Beginners Guide to Shoresearch

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#Shoresearch

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Who is the guide for?

This guide is designed to provide a simple explanation of Shoresearch. This guide does not replace the survey methods, but is designed to completement them with further information and explanations to help you carry out a successful Shoresearch event.

As well as providing details on how to carry out the surveys, this document will also help you plan your events and point you in the direction of helpful resources. With the help of this guide and other resources staff/volunteers should be able to confidently lead and carry out Shoresearch survey events, even with limited marine knowledge.

What is Shoresearch?

Shoresearch is The Wildlife Trusts' citizen science programme of the intertidal shore, the exciting world of extremes where the sea meets the land. It was first developed by Kent Wildlife Trust in 2003-2004 and has undergone several developments to reach the four standardised survey methodologies used today. There are four different surveys within Shoresearch which are designed to collect valuable data from all our different shore types, by volunteers of differing marine surveying experience:

1. Quadrat Biodiversity Survey
2. Box Core Survey
3. Timed Species search
4. Walkover Survey

Why use Shoresearch?

Value for Your Trust and Local Area

Shoresearch surveys collect vital data for environmental protection and help to achieve The Wildlife Trusts charitable objectives; to promote the conservation and study of nature, educate the public to understand, appreciate and value nature and the need for conservation. Shoresearch allows us to collect valuable marine data that can be used as evidence in the designation process for Marine Protected Areas (MPAs) as well as providing opportunities for monitoring long term changes in the marine environment such as the effects of pollution, climate change and invasive species. The data collected is available to environmental organisations, scientists and individuals under an Open Government Licence, ensuring the true value of the data is realised.

Running your own surveys will help you get to know the different habitats and species in your area. Not only will you be adding to a national database of marine recordings, but you will also be collecting evidence and data for any marine projects you run or may wish to develop in the future. Shoresearch events help you engage with new audiences and introduce them to the work of the Trusts, with the chance to increase your Trusts membership. Shoresearch can also be used as a step along a membership journey, helping to promote your individual Trust and increasing awareness of the valuable work you do.

Value for Volunteers

Shoresearch gives volunteers the opportunity to explore their local coast, learn more about amazing marine wildlife, gain new skills and contribute to our understanding of important habitats. Shoresearch provides the perfect opportunity for volunteers to connect with nature, with multiple benefits. For example, a recent study has found that spending just two hours a week in nature has proven benefits to wellbeing and mental health.

Volunteers are instrumental in our ability to collect data. Without the help of our volunteer network, we would be unable to collect the quantities of data needed for our critical work to protect and enhance our living seas. Volunteers with the Wildlife Trusts join part of a wider community, with a collective desire to protect our wild places. Shoresearch is a great way to meet likeminded people, have a good time and enjoy nature!

The Surveys

Shoresearch comprises of four different surveys. The survey you decide to carry out will depend on the shore types you have in your area and the experience level of your volunteers. This section briefly describes each survey, indicating the experience level, equipment needed and suitable shore type(s). The full survey methodologies can be found in the Marine Surveying and Monitoring group on WildNet.

Site Information

At the start of all four surveys, the survey leader needs to complete a site information sheet. This only needs to be filled in by the survey leader. On this sheet you note the location and times of your survey, describe what the site looks like, habitat types and substrate, as well as providing information about environmental conditions. It is important to record your environmental conditions as some factors may impact how accurately you record wildlife in your survey.

Designation:

It is important to know if your chosen shore is designated site. This may include the following designations:

- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)
- Special Protected Area (SPA)
- Ramsar site

You can find the designated sites for your region here: England, Wales, Scotland, Northern Ireland.

Habitats

Your survey area may include a variety of different habitats and substrates. On the site information form select all the different types of habitats and substrates you can see on the shore within your survey area.

Rock pools: Rock pools are a type of rocky shore habitat where sea water remains in eroded pools in bed rock after the tide has retreated.

Figure 1 Rockpools at Rhosneigr (c) E Lowe

Figure 2 Rocky Shore in North Wales (c) E Lowe

Rocky shore: A rocky shore consists predominantly of bed rock, boulders, and pebbles.

