

What is Shoresearch?



Shoresearch is a volunteer recording scheme to identify the animals, plants and habitats at coastal sites throughout the North Sea region. Through dedicated surveys, Shoresearch will.....

- Establish a baseline dataset for intertidal marine wildlife
- Help to promote conservation of marine environments through identifying areas of local and national importance
- Highlight any changes happening within the habitat. These could include the appearance of southerly species extending their range north as a result of climate change or the arrival of alien and invasive species.

Over the long-term, Shoresearch data will allow us to make informed decisions regarding our marine environment, significantly helping with its continued conservation.

How was Shoresearch established?

Shoresearch was pioneered by the Kent Wildlife Trust as a companion to Seasearch and is now running successfully in several coastal counties. These include Hampshire & the Isle of Wight and since 2010, Yorkshire.

Who can get involved?

Anyone and everyone! All a Shoresearch volunteer needs is an interest in their local marine life. No previous marine knowledge is required. Leaders will be on hand to help in identifying species, while being 'in the field' is the best place to learn and improve identification skills.

Considerations when running a Shoresearch



Health and Safety

Each Shoresearch survey must be risk assessed prior to the event (using your standard local Wildlife Trust templates). At the start of each survey, the leader of the session must go through the Risk Assessment with the group of volunteers taking part, highlighting in particular site-specific risks.

Each Risk Assessment must consider and detail the following:

- **Task** – this will always be listed as a ‘Shoresearch Survey’
- **Date** – of the survey taking place
- **Name of the site and Grid Ref/GPS location**
- **Additional information** – such as the nearest town; if a First Aid kit will be present during the event; level of First Aid training of Leader etc.
- **Assessed by** – name of the person who carried out the Risk Assessment
- **Approved by**
- **Date of completion** – when the Risk Assessment was completed (this will always be prior to the event taking place)
- **Review date** – when the Risk Assessment should be reviewed. This will usually be for the next scheduled event
- **Nearest Hospital and Doctor**
- **Nearest Telephone** – include mobile phones

Potential Hazards that need assessment will include the following:

- Potential of drowning
- Trips, slips and falls
- Separation from the group
- Stings, bites and likelihood of bacterial infection
- Exposure
- Likelihood of unstable ground, loose cliffs etc
- Presence of vehicles
- Tides – times of high and low water
- Other site specific considerations

All risks should be considered in relation to the site the activity is occurring at and should indicate the likelihood of the risk occurring as well as the mitigation taken to prevent occurrence.

When choosing the actual site to be surveyed it is always good to ensure there is good public access (both on foot to the shore and concerning parking).

Running a Shoresearch session



Equipment required for each survey

- Risk Assessment
- Clipboard with volunteer information/contact details etc.
- Shoresearch recording form
- Dive slate or field notebook for recording throughout the session
- Pencils or pens to write with
- Field Study Council fold-out guides to aid with identification of species
- Other relevant seashore or species specific identification guides
- Handheld lens
- Aquarium nets may be of use
- White trays
- Digital camera
- First Aid kit/throw line
- Photo Consent forms (for under 18's)

As every shore is different, no two surveys will be the same. A simple survey format that can be applied to any Shoresearch session is to convene at the meeting point before walking down to the shore as a group. Here, undertake a basic introduction to the project, its aims and what the tasks will be for the session. Before commencing the survey, it is also important to go through the Risk Assessment verbally and to ensure participants see you have a hard copy of the assessment on your possession. It may be possible whilst at the location to point out specific risks to participants and highlight key 'no go' areas during the survey.

The start of the survey is also a good time to ask participants to provide you with their contact details (name, address, contact number, email and if they would like to receive further Trust information). Photography consent forms for children under the age of 18 should also be completed (each local Wildlife Trust will have their own policy regarding under 18's attendance. Please consider this prior to undertaking an event).

