



Take a walk along the coast and help us to monitor the effects of climate change and invasive species on our seaweeds

All about seaweeds

Seaweeds are a marine group of simple plant-like organisms called algae. Extracts from seaweeds are used in many everyday products, including foods, shampoos, cosmetics and medicines. You can find seaweeds at any time of the year.

Seaweeds are at the bottom of the marine food chain. They have the same role that plants do on land – turning the sun's energy into food whilst removing carbon dioxide from the air. Many animals rely on seaweeds for food and shelter. This chart will help you to identify 12 seaweeds that we would like to find out more about.



Although only small, limpets are one of the main predators of seaweed.

Why seaweeds?

The distribution of seaweeds around Britain's shores is changing. Many species are responding to climate change and rising sea levels. Wireweed, an invasive species first recorded in the UK in 1973 from the Isle of Wight, is now found on shores throughout southern England and is spreading north.

By taking part in **The Big Seaweed Search** and returning your results to us, you can help to monitor the effects of invasive species and climate change on the UK's marine life.



How to do the survey

This survey is easy and fun. All you have to do is go for a walk along your chosen seashore! We want to survey **living** seaweeds, so choose a shore that has some **rocks**. On sandy beaches seaweeds are washed up by the tide and are dead. Walk along the shore and note down which of these 12 seaweeds you see. For each one, answer the questions on the back of this guide.

Unlike land plants, seaweeds have no branches and leaves, but instead they have **fronds**. Looking at the shape and colour of the fronds will help you to identify the seaweed. Some fronds have a ridge running down the centre called a **mid-rib** and some have air-filled bubbles called **bladders**.

 maximum length, but can be much shorter

Egg Wrack *Ascophyllum nodosum*



Has single large (1-5cm) egg-shaped air bladders along the length of its strap-like fronds. Each bladder represents one year of growth.  1.5m

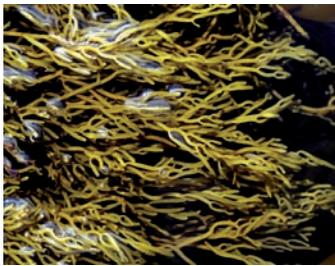
Bladder Wrack *Fucus vesiculosus*



Has round air bladders (like bubblewrap) usually in pairs either side of the mid-rib.  1m

Bifurcaria bifurcata

Forked ends



Rounded branches that fork in two towards the end. Seen in rock pools.  50cm

Channelled Wrack *Pelvetia canaliculata*



Fronds are rolled lengthwise to form a channel. May have bumpy v-shaped swellings at end of fronds. Can dry out completely to become black and crispy.  15cm

Spiral Wrack *Fucus spiralis*



Distinct rim



Fronds flattened with straight edges and a mid-rib. Often grows spirally twisted. May have bumpy v-shaped swellings at end of fronds that usually have a distinct rim.  70cm

Toothed Wrack *Fucus serratus*



Toothed edges



Fronds flattened with toothed edges and a mid-rib.  1.5m



Take care

Do the survey with a friend who can help if things go wrong and take a mobile phone with you (but be aware that in remote places there may be no reception).

Check tide tables. It is safest to visit the seashore when the tide is falling. Make sure you don't get cut off by the tide and avoid crossing deep gullies between rocks.

Rocks may be slippery and sharp. Wear suitable footwear.

If you touch the seaweeds, make sure you wash your hands before eating.

Next is the limpet count! Limpets are animals with shells (or molluscs) that eat seaweed. Pick any spot on your seashore where there is seaweed. Time yourself for **1 minute** and record how many limpets you can find within a 3m radius of where you are standing.

Dabberlocks *Alaria esculenta*



← Mid-rib

The large, narrow, slightly wavy fronds have a distinctive mid-rib and are often torn. 5m

Sugar Kelp *Saccharina latissima*



A large crinkly frond with wavy edges. Looks similar to Dabberlocks but has no mid-rib. 4m

Thongweed *Himanthalia elongata*



'Buttons'

Starts growing as a small 'button' from which long, narrow, flattened straps develop. No air bladders.

1.5m

Wireweed *Sargassum muticum*



Fronds divide into many branch-like and leaf-like sections. Can have round structures like baubles on a Christmas tree. 4m

Red seaweeds *Corallina* species



A stiff, finely-branched coral-like pink seaweed made up of many tiny segments.

Green seaweeds *Ulva* species



Out of water



Underwater

Bright green, delicate, lettuce-like fronds.

Now answer these questions

Where are you?

Write down the name of the beach, the nearest road, or a detailed description of where you are. Take a photo if you can (try to include a landmark). Write down today's date.



What is your seashore like?

Is it: **a** almost all rock; **b** almost all sand or mud with just a few rocks; **c** somewhere in between.

Is it: **a** sloping; **b** almost flat.

What seaweeds have you found? Whenever you spot a new type of seaweed, record the following...

Is it: **a** underwater in a rock pool; **b** out of the water on a rock.

How much of it is there? **a** lots – it is covering most of the nearby rocks; **b** not very much – I can just see one or two pieces; **c** somewhere in between.

Take a photo of each species if you can.



How many limpets did you find in 1 minute?

Now send us your results! It is really important that you tell us which seaweeds you have seen today. By sending us your results, you will be helping to track the invasive Wireweed and adding to important research into how climate change is affecting our marine life. You can fill in your survey results on our website <http://www.nhm.ac.uk/seaweeds> or post them to The Big Seaweed Search, Department of Botany, Natural History Museum, Cromwell Road, London. SW7 5BD. **Thank you!**



The British Phycological Society encourages all aspects of the study of algae. Algae are a large and diverse group of simple organisms. They include tiny plankton that float in ponds, rivers and the sea, the green slimy coatings that you find on damp rocks and in fish tanks, and the seaweeds you commonly find on the seashore.

www.brphycsoc.org



Open Air Laboratories (OPAL) is an exciting initiative that aims to get everybody involved in exploring, studying but most of all enjoying their local environment. OPAL will be running a programme of events and activities until the end of 2012.

www.OPALexplore.org

Developed by the British Phycological Society, Natural History Museum and Field Studies Council. Photographs by Juliet Brodie, Mike Guiry (www.AlgaeBase.org), Lucy Carter, Francis Bunker and Christine Maggs.