Mudflats: A soft sediment shore consisting of clay and silt particles often associated with estuaries and salt marshes. A vital habitat for wading birds.

Figure 3 Sandy beach at Shell Island (c) E Lowe

Sandy beach: a soft sediment shore of sandy deposits, often with some gravel/shell fragments.

Green seaweed zone: A zone dominated by green seaweeds. Green seaweeds can be found at any shore height and can be an indicator of freshwater seepage.

Figure 4 Green seaweed zone (c) Peter Castleton

Brown seaweed zone: Brown seaweeds, such as bladder wrack, will dominate this zone. The species of brown seaweed will depend on the shore height and exposure level.

Figure 5 Brown Seaweed Zone, (c) E Lowe

Red seaweed zone: The zone is dominated by red seaweeds and is normally found below the brown seaweed zone and is often dominated by Irish moss (C*hondrus crispus*). This seaweed can trick you though! When exposed to strong light levels it will appear green, but it will still be found on the lower levels of the shore.

Figure 6 A red Seaweed- Irish moss (c)Nigel Phillips

Kelp Zone: The zone dominated by kelp, large brown seaweeds that make up the order Laminariales.

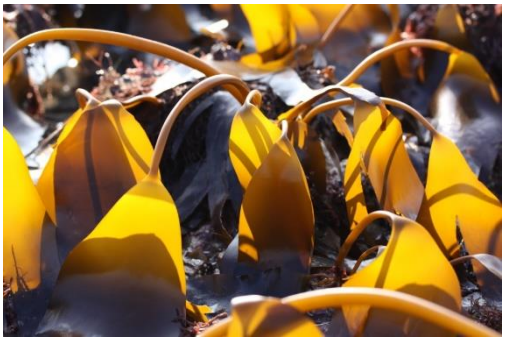


Figure 7. Kelp at low tide, Kent Wildlife Trust Becky Hitchin

Substrates:

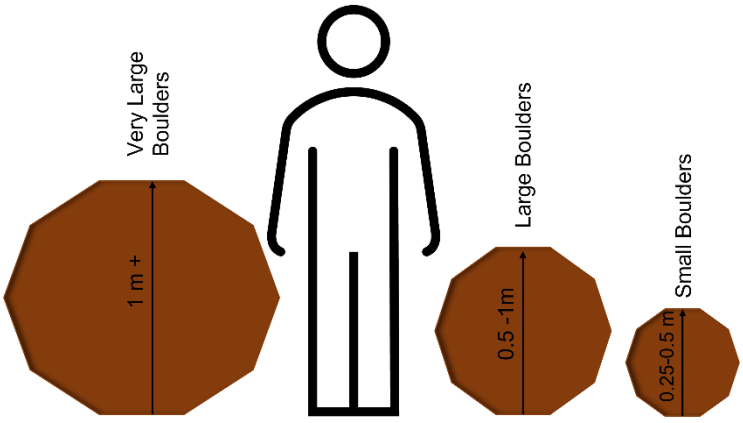
Bed rock: Hard rock that lies underneath softer material. On rocky shores bed rock is often exposed by the transportation of softer materials (i.e. sand).

Artificial: Manmade structures such as sea defences (groynes), wrecks, slipways.

Very large boulders: Boulders which are taller than 1m. These will not move.

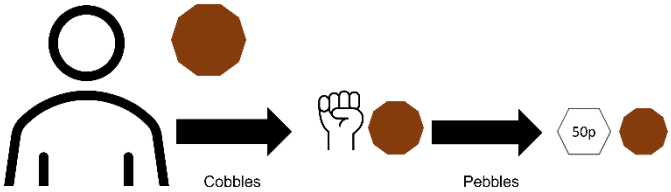
Large boulders: Boulders which are between 0.5 m and 1m tall. Maybe moved with some effort (warning: attempting to move these may cause injury.)

Small boulders: Boulders between 0.25 m and 0.5 m in height. Will require less effort to move.



Cobbles: Stones similar in size from you head to your fist

Pebbles: Stone between the size of your fist and a 50-p coin



Gravel (stone): Small stone smaller than a 50-p coin.