The survey requires participants to record the following information:

- **Species present** – only those that can be positively identified (either in the field or back at a classroom). If individuals cannot be positively identified to species level then genus or family level is acceptable.
- **An estimate of abundance** - Using SACFOR (Super Abundant, Abundant, Common, Frequent, Occasional, Rare) for each species, to be decided upon by the whole group. SACFOR can be subjective and focuses on relative abundance, e.g. if you see only one individual of a species during your survey it will be considered as 'rare'.
- **Whether the specimen is 'Live' or 'Drift'** - it is most important to record live specimens and attached seaweeds, however, it is good practice to also record specimens that have drifted onto the survey site. Such specimens could include animals, seaweeds or egg cases and drift specimens will be dominant at sites such as strandlines.
- **Whether a species has been photographed, alongside the identification number of the photograph and photographer name** - this can help in validation of records, particularly where there are two very similar species known to occur. Photos can also be sent to relevant experts if needed.
- **Name of the surveyor recording the species** – in the instance that the species was recorded as a group the Leaders name should be noted as the recorder. This information is extremely important as each species record needs to be assigned to an individual's name to provide a point of contact should further enquiry regarding the record be required.

All the above information should be collated as a group onto one Shoresearch recording form at the end of each survey. This ensures all data is kept together and that species presence and relative abundance is recorded as accurately as possible. Once this information is logged onto the form, the group can then collectively fill in the habitat details at the top of the form. Habitat details consider key features of the survey site; the size of the recording area covered during the survey; the level of exposure present at the site (guidelines to determine this are available) and the percentage estimates of the varying live cover and substratum – see forms for further detail.

Filling out the forms



Site and recorder details: This section can be filled in before the survey.

Shoresearch Intertidal Recording Form Single Habitat



Please use this form to record the species found at a single habitat at a single location (e.g. chalk reef, sandy shore or strandline on shingle) - Please use a separate sheet for different habitats at the same site.

<i>Date and time of survey:</i>	
<i>Name of Site:</i>	
<i>Name of contact:</i>	
<i>Address:</i>	
<i>Telephone:</i>	
<i>Email:</i>	
<i>Position of Survey (latitude/longitude or OS grid ref):</i>	
<i>Position taken from</i>	GPS OS Map

Date and time of actual survey

The Shoresearch Leader should fill in this section

Circle how you recorded the surveys position

Habitat details: This section should be filled in as accurately as possible and by a whole group consensus

Circle only one exposure

Only fill in if a particular zone of the shore is surveyed. If whole shore surveyed please leave blank

Estimate the area surveyed

Area involved in survey				5m X 5m	10m X 10m	m X m
Exposure of Site (please circle):				Position on Shore: upper / mid / lower		
Extremely exposed	Very exposed	Exposed	Moderately exposed	Sheltered	Very sheltered	Extremely sheltered

<i>Estimate of percentage of each type of substratum (total both columns together) and live cover (usually to nearest 5%, but can be 1% to show presence)</i>	Substratum	%	Substratum	%	Live Cover	%
	Bedrock		Mud		Algae (attached)	
	Boulders >256mm		Shells – empty/broken		Attached animals	
	Cobbles (64-256mm)		Artificial – metal		Mobile animals	
	Pebbles (16-64mm)		Artificial – concrete		Buried animals	
	Gravel		Artificial - wood		Bare rock	
Sand		Other		Bare sediment		

Please note main habitat and any particular features: draw a rough sketch if necessary (e.g. reef with gullies and thick cover of brown seaweed, patches of sand between rock)

Fill in each column using the instructions given

Note any key or unusual features of the site

Species list: This should be a comprehensive list of all species positively identified. For every species, each of the four columns must be completed.

Information regarding abundance and recording species is outlined here.

Species List

For each species found, mark whether it was **live (L)** or **dead/drift (D)** under the L/D column

Then estimate the **abundance** in the SACFOR column

S = Super Abundant **A** = Abundant **C** = Common **F** = Frequent **O** = Occasional **R** = Rare

If you are unsure on abundance mark with **P (present)**

For each species, please indicate the recorders name. If a photograph has been taken of the species please tick the last column and note the photo's reference number.

<i>Species</i>	<i>L/D</i>	<i>SACFOR</i>	<i>Recorders Name</i>	<i>Photo</i>
Porifera - sponges				
Cnidarians – sea anemones, corals, hydroids & jellyfish				
Worms				

The species table is divided by animal group to make recording straight forward and also to help in developing identification skills regarding marine phyla/animal groups etc.

