be affected by sea temperature rise.

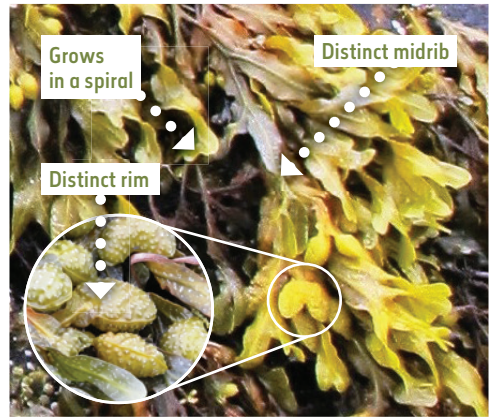
Top Tip

Try not to rely too much on colour for identification - these seaweeds vary from vivid green through to brown or almost black.



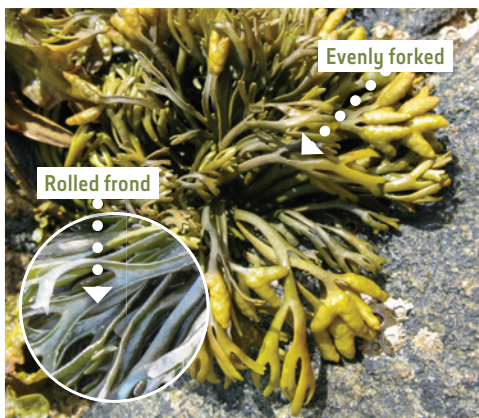
5 Knotted wrack
Ascophyllum nodosum

← max 1.5m → M



6 Spiral wrack
Fucus spiralis

← max 20cm → U



7 Channelled wrack
Pelvetia canaliculata

← max 15cm → U



8 Thongweed
Himantalia elongata

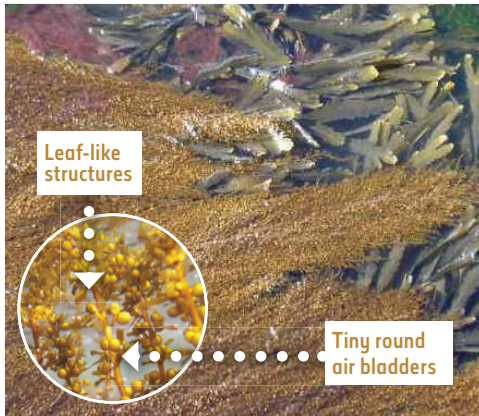
← max 1.5m → L

Non-native species

Non-native species of seaweed are not historically found in our waters but arrive due to human activity or environmental change. They have been living around the British Isles for over a century, but in recent years have begun to arrive more frequently. As they have escaped their normal controlling predators and are well suited to their new environment, they grow well and often outcompete other species for food, light or space.

Top Tip

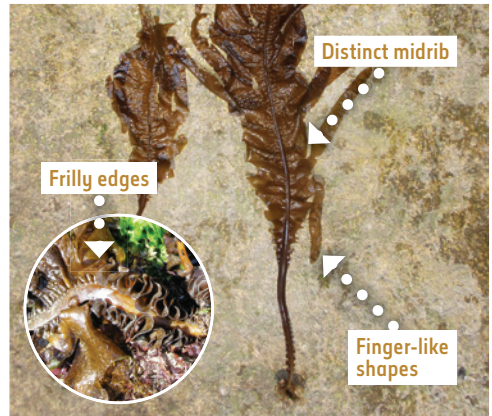
It is easier to identify fine branched seaweeds when they are submerged in water e.g. in a rock pool, as this causes the branches to spread out and reveal their key features.



9 Wireweed
Sargassum muticum

max
2m

L



10 Wakame
Undaria pinnatifida

max
3m

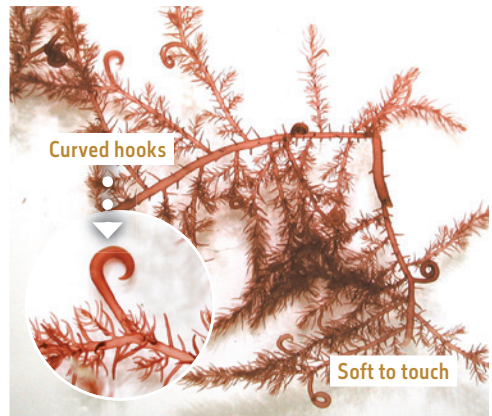
L



11 Harpoon weed
Asparagopsis armata

max
30cm

L



12 Bonnemaison's hook weed
Bonnemaisonia hamifera
(SW England only)

max
20cm

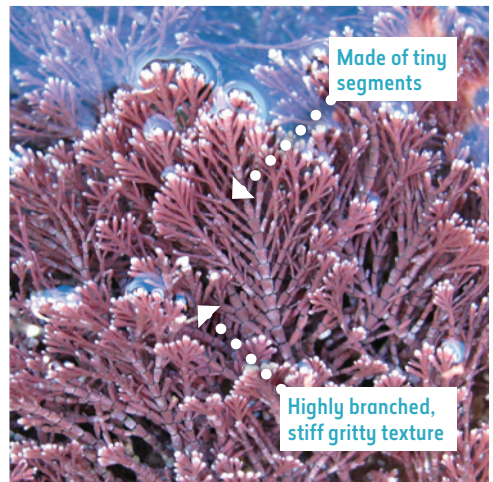
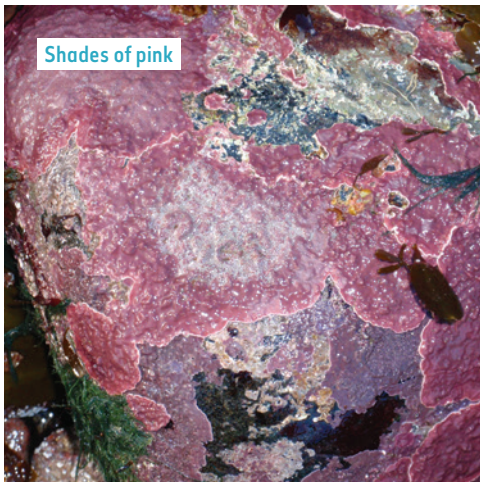
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Ocean acidification

Over the past few decades, there has been a significant increase in the amount of carbon dioxide in the atmosphere. Around half of this is absorbed by the sea, which makes the water more acidic. This may corrode the chalky skeletons of some seaweeds such as those shown below, and result in changes to their abundance and distribution.

Top Tip

You could easily miss these small seaweeds, which may be covered by larger brown seaweeds. Search thoroughly, looking underneath the larger seaweeds and in rockpools.



13 Calcified crusts



U

14 Coral weeds



U