Gravel (shell): Crushed up shell fragments, similar sizes to stone gravel.

Sand: Small particles of stone and minerals which are un cohesive (do not stick to each other)

Mud: A mixture of water and soil, silt and clay.

Silt: Finer than sand particles. Silts with clay particles in are cohesive (will stick together)

When comparing between sands and silts, sand grains will move freely whereas muds and silts will stick together. If you are unsure, try rubbing some of the sediment between your fingers. If it feels smooth with no noticeable grains it is likely to be silt, if it feels grainy it is more likely to be mud.

Other: If your substrate type does not match any of the above descriptions, please include a brief description.

Cloud cover:

Cloud cover is measured in okta's (x out of 8) which is a unit of measure to describe the amount of cloud cover. A clear sky is 0 oktas (0/8), sky half covered with clouds is 4 oktas (4/8) and a sky completely covered in cloud is measured at 8 oktas (8/8).

Wind:

Wind is categorised into the following:

Calm: No wind, the sea appears like a mirror with a sea state of 0.

Light breeze: Winds up to 6 knots. The wind will be felt on your face and wind vanes will move. There will be small wavelets on the sea, with asea state of 2.

Moderate breeze: Wind speeds from 7-16 knots. Wind will move loose paper and small branches will sway. There will be small waves on the sea with frequent 'white horses' and breaking waves. The sea state will be between 3-4.

Strong Breeze: Wind speeds from 17-27 knots. Large branches will be moved by the wind. Large waves will form on the sea with extensive foam crests and a sea state of 5. Umbrellas would be used with difficulty.

The Methods:

The Shoresearch survey methods are designed for the intertidal zone - the area between the high tide mark and low water. The high tide mark is normally indicated by a line of washed up and dried seaweed towards the top of the beach (the strandline).

The intertidal zone is an extreme habitat which has highly variable abiotic factors (such as temperature and salinity) brought about by the rise and fall of the tide. Some species are able to withstand these changes more than others. This can lead to vertical zonation of the shore where species which can tolerate a greater time out of water are found at the top of the shore and less tolerant species are found lower down on the shore where they spend less time out of water. Different zonation patterns are found on different shores - no two shores will have the same zonation as they all experience unique variability in abiotic factors.

The quadrat biodiversity survey and box core survey are set up in a very similar way. For detailed information about setting up the survey area see the methods documents on WildNet and the training session videos.

To ensure the data collected is high quality, it is essential that volunteers are trained in how to do Shoresearch surveys and that sessions are led by a Wildlife Trust staff member.

Timed Species Search

Experience: ●○○○ Equipment: ●○○○ Shore: Rocky shore/strandline

The timed species search is the simplest Shoresearch survey to carry out as it requires the least amount of equipment and experience. It is an ideal survey for volunteers with little to no knowledge of the marine environment and is an excellent way to introduce them to Shoresearch.

This survey monitors the distribution of certain species by recording their presence or absence. Species lists are available in packs on WildNet for your regional sea area (e.g. Irish Sea, please see

the timed species method document to identify which regional area your coastline belongs in), non-native/invasive species and climate change indicator species.

For this survey, an area no bigger than 100 m by 100 m is marked out with colourful buckets/markers. Alternatively, you can use geographical features. Make sure your volunteers are aware of the survey area and keep an eye on participants during the survey to ensure they stay within this.

Volunteers spend 10 minutes dedicated to searching for up to 4 different species they have been assigned from the species list and will record their presence or absence (if searched for but not seen). The number of species an individual can be assigned will depend on their experience level. It is recommended those with no experience search for 1 species, while those with more experience can search for up to 4 species. After the 10-minute search is completed repeat a further two times, allowing participants to have a break of at least a few minutes between each search, to complete a total of three searches for each species. Ask your volunteers to stay where they are during break to stop them wandering off and having to wait for them to return to rescue the surveys. If you are only able to carry out one 10-minute search, have 3 volunteers look for the same species to make sure that the species has been searched for a total of 30-minutes effort (10 minutes effort x 3 different people = 30 minutes effort).