Submitting the data



Any data gathered through Shoresearch needs to be validated in order to ensure data collected accurately reflects the day's survey and species recorded.

Paper forms can be submitted to the Yorkshire Wildlife Trust (marked 'Living Seas Team', 1 St Georges Place, York, YO24 1GN) for validation and data processing or data can be directly entered through the North Sea website – www.northseawildlife.org.uk. Through this website you will be given the opportunity to register and submit regular Shoresearch survey records.

Once submitted data is then inputted onto the national Marine Recorder database. This is the same database used for data gathered through Seasearch (volunteer dive data collection). This database is periodically uploaded into the National Biodiversity Network Gateway, and is then freely available to the public via the internet. A database of species records will also be kept by the Yorkshire Wildlife Trust to help support North Sea Advocacy and Awareness work and will be made available to all other Wildlife Trusts for use if required.

Adapting Shoresearch



There are many ways in which Shoresearch can be adapted to suit a particular audience or group. Events could range from Shoresearching with invited experts to study specific taxonomic groups in detail, to family scavenger hunts to see who can find the most species of seashell. It has a wide range of uses and can be easily adapted. Shoresearch forms can be adapted to suit a range of events, including: dedicated surveys; school groups undertaking introductions to marine survey; or for family shoresearches to enthuse parents and children alike about our fascinating marine life, while at the same time collating useful data.

Reporting

An annual Shoresearch Report will be produced by The Wildlife Trust's North Sea Project to summarise the findings of the North Sea coastal area. Individual Wildlife Trust's are also encouraged to produce locally specific reports. Examples can be provided if required. Reports not only provide evidence of the projects success, they can also be used when applying for potential funding and provide structure for future marine survey.

It may also be valuable to produce a periodical Newsletter to summarise findings, advertise upcoming surveys and provide further 'marine related' information. This can then be distributed by email to volunteer contacts in order to retain interest and encourage new participants to get involved.

Volunteer Recruitment



Below is an example of some of the core things to consider when recruiting for 'Volunteer Shoresearch Leaders':

Why do we need this volunteer? *(Background information)*

Shoresearch allows valuable data regarding intertidal habitats to be collected. This data will help us to develop a greater understanding and provide appropriate management to coastal habitats. All data received through this project is inputted into the national Marine Recorder database, and over time, will help us to monitor the effects of climate change and invasive species.

What is the volunteer role? *(Describe the role; make it interesting)*

Organising and leading intertidal marine Shoresearch surveys. This involves recording species present, their relative abundance and details regarding the habitat in which they live. This will be conducted using a standardised Shoresearch methodology and recording form. All data will be submitted to the Wildlife Trust for inputting onto Marine Recorder. The role will also involve carrying out risk assessments for each survey and promoting the Wildlife Trusts Living Seas programme where possible.

Experience, knowledge and skills needed for this role *(What is essential/desirable)*

- Good general knowledge of marine biology / ecology
- Intertidal marine life ID skills – desirable, however this is a great opportunity to learn
- Excellent leadership skills
- Experience of carrying out risk assessments - desirable
- A willingness to work outside on uneven terrain
- Enthusiasm
- Physically fit
- Driving licence and own vehicle (some sites may not be within reach of public transport)

What's in it for the volunteer? (*e.g. training, skills gained, social motivations*)

- Contribute to important marine survey work
- Gain experience in leading work groups
- Improve field identification skills
- Support and advice from the North Sea Marine team

What training is required to fulfil this role?

