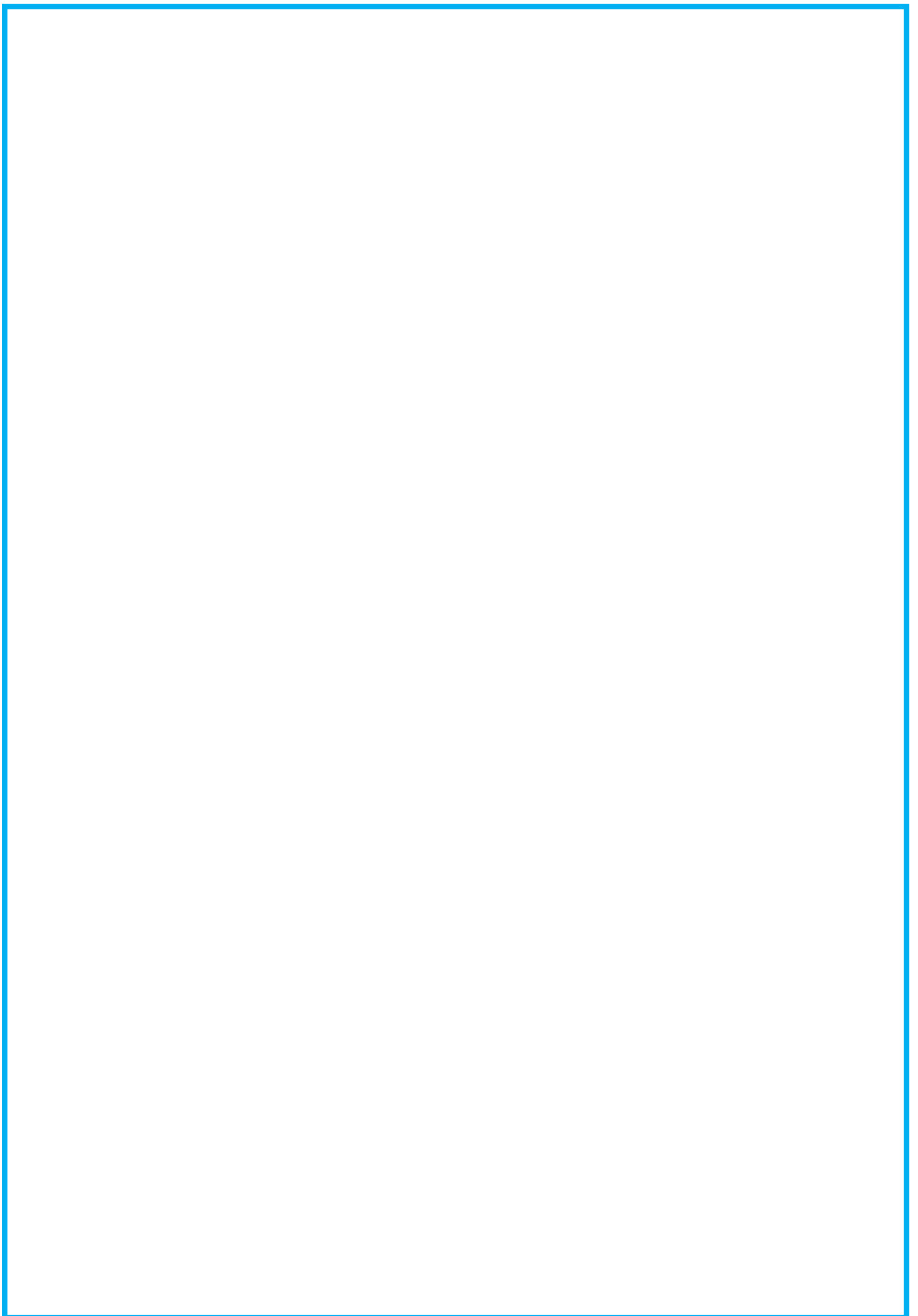


CRAB WATCH

A Citizen Science initiative to study the distribution of crab species around the coast of Europe.



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About Crab Watch

Crab Watch is a citizen science initiative developed as part of the Sea Change Project.

The initiative explores how citizen science can be used as a tool for increasing Ocean Literacy, as well as collecting scientific data. The data collected by our citizen scientists will be used to enhance knowledge of the changing distribution of native and non-native crabs, as well as information to support environmental management across Europe.



Survey Aims

The goals of Crab Watch are:

- 1) To raise awareness of the changing distribution of native and non-native crabs across Europe.
- 2) To encourage people to explore and engage with their seas ocean.
- 3) To use citizen science to generate valuable scientific data and to make these results freely available.