Only live species are recorded during timed species searches. You may wish to use this survey to record strandline species, however, please don't upload sightings of dead or unattached organisms to the Shoresearch app or data portal. While designed for rocky shores, the timed species search may also be useful to record living species on soft sediments.

Walkover Survey

Experience: ●●●○ Equipment: ●○○○ Shore: Rocky shore

The walk over survey is a great way to introduce volunteers to the diversity of the marine environment. This survey involves collects qualitative data by creating a list of all the species you can find within a selected area of the intertidal zone. It's a great way to collect valuable data on the distribution of marine species while giving volunteers the chance to explore the marine environment. This method provides volunteers with experience in survey methods, without having to use lots of equipment.

For this survey, set up an area no larger than 100 m by 100 m. If your shore has clear zonation carry out separate surveys for each of zone. If no zones are clear, survey the entire shore from the strandline to the water's edge. Start at the top of the shore and work your way down as the tide retreats to survey the whole intertidal zone. Volunteers walk within the survey area(s) systematically identifying and recording all the different species they find. It is often useful to organise participants in a line to methodically work across the entire survey area.

This survey is not appropriate for habitats which are sensitive to trampling such as honeycomb worm reefs (*Sabellaria* reefs, formed by a worm which builds fragile tubes of sand to live in).

Biodiversity Quadrat Survey

Experience: ●●●○ Equipment: ●●●● Shore: Rocky shore

This survey will require participants to have some prior experience or training in Shoresearch surveys. When introducing new volunteers to this survey, partner them up with a volunteer who is experienced in the survey. This method requires specialised equipment and a larger group size.

Aim to complete 5 quadrats in each zone. If, for whatever reason (tides, weather, lack of hands) you are unable to carry out enough quadrats across the whole survey area, focus your efforts on one zone to make sure you complete enough quadrats to survey zone well.

If a quadrat ends up containing more than 25% standing water, flip it to the right until you reach a location that has less standing water. Although part of the intertidal zone, rock pools can house subtidal species which have been caught out by the tide, such as certain species of fish, which lead to anomalous data and could lead to the quadrat being discounted. The water will also allow mobile species to move more easily, and they may leave the quadrat area and not be recorded.

All seaweeds and encrusting species (sponger, barnacles, bryozoans, mussels, sea squirts, keel worms etc) should be recorded as percentage cover. If the percentage cover is smaller than 1%, record this as less than 1% (<1%). If practical and useful to record, you can additionally add a count in the comments section.

All mobile species (invertebrates and fish – snails, crabs, fish, echinoderms, spirorbis worms, scallops) should be recorded as the number of individuals (counts).

Additional tips – do I record this as count or cover?!

- *Spirobis* species – please record "estimated" counts (we appreciate this is hard sometimes, but it would be more inaccurate than doing a percentage cover).
- Springtail *Anurida maritima* – please attempt to count but if difficult estimate to nearest 10 and note in the comments that you the count is estimated to the nearest 10.
- Tiny periwinkle *Melarhaphe neritoides* – estimated count.
- Volcano barnacles – these are sometimes easy to count if there are only a few but to allow comparison with other barnacles please record as percentage cover.

Box Core Survey

Experience: ●●●● Equipment: ●●●● Shore: Soft sediment

This survey is for soft sediment shores such as mud and sand. The box core survey collects quantitative data on the abundance of infaunal species. Using a corer (tube/pipe) you will take a sample of sediment and then rinse it with water through a sieve to remove as much of the sediment as possible to revel infaunal species.

Sediment samples (cores) are taken at random locations within a survey area. Like the quadrat survey, if zonation is clear, you should split your survey area into zones, with core samples taken randomly within each zone. If zonation is not clear, take your cores at randomly selected co-ordinates for the whole survey area.

It is recommended that you run this survey with experienced volunteers as the species can be difficult to identify. If you have volunteers of mixed experiences, pair a more experienced volunteer up with someone less experienced.

Top tip: If you have small sieves, fill two sieves with sediment from the same core and hold one above the other as you pour water from the top sieve to the bottom sieve. This will save water and trips to collect it! Make sure to fill the sieve with sediment from the same core sample. It is useful to have buckets of water ready to sieve your samples, so you don't have to keep walking up and down the beach.

