



Big Seaweed Search Feedback

June 2016 – February 2020



Dear All,

Thank you. A huge thank you for taking part in the Big Seaweed Search. We really value your efforts. Your contributions are extremely important. They are helping us to map seaweed distributions on our shores which is vital information to help us understand the impact of climate change, ocean acidification and non-native seaweeds on our shores.

It will take time to pick up change, but already you are helping us to gain invaluable baseline information.

Highlights include the wide range of sites surveyed and some fabulous photos. Keep uploading your images as this enables us to verify the results and make them scientifically useable.

I've put together some key findings here so that you can see how you are doing.

I really hope that you will continue to do the Big Seaweed Survey and to encourage many more people to join in.

Juliet Brodie

Prof. Juliet Brodie, Big Seaweed Search

Introduction

The Big Seaweed Search has been running in its current form since June 2016. Surveys submitted are steadily increasing with time and results are enabling us to build up a picture of how these seaweeds are distributed around the UK. However, we have also identified some problems with the data. This feedback reports on key findings so far and what to do to overcome the problems to improve data quality.

How many surveys submitted?

There have been 376 survey results recorded between 1st June 2016 and 19th February 2020 (Table 1, Fig. 1). The number of surveys has increased steadily between 2017 and 2019.

Table 1. Number of surveys submitted

Dates	No. of surveys
Jun – Dec 2016	76
Jan – Dec 2017	78
Jan – Dec 2018	95
Jan – Dec 2019	103
Jan – Feb 2020	15
Total	376

How many species have been misidentified?

All seaweeds can be misidentified but some are extremely hard to identify. In Table 2, species highlighted in green, had the least proportion of records rejected (<30% misidentified), and are the easiest to identify. Species highlighted in amber (30-50% misidentified) can be tricky to identify, and those highlighted in red (50-100% misidentified) are difficult or very difficult to identify. Only one record of *Bonnemaisonia hamifera* (Bonnemaisonia's hook weed) was correctly identified but there were only a small number of records. *Alaria esculenta* (Dabberlocks) and *Undaria pinnatifida* (Wakame) also proved difficult to identify with very high numbers of misidentifications. Wakame, a robust brown seaweed species, was frequently misidentified as filmy species, including *Porphyra* spp. (Laver) which are red, and *Ulva* spp. (Sea Lettuce), which are green.

Where have most surveys been done?

There are records from England, Wales, Scotland and Northern Ireland although south-west England and south Wales are survey hotspots. This probably reflects ease of access, popular holiday resorts with plenty of rocky shores and staff in place to train trainers and organise/lead surveys.

What are the most common species of seaweed identified?

The wracks are well represented (Table 2). These brown, habitat-forming seaweeds give many of our rocky shores their characteristic brown zone at low tide. The most common species recorded is *Ascophyllum nodosum* (Knotted wrack; Fig. 3).

Which areas need targeting for surveying?

Some areas of the UK coast, such as much of the East Anglian coast, and parts of north-west England have very little or no rocky shore, hence few or no records. Seaweeds can be found in these areas on e.g. wooden groynes, concrete structures or other man-made constructions. Other areas where there are few or no records need targeting, including parts of the Northern Ireland coast, the west and north Welsh coast, the north and east coasts of Scotland, the Outer Hebrides and parts of the south coast of England, including the Isle of Wight.



Fig. 1 Survey locations

Table 2. Number of records accepted or rejected after removal of those without images

	Common name	Records		Proportion rejected (%)*
		accepted	rejected	
<i>Alaria esculenta</i>	Dabberlocks	2	16	83
<i>Ascophyllum nodosum</i>	Knotted wrack	158	95	26
<i>Asparagopsis armata</i>	Harpoon weed	12	63	51
<i>Bonnemaisonia hamifera</i>	Bonnemaisonia's hook weed	1	11	87.5
<i>Calcified crusts</i>	Calcified crusts	90	53	22
<i>Coral weeds</i>	Coral weeds	83	69	33
<i>Fucus serratus</i>	Serrated wrack	136	83	27
<i>Fucus spiralis</i>	Spiral wrack	72	70	36
<i>Fucus vesiculosus</i>	Bladder wrack	138	84	27
<i>Himanthalia elongata</i>	Thong weed	15	46	65
<i>Pelvetia canaliculata</i>	Channelled wrack	60	66	52
<i>Saccharina latissima</i>	Sugar kelp	38	51	45
<i>Sargassum muticum</i>	Wire weed	35	31	35
<i>Undaria pinnatifida</i>	Wakame	2	13	80



Fig. 3. *Ascophyllum nodosum*

*Figures in this table are only for those entries with images. A mean of c. 40% were rejected due to no image

The importance of images

Taking and uploading images is an essential part of the survey. The photos are used to verify the data. All data without images are not used in the analysis.

Examples of some excellent images



This is an example of one the stunning images that you have uploaded. It's really clear to see *Himanthalia elongata* (Thong Weed) in the foreground.



We really appreciate the effort made here and in the image below with the use of labels.



A good example of a coral weed.

Identifying *Undaria pinnatifida* (Wakame)



An example of this species showing the robust, corrugated margins



An immature frond. Note midrib forming.



A mature frond to give an indication of scale. Note distinctive midrib.

What are the problems when submitting data to the website?

We know that a lot more people are doing the Big Seaweed Search than are submitting records to the website.

Uploading data

We are also aware that uploading the data into the online recording site does take a little time and effort.

Unfortunately, there is also no acknowledgement once the record is completed. We hope to rectify this. Please don't be put off by the website. Allow a little extra time to upload the data. You can also upload more than one photo for each species for a site.

Examples of unusable records



This image shows unattached *Saccharina latissima* (Sugar kelp) which may have drifted from a different location and therefore not valid.



This image was recorded as *Himanthalia elongata* (Thong Weed) but shows Snakeslock anemones.



Porphyra (Laver) misidentified as *Undaria pinnatifida* (Wakame)



Ulva (Sea lettuce) misidentified as *Undaria pinnatifida* (Wakame)

Future surveys

It would be fantastic to see the number of surveys increase substantially per year.

Repeat surveys (monitoring)

If can repeat your survey at the same part of a beach every year, that would be great. It would provide a very useful time series.