Before you go down to the shore there's a few things you need to be aware of...



Crab Watch good practice

- 🦀 Before starting a survey you should check the weather forecast and tide times. Ideally surveys should be done at low tide.
- 🦀 When walking over rocks, tread carefully, they may be slippery and unstable or you may damage plants and animals. Cliffs should also be avoided as they may be unstable.
- 🦀 Do not take living plants or animals home with you. Try to take only photographs. If you do take shells home, make sure they are empty.
- 🦀 Take your litter home, it can be dangerous to people and wildlife.
- 🦀 If you find anything unusual do not touch it, if you can, report it to the responsible person.
- 🦀 Crabs generally like to hide under seaweed, boulders and stones. If you move anything on the shore during your search gently put it back where you found it.
- 🦀 Try not to wander too far from your group, always keep them in sight. If on the shore alone, always let someone know where you are.
- 🦀 **Be sensible and safe:** then you will be able to enjoy your seashore experience to the fullest!

Handling crabs

When you find a crab hold it firmly with your fingers placed on each side of the crab's carapace. Be very careful of the crabs claws and when handling crabs with spines.

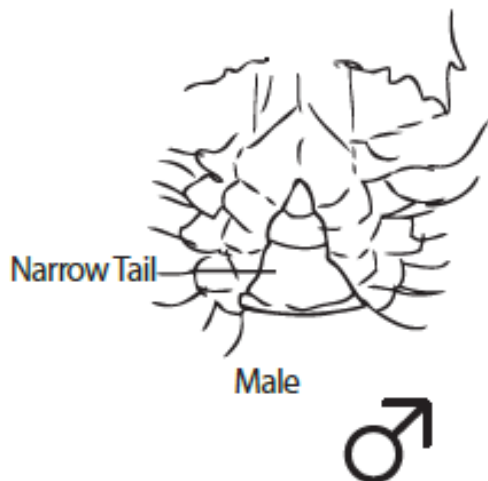
If you find a soft bodied crab or a crab carrying eggs, be extra careful with them, record them and return them as quickly as possible to where you found them.



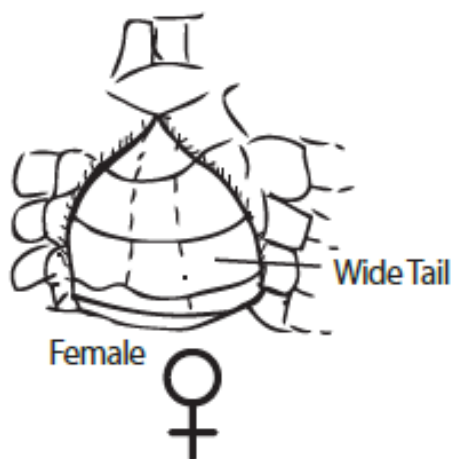
How to identify the sex of a crab

Slowly turn the crab over and look at its tail.

If the crab is male, the tail will be narrow and have a smooth edge.



If the crab is female the tail will be much wider with a feathery edge.



Another easy way to identify a female crab is if they are carrying eggs underneath their tail. If you do find a female with eggs, don't forget to record her as quickly as possible and return them to where you found them.



The Protocols

The following protocols have been put together to allow flexibility when surveying crabs and organising events. The coastline of Europe has a variety of different coastal habitats, and while one protocol might work really well for a rocky shore, this might not work so well for a harbour town, or a coastline of sand dunes.

Protocol 1: Exploratory shore survey.

Suitable for any intertidal upper and lower shore with rocks, man-made structures, seaweed or any other places for crabs to hide.

Equipment:

- Clip board
- Survey Forms
- GPS Device/Phone
- Camera/Phone
- ID Guide
- Nets
- Buckets
- Watch



Method:

- 1) Fill out the top section of your survey form.
- 2) Identify your survey area either using landmarks or cones, record the central point of the survey area using a gps/device or phone.
- 3) Fill your buckets with detached seaweed/sand and some seawater to minimise stress (don't add rocks as these could damage the crabs). If it is hot, replace the water regularly.
- 4) Search your area for 30 minutes, placing all crabs collected into your buckets. Try to keep bigger crabs separate if possible.
- 5) Once the time is up, use this pack and the ID guide to identify species, sex and measure all the crabs and record the information on the provided survey form.
- 6) Take photos of each species you find as well as any photos of any unidentified crabs and record them on your survey sheet with a ? and a unique number i.e. ?+1, ?+2, etc, this code can then be used to label the photograph for identification later.
- 7) When you are finished, return your crabs to where you found them.