- **First Aid?** Yes – *note if you offer training to do this*
- **Other Essential:** Shoresearch methodology, Risk Assessments

Suggested questions to ask potential volunteers regarding the role:

- **What attracted you to the role of Volunteer Shoresearch Leader?**
- **What are you hoping to gain from the role?**
- **Do you have any previous experience that you feel will help in the role?**
- **Do you have your own vehicle and are you willing to travel to survey sites?** - *this is considerably useful*

Useful Identification Guides & Books

Highly recommended ★



Field Study Council Guides

- Field Studies Council fold-out chart- **Rocky Shore Name Trail** ★
- Field Studies Council fold-out chart- **Common Seaweeds** ★
- Field Studies Council fold-out chart- **Saltmarsh Plants of Britain** ★

Books

- **Collins GEM** – Seashore ★
- **Seasearch Guide to Seaweeds of Britain and Ireland** by Bunker, Brodie, Maggs and Bunker ★
- **Seasearch Guide to Sea Anemones and Corals** by Chris Wood
- **Hamlyn Guide Seashores and Shallow Seas** by Andrew Campbell
- **Sea Fishes and Invertebrates of the North Sea** by Lawson Wood
- **Seashore Safaris** by Judith Oakley – A very good all round book ★
- **A Students Guide to the Seashore** by Fish and Fish. An excellent handbook covering all species likely to be found on our shores. Straightforward keys make identification easier. ★
- **Handbook of the Marine Fauna of North-West Europe** by PJ Hayward and JS Ryland – An expensive but excellent ‘handbook’. The most comprehensive coverage of species, excellent line drawings, and keys for closely related species. ★
- **Collins New Naturalist Library (94) - Seashore** by Peter J Hayward. Long out of print but you can still pick up paperback copies for under £10. An excellent book for anyone wanting a more detailed look at seashores and seashore life. Finely balanced between ‘not too basic’ and ‘not overly technical’. Not an ID Guide.

Useful web resources

- www.marlin.ac.uk – website of The Marine Life Information Network. A whole host of information including species profiles with current distribution maps.
- <http://www.habitas.org.uk/marinelife/> - Encyclopaedia of Marine Life of Britain and Ireland. Species profiles.
- <http://www.seaweed.ie/index.html> - A website for all things seaweed, including NE Atlantic species profiles. Lots of interesting information beyond pure identification.
- <http://www.weedseen.co.uk/> - British Isles Seaweed Images.
- <http://www.nhm.ac.uk/nature-online/british-natural-history/seaweeds-survey/index.html> - details how to carry out a Big Seaweed Search, alongside lots of user friendly 'interesting stuff'!
- <http://www.britishmarinelifepictures.co.uk/> - a great photo set of UK marine life
- <http://www.marinephoto.co.uk/> - photos of British marine life from Paul Naylor
- <http://www.riverocean.org.uk/ocean/exhibition/digibooth/Strandlinehome.htm> - a basic introduction to strandlines

North Sea Costal Habitats



Rocky Shore

Rocky shores are those characterised by bedrock, cobbles and boulders. These shores are commonly covered with many different species of seaweed, which at first can make it hard to spot animals. Attached animals, such as barnacles, limpets and anemones dominate, while rockpools, cracks, and crevices provide shelter for mobile animals such as crabs, fish and periwinkles.

Where to look:

Strandline- the strandline is characterised by a line of debris and seaweeds. Sandhoppers may dominate, feeding on rotting plant matter, while items such as shells and egg cases indicate what is living just offshore. Common finds include several kelp species and whelk shells.

Rockpools- these are formed by depressions or holes in rocky substrata that retain water when the tide goes out. These usually contain the greatest variety of wildlife such as small fish, shrimps, anemones and crabs, whilst also providing attachment for seaweeds. Common finds include beadlet anemones, hermit crabs, butterfish and seaweeds.

Rocks and boulders- There may be many animals hiding underneath seaweed and rocks, and the closer you look the more you will see. Most of these animals are trying to stay moist until the tide comes back in. Be careful when picking up rocks, and make sure you put them back down exactly where you found them, making sure that you don't squash anything that's living underneath! Common finds on or under rock include bladder wrack, edible crabs, limpets and topshells.

Sandy Shore

As the name suggests sandy shores are mainly composed of sand. At first glance, they may seem quite empty, but sediment is teeming with life. Molluscs, crustaceans and worms dominate this hidden world.

Where to look:

Strandline- On flat sandy shores there may be more than one strandline, depending on where recent tides have come to. These strandlines often consist of seaweeds, mermaid's purses (shark and ray egg cases), dog whelk egg cases, shells and sandhoppers. Other common finds include razorshells, cockle shells, mussel shells and scallop shells.

