

# Seaweed vs. limpets

Does the balance between algal cover and grazers vary around the UK?

CAPTURING  
OUR COAST



## What do we want to know?

Limpets, common molluscan grazers in the intertidal zone, are known to have an important role on rocky shores. Limpets graze on very young algae and can prevent them from growing into an algal canopy that shades and protects other animals and seaweed from light and desiccation. The amount of this algal canopy can play an important role in determining which animals and seaweeds thrive on the shore. Some years, there are lots of limpets and less algal canopy. Other years, there are less limpets and more algal canopy. Your data will be combined with data from other CoCoast citizen scientists from other hubs around the UK in order to find out if there are patterns in the balance between algae and limpets across the UK.

## Where?

1. Choose an exposed rocky shore to survey. This can be any shore that doesn't have lots of egg wrack (*Ascophyllum nodosum*) on it, because egg wrack grows on sheltered shores.
2. Take a photo of the shore from the top of the shore showing the rocky intertidal area.
3. Identify the area of the mid shore you should be recording in. Use biological zonation to identify the mid shore (dominated by bladder wrack, barnacles and limpets). If the main seaweed in the area is serrated wrack, you are too low down the shore. If you are at the top of the barnacle zone, where there are fewer barnacles, you are too high. If you are unsure, please contact [cocoast@bangor.ac.uk](mailto:cocoast@bangor.ac.uk) for advice.

## Equipment list

Your CoCoast quadrat

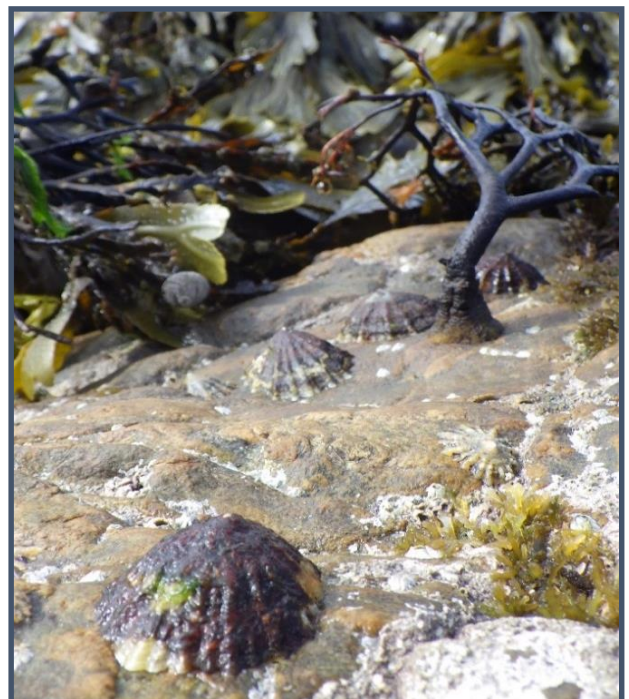
A 15cm or 30 cm ruler

Clipboard

Recording sheets

Camera

Pencils



## Method

1. Take a photo looking along the mid shore zone where you will be doing your survey.
2. Randomly place your quadrat. If the quadrat has fallen within a large crevice or a rock pool, move the quadrat to the side.
3. Take a photo of your first quadrat.
4. Looking down from above, and without moving any algae, measure and record the total percentage cover of furoid algae (see the furoid ID guide). You will get a value between 0 and 100%. Some of the algae will form a canopy, some will be smaller - record it all as the same no matter what size it is. We are interested in how much furoid algae covers the rock surface so don't worry about whether holdfasts are located inside or outside the quadrat.
5. Identify each species of canopy algae and add the names to the recording sheet.
6. Measure and record the percentage cover of each species of canopy algae.
7. Carefully fold the canopy algae out of the quadrat so you can see what is underneath.
8. Measure and record the percentage cover of all other algae that is not furoid or canopy. This will usually be turf forming algae less than 15cm in length. Do not include pink crust.
9. Measure and record the percentage cover of barnacles.
10. Count and record the number of limpets in the whole quadrat.
11. Using a ruler, measure and record the length of each limpet to the nearest millimetre. If you have over 30 limpets in your quadrat, use the table next to this to work out how many limpets you should measure the length of.
12. Move on to the next random quadrat! You should complete between 10 and 15 quadrats in total. You do not need to take any more photos of quadrats.
13. Photograph or scan your recording form and email it to [cocoast@bangor.ac.uk](mailto:cocoast@bangor.ac.uk) - Don't forget to attach the 3 photos!

### How to randomly place quadrats:

1. Write down a phone number on your data sheet
2. Cross out all '0'
3. The remaining sequence is your random numbers
4. Walk the number of steps specified by the first number along the shore parallel to the waterline, ensuring you stay within the mid shore zone
5. Place quadrat and sample.
6. Repeat

### How many limpets should I measure?

Number of limpets counted.	Measure all limpets in....
30 or less	Whole quadrat
30-39	8 rows of 10 squares
40-59	6 rows of 10 squares
60-79	4 rows of 10 squares
80-99	3 rows of 10 squares
100-150	2 rows of 10 squares