In these surveys you are likely to come across many different species of worms and bivalves. Worms can be quite hard to identify without a microscope so you may only manage to identify to genus level, don't worry if you cannot identify to a species level. Knowing which genus groups are present is still valuable. You may find it helpful to take a hand-lens with you helps to identify organisms.

Resources:

Survey Method Documents and Recording Sheets

All Shoresearch resources are available on WildNet here.

Species ID Cards

To help aid you and your volunteers in identifying different marine species, ID cards are available for the timed species search survey, however, these may also be useful for other Shoresearch surveys. The species ID cards are available to download on WildNet and can be customised to add your Trust's logo and additional species.

Each card has a photograph of the species with its common name, scientific name and a guide to its size. On the reverse of the photograph there is some information about the key identifying features and where to look the species on the shore. The circles at the top of the card indicate which zones the species is found in; H= High shore; M= Mid shore; L= Low shore. There are also symbols to indicate why the species has been identified as a special interest for monitoring.

 = Climate change indicators. These are species which are normally found in warmer southern waters but as sea water temperatures increase their range may expand.

 = Non-native species. These species are non-native to our seas and are a risk to our native ecosystems.

 = Changing distribution species. Species with this icon are likely to experience a change in distribution from their historic range, which we need to monitor.

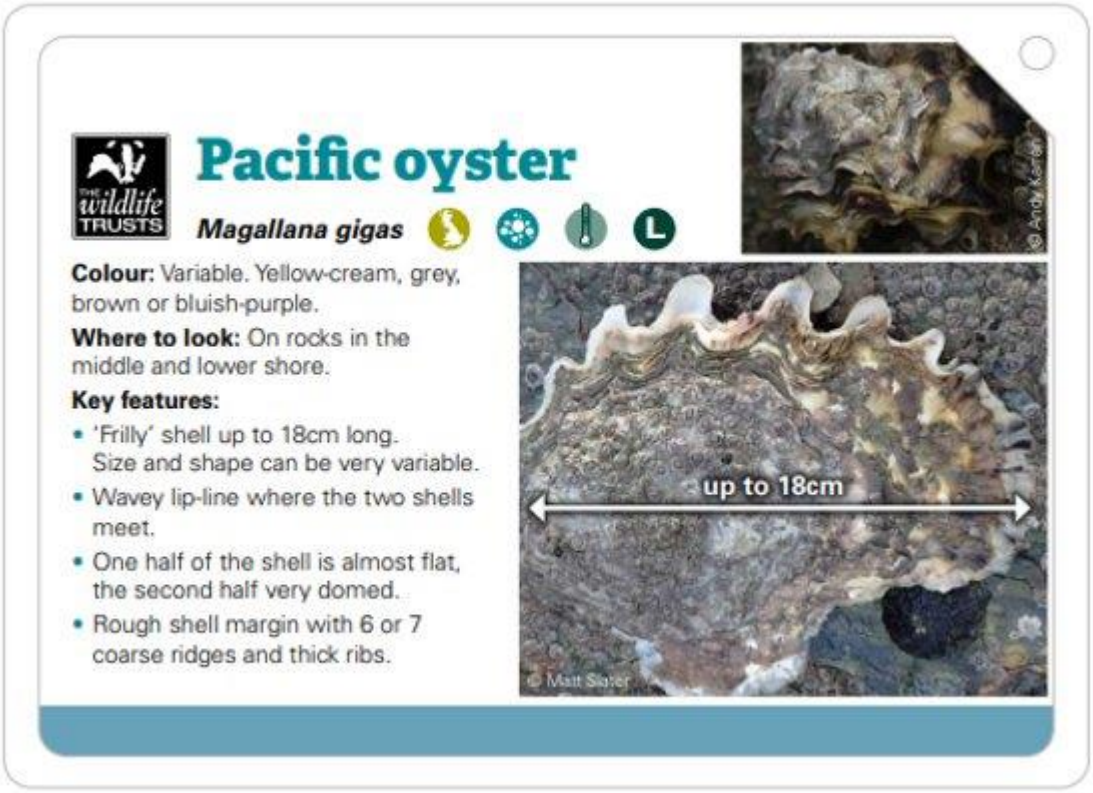


Figure 8 – ID card example

Running Shoresearch Surveys

Before the survey

- Visit the shore. Before your event, it is important to check the shore you will be surveying. This will allow you to assess any risks associated with that shore, see where the entrances and exits to the beach are, where the nearest point of access for emergency vehicles (needed for the risk assessment) is to the area you want to survey and give you an idea as to the zonation of the shore.
- Check tides. Visit BBC, Tide times or Admiralty EasyTide to check your local tide times. To survey as much shore as possible, plan your survey to fall on a spring tide as this will give you access to the very lowest part of the shore.
- Set a time and date. Aim to be on the shore as the tide is falling and chose a date that will allow you the most sunlight.
    - Give yourself more time than necessary. It can take longer to set up surveys than you think, especially if you are on your own.
- Complete a risk assessment (see Health and safety section below)
- Provide your volunteers with resources to read before the survey (such as method documents and species ID guides) and your mobile number so they can get in contact with you on the day.

- Collect the emergency contact details and mobile numbers from you volunteers, as well as photo consent forms. Ensure these are kept in line with your Trust's GDPR policies. For Covid-19 Track and Trace, keep the volunteer's contact details for three weeks in case of a positive test result from a member of the group.