Protocol 2: Crab fishing from a structure.

Suitable for a harbour wall or jetty with a straight drop to the water and railings to stand behind for safety. If no railings are available, buoyancy aids or safety lines should be used. Ensure you are legally allowed to use drop-nets or fishing line in your chosen area prior to the activity.

Equipment:

- Buckets
- Clip board
- Survey Forms
- GPS Device/Phone
- Camera/Phone
- Watch
- ID Guide
- Crab nets (see section on crab nets for further information)
- Small pieces of bait (responsibly sourced fish, squid or chicken skin)
- Scissors

Method:

- 1) Fill out the top section of your survey form. Record a single point where you are fishing from using a GPS device/phone or at home with google maps (see additional protocol information).
- 2) Attach your bait to your drop-net or line (you may need some scissors to cut the bait into smaller pieces if required), then when ready drop your net to the seabed and tie your line to a secure object and leave.
- 3) After 5-10 minutes pull the net up and transfer any crabs you have caught into a bucket filled with some seaweed/sand and some water, or if there is no seaweed/sand near you, cover with some dampened natural material.
- 4) Re-bait your net if necessary and return the net to the water.
- 5) Whilst the net is deployed, record the information (sex, size, eggs....) on any crabs already caught. Mark the abdomen with a spot of lipstick (see 'why do we mark the crabs with lipstick?' section for more information) and return to the water.
- 6) Continue to do this for at least 30 minutes.
- 7) When you are finished, record your final crabs and return them to where you found them.

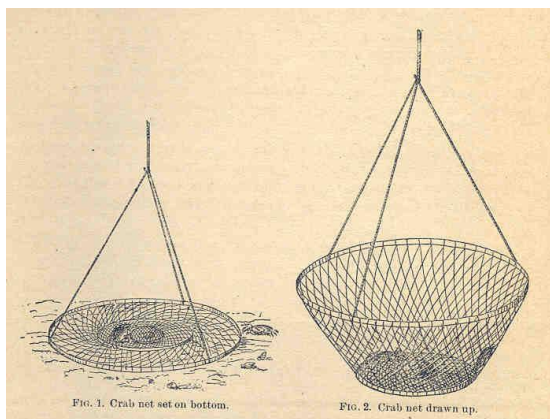
Additional Protocol information

- If you find a female crab with eggs or a soft bodied crab record them immediately and gently return them back to where you found them.
- Wash your hands after handling crabs, seaweeds and bait.
- Children should be supervised by an adult at all times.
- During your survey if you didn't find any crab species please submit your survey data without any crab records, as this is still important information for species distribution.
- For crab fishing: do not use hooks as this can be damaging to the crabs.
- When recording your locations latitude and longitude, if you cannot get a signal, use google satellite maps to find your location. Simply right click twice on your location, and the latitude and longitude should appear at the bottom of the screen (note: if you double click too fast it will zoom in, just try again, but with a pause between each click). You can also right click your point and select "where's here" which will also bring up your latitude and longitude.

Crab nets

If you don't have access to any crab nets, they are easily available to purchase online at an affordable cost.

The net should measure 30cm across if possible, with a mesh size smaller than 1cm. It should also include a weight and bait clip, with enough cord to reach the sea bed from your fishing position.



Example Recording Form


Please complete all parts of the survey form in as much detail as possible.



Survey Recording Form



Name & email address of lead member:	Jane Smith / j.smith@crabwatch.com			
Number of people in team:	6			
Site name/GPS Location:	Sunny beach / 12.34567, -1.2345678			
Date:	10/06/2100			
Activity Type (e.g. exploratory search, crabbing):	Exploratory Search			
Description of site (e.g. open rock, boulders, cobbles, mud):	Rocky shore with large boulders and rocky outcrops covered in seaweed and many rockpools.			
Start time:	10.30	End time:	12.30	Section 1

Species	Sex M/F/?	Eggs? y/n	Carapace width 	Did you take a photo?	Other Observations (parasites, soft mating, damage, etc.)
Common shore crab (<i>Carcinus maenas</i>)	F	yes	6-8	yes	missing one claw

Data Submission

You can submit your data online at <http://www.seachangeproject.eu/campaign/crab-watch> or via the app (COMING SOON).

If you have any difficulty submitting your data, please contact us on: crabwatch@mba.ac.u