Mud/sand flats- This is where most of the animals live, buried in the sediment to avoid drying out. Many live in J or U shaped burrows, with depressions or small piles of sand indicating where they are. Common finds include lugworms, ragworms and sand mason worms.

Things to think about when recording species;

Always return animals back to where you found them before they dry out. Don't take away too many items from the strandline as this is a habitat in its own right. It is easier to identify bivalve shells if you can find specimens where the two halves are still attached.

Try not to disturb the wildlife, and be careful when picking up animals like crabs. They can be vicious, but also have sensitive parts. Be careful when handling delicate animals such as starfish and sea urchins as they can be damaged easily.

Marine Life Classification and Identification



Identifying marine life can sometimes be tricky as names vary depending on your locality, who you are talking to, or whether someone refers to it by its Latin or common name. For example, we might identify a crab as an 'Edible Crab', whereas a fisherman may identify it as a 'Brown Crab' or a 'Pie-Crust Crab'. Those from Norfolk may call it a 'Cromer Crab'. All these common names refer to the same species *Cancer pagurus*.

Whilst most animal groups have representatives that live in the sea, there are also several groups of animal that are only found in marine environments. This not only adds to the diversity of species you may record, but adds to the complication of assigning species to the correct animal group. Also, many marine organisms, such as hydroids and bryozoans, look a lot like seaweeds when they are in fact animals!

Here is a quick introduction to the different groups of marine organisms that you are likely to encounter on the shore:

Sponges (Phylum Porifera)

- Simple filter-feeding animals living attached
- Surface covered in tiny holes with several pores
- Spongy texture
- No distinct body parts and grow in a variety of different forms

Cnidarians (Phylum Cnidaria)

- This group includes the sea anemones, soft corals, hydroids and jellyfish
- Flower-like appearance but actually animals
- Tentacles containing stinging cells used to trap food
- Live both solitary and colonially
- Can be brightly coloured

Segmented worms (Phylum Annelida)

- Bilaterally symmetrical (can be divided into two symmetrical halves)
- Body composed of segments with a gut running from the mouth to anus
- Can be free living or in protective tube

Crustaceans (Phylum Crustacea)

- This group includes crabs, lobsters, squat lobsters, prawns, shrimps and also barnacles
- Mobile animals with a hard external skeleton
- Jointed legs and segmented body

Molluscs (Phylum Mollusca)

- This groups includes sea snails, bivalves, sea slugs and cephalopods (octopus, cuttlefish and squid)
- Fleshy body with no obvious segments
- Well-developed head (including eyes)
- Muscular foot
- Mostly grazers, although can be active predators

Sea mats (Phylum Bryozoa)

- Colonial of small, interconnected individual animals known as Zooids
- Each zooid secretes a protective compartment
- Colonies can be soft or hard and encrusting or erect, with many having a leaf-like appearance

Echinoderms (Phylum Echinodermata)

- This group includes the starfish, brittlestars and sea urchins
- Echinoderm means 'spiny skin'
- The group shows radial symmetry (has no left or right side), normally in a pattern of 5
- No head
- A water vascular system of canals and tube feet is used for movement, feeding and respiration

Sea squirts (Phylum Ascidiacea)

- Sac-like body with leathery outer tunic
- Attached filter feeders
- Can be solitary or colonial

Fish (Phylum Chordata, subphylum Pisces)

- Complex animals with a backbone
- Obvious head, eyes, mouth and fins
- Gills for breathing

Seaweeds – Algae

- Divided into three groups, Green, Brown and Red, depending on the photosynthetic pigment they contain.
- Green seaweeds (Chlorophyta) – The least numerous group, with the UK home to around 100 species. They thrive in shallow waters.
- Brown seaweeds (Phaeophyceae) – There are around 150 species in the UK, including the largest examples of our seaweeds, the kelps.
- Red seaweeds (Rhodophyta) – The most diverse group of seaweeds with over 350 species found around the UK. This group can survive at greater depths than both greens and browns due to their photosynthetic pigment being able to absorb blue light.