- 24 hours before your event, assess the weather conditions and confirm that the event is going ahead. If the weather looks poor, cancel the survey.
- Allow some time for rockpooling/strandline walk at the end of the survey. If you are carrying out a box or quadrat survey you may like to set aside some time at the end of the survey for volunteers to have an explore. On rocky shores it is very easy to get distracted by rockpools. Remind volunteers to stay focused on the survey until you have enough quadrats completed and then spend some time for exploring rockpools at the end.

At the Start of the Survey

- Carry out a health and safety briefing
    - Make sure to include what to do in case the leader is involved in an incident.
- Explain what Shoresearch is, the survey you're doing and why you are doing it.
    - The Shoresearch web page is a good place to start for background information.
- Make sure participants know how to use all the equipment.
- Encourage participants to take photos especially of unknown species.

During the Survey

- Be available for volunteers that have questions or are unsure of the ID of a species.
- Ensure volunteers stay within the survey area.
- Encourage participants to take photographs.
- Keep an eye on the tide and weather. Be prepared to stop a survey if conditions become unsafe.

After the survey

- Thank your volunteers for their time and highlight the key species you found.
- Send out a short email to volunteers highlighting any notable finds.
    - Please copy in the central team (marine@wildlifetrusts.org).
- Upload the survey data to the Shoresearch data portal.
- You may wish to write a blog about the survey or a group of surveys. Use volunteer photos, with permission.

Health and Safety

Health and safety is of upmost importance when running surveys. Rocky shores can be slippery and dangerous, with a considerable risk of slips, trips and falls. Weather is never guaranteed, and poor weather can increase the likelihood of health and safety risks occurring. Always keep an eye out on the weather and avoid high wind and torrential rain. It is better to reschedule or stop a survey than ending up with an injury to yourself of volunteers.

Some of the surveys, in particular the core and quadrat surveys, require a lot of crouching down and bending over which may increase the risk of injury. Before carrying out a survey it is important you complete a risk assessment (an example can be found here, please seek guidance within your

individual Trust). You must give a safety briefing to volunteers prior to starting the survey, clearly outlining the risks and mitigation measures identified on the risk assessment. It is recommended that you set a dress code (such as walking boots or wellies, waterproof clothing, gloves etc) to reduce any possible hazards.

When you are on the shore, we recommended you set an alarm for low water, so you do not get caught out by the change of tide. You should also continue to assess the conditions in case the weather changes and makes it unsafe to stay out. It is better to end a survey early than risk an injury caused by bad weather.

Training Volunteers

Before heading out to the coast to carry out a survey, you may find it beneficial to host a training session for your volunteers. This can be done either online or in person. Running training sessions before hand gives volunteers the opportunity to learn about the survey methods, review the survey forms and ask any questions before they are in the field. As well as making them familiar with the survey, these sessions will also give you the opportunity to provide some species ID skills which will make the data collected more reliable. If you carry out the training on a shore it can be easy to become distracted by the amazing wildlife you will be surrounded by.

We are compiling resources on WildNet that you may adapt and use to provide training to your volunteers. These have been provided by different Trusts around the UK which run Shoresearch events. If you already have resources you would like to share, please upload them into this folder.

Promoting Your Shoresearch Survey Events

It is important to take photos of your surveys, not only can these be used for promotion on social media, but they can also be used to help identify unknown species after the survey. Please photograph species of interest such are rare species or invasive species and upload these with your record as they can help verify that the species was found at that location.

When posting about your survey on social media please use **#Shoresearch** and tag The Wildlife Trusts (@WildlifeTrusts- Twitter, @thewildifetrust- Instagram, @wildlifetrusts- Facebook) and your local Trust.

If you take photos of your volunteers, you will need written permission to take and use these. Remember to take along your Trust's Photo Consent Form.

Collecting and Submitting Data

Paper Survey Forms

Each survey comes with its own recording form. The forms are available as PDFs or Microsoft Word documents, in case you would like to add your Trust's logo. For the quadrat and core surveys you will need a site information sheet for the survey area, plus a sheet for each quadrat/core sample you carry out. For the timed species search and walkover surveys you will need one sheet per survey area.

Smartphone & Tablet App

The Shoresearch app allows Shoresearch leaders and volunteers (with an account) to carry out surveys without the need for paper. The app allows you to record your data in the field and saves it, even without signal, to upload to the data portal later (when in range of Wi-Fi/mobile data).

To download the app search for 'Shoresearch' on the App Store or on Google Play Store.

We recommend you use your device(s) within a waterproof protective case (The Wildlife Trusts will not accept liability for any damage caused to devices).

Shoresearch Data Portal

The Shoresearch Data Portal is a website which allows you to upload your data to the Shoresearch database. Using the website, you will be able to easily upload your data where it will be stored and made available for you to download as excel sheets, should you require the data for reports/promotion. If you come across sensitive species, you can blur the location on the data portal to up to 100 km so its precise location isn't shown.

To use the data portal or app, you will need to login in. Currently accounts are assigned to a Trust and all surveys are uploaded under the same account. If your Trust does not have an account, please email marine@wildlifetrusts.org and they will set up an account for you.

For more details on the Shoresearch app and data portal, see the guide on WildNet.

FAQs

Q: I can't identify a species…

A: If you are new to marine surveying there will probably be some species you don't recognize, in fact, even the most experienced Shoresearchers will come across species they are unable to ID. Fear not! If you come across a species you are unable to identify, try to take photos (including of the area the species was found (GPS tags on cameras are also very useful) and take photos from various angles with a marker for scale – if you have nothing else use your finger/hand for scale) and upload it as a post on the Marine Survey and Monitoring group on WildNet and we will help you identify the species. Tag your post with #Shoresearch.

There are also a number of species ID books designed for amateur marine biologists which are listed in the further reading section.

Q: What happens to the data I submit?

A: Data inputted into Shoresearch Data App (including any uploaded photos) links with the national Shoresearch Data Portal and can be reviewed by your coordinating local Wildlife Trust. The Shoresearch Data Portal is based on the biological record management software developed by The Biological Records Centre (BRC) called Indicia. The software is utilised by iRecord and other environmental recording schemes. Indicia is developed with record verification and data flow ability in mind and has functionality inbuilt to facilitate these.

Submitted Shoresearch Data is hosted on the Biological Records Centre online data warehouse. From here it is incorporated into the iRecord verification procedures (see the Q below for details) to

ensure accuracy of the records. This process ensures that Shoresearch survey data is available to users at a national level.

BRC Indicia hosted datasets, once verified, are shared with the National Biodiversity Network (NBN) Atlas under agreement from The Wildlife Trusts. The dataset is updated on the NBN Atlas on a two-monthly or quarterly basis using an automated export process.

Shoresearch data is shared under an Open Government License (OGL) and allows Local Environmental Record Centres and other designated organisations or individuals to download Shoresearch survey data from the Shoresearch Data Portal for via iRecord LERC download functionality. This ensures the downward flow of data to local biological record processors for use at county/local level.

This data flow ensures the valuable Shoresearch data you collect can be shared and used by environmental organisations, scientists and individuals. This realises the true value of your data, helping to protect the marine environment.

Q: How is Shoresearch data validated and verified?

A: Shoresearch data goes through a thorough validation and verification process to ensure records are accurate.

Validation is the process of carrying out standardized, often automated checks on the 'completeness', accuracy of transmission and validity of the content of a record.

Verification is the process that ensures the accuracy of the identification of the things being recorded.

Before entry into any data system, each record collected through Shoresearch is either verified in the field or via photographic checking by Shoresearch staff or core volunteers. Once manually checked, the records are processed into the national Shoresearch Survey Data Portal.

As the portal is based on an Indicia system, it adopts an online approach to record verification. Verification is done within the BRC process via iRecord. For more information on the iRecord verification process, please see the BRC website.

Q: How is Shoresearch run?

Shoresearch events are run by local Trusts. They hold training sessions for their volunteers to learn about the surveys and become familiar with species identification. If you are new to running Shoresearch and do not have your own training materials, there is a folder on WildNet for Trusts to share their materials. Have a look here or write a post to ask other Trusts if they have any material they are able to share. If you have material you would like to share please upload it to the folder.

To assist the Trusts in their capacity to run Shoresearch events, The Wildlife Trusts (Central Team) provides training to Trust staff who would like to learn or refresh their knowledge about the surveys and how to organise an event. As well as providing training sessions for staff, the central team manages the data portal websites ensuring that it is kept up to date and any issues are ironed out;

provides resource for the Trusts to use on the shore (species ID cards) and apply for funding for future developments.

Have another question? Please email marine@wildlifetrusts.org.

Glossary

Strandline - The strandline is the mark left by the high tide. The water will bring in seaweed and other debris which is deposited by the incoming tide.

Marine Protected Area - An area designated by the government to protect certain features from being damaged. In the UK we have different types of MPA designations.

SSSI - Sites of Special Scientific Interest: A conservation designation which is often the building blocks for further designation.

SAC - Special Area of Conservation: Areas which have been given protection under the European Unions' Habitat Directive. They provide increased protection to a variety of species, plants and habitats.

SPA - Special Protection Area: Areas that have been identified as of international importance for breeding, feeding, wintering or migrations of rare and vulnerable birds found in European Union Countries.

Ramsar – A wetland of international importance, designated under the Ramsar Convention of 1971.

MCZ - Marine Conservation Zone- A protected area designated to protect nationally important rare or threated habitats and species.

HPMA - Highly Protected Marine Area. Coming to English Seas in 2022!

Qualitative - Descriptive data e.g. what species are found on a shore.

Quantitative - Data that can be expressed as numbers and be used for statistical analysis i.e., the population size of species found on a shore .

Intertidal zone - The zone between low and high tide on a shore **.**

Community - A group of different species interacting in a habitat.

Abiotic factors - The physical factors influencing a habitat e.g. water temperature.

Infauna - The species living within the sediments of a shore.

Further reading

ID guide resources:

Books:

Collins Pocket Guide - Seashore of Britain and Northern Europe - This book is now out of print but copies can be found on eBay or in second hand shops.

Great British Marine Life - Paul Naylor: 4th edition 2021, 3rd edition 2011.

Marine fish and Invertebrates of Northern Europe Moen, F.E and Svenson, E (2004).

Seasearch have published a number of guidebooks on marine life including Seaweeds (2016).

Websites:

The following websites can help helpful ID tools or to find out information of species and habitats

- The Marine Life Information network (MarLIN) is a useful source of information on the biology of species and ecology of habitats - https://www.marlin.ac.uk/
- Encyclopaedia of Marine Life of Britain and Ireland- http://www.habitas.org.uk/marinelife/
- NBN https://nbn.org.uk/
- Algae base https://www.algaebase